CITY OF RANCHO CORDOVA

CITY COUNCIL MEETING

3:00 PM – Special Meeting
David B. Roberts Council Chambers

5:30 PM – Regular Meeting
David B. Roberts Council Chambers

Monday, January 6, 2020

City Hall
2729 Prospect Park Drive, Rancho Cordova

AGENDA

1. SPECIAL MEETING - CALL TO ORDER/ROLL CALL

Council Members Budge, Gatewood, McGarvey, Terry and Mayor Sander.

2. PUBLIC COMMENT

At a special meeting, citizens wishing to address the Council for any matter on the agenda may do so at the time the matter is discussed. Under the provisions of the California Government Code, the City Council is prohibited from discussing or taking action on any item not on the agenda.

3. SPECIAL MEETING ITEM

3.1. **Subject:** CivicClerk Agenda Management Software Demonstration and Training. **Recommendation**: Receive information and participate in a continued demonstration and training of the CivicClerk Agenda Management Software.

4. ADJOURNMENT OF SPECIAL MEETING

Mayor Sander will adjourn the special meeting to regular meeting in the David B. Roberts Council Chambers.

5. REGULAR MEETING - CALL TO ORDER/ROLL CALL

Council Members Budge, Gatewood, McGarvey, Terry and Mayor Sander.

6. METRO CABLE TV TELEVISION ANNOUNCEMENT

The Clerk will announce the meetings video recording and playback schedules.

7. PLEDGE OF ALLEGIANCE

The Mayor will call on someone in attendance to lead the Pledge.

8. INVOCATION

Olga Hermann of Oasis Christian Ministries will give the invocation.

9. PRESENTATIONS

9.1. Community Enhancement Fund Grant Check Presentations to 1) Elk Grove Unified School District; 2) Folsom Cordova Unified School District - Mitchell Middle School Field Trip and Murals; 3) Folsom Cordova Unified School District - Cordova High School Musical Production; 4) Cordova Community Council Foundation; 5) Folsom Lake College Foundation.

10. PUBLIC COMMENT

Citizens wishing to address the Council for any matter not on the agenda may do so at this time by completing and submitting a Speaker Card to the City Clerk. For items on the agenda, speakers will be called up to the podium by the Mayor at the point on the agenda when the item will be heard. Speakers are encouraged to keep comments to three minutes or less and to state name and community of residence. Under the provisions of the California Government Code, the City Council is prohibited from discussing or taking immediate action on any item not on the agenda unless it can be demonstrated to be of an emergency nature or the need to take immediate action arose after the posting of the agenda.

11. COUNCIL REPORTS

12. CITY MANAGER'S REPORT

13. CONSENT CALENDAR ITEMS - ROLL CALL VOTE

13.1. **Subject:** Meeting Minutes from the Regular City Council Meeting of December 16, 2019.
Recommendation: Adopt the Minutes.

13.2. **Subject:** Second Reading of an Ordinance Amending Sections of the Rancho Cordova Municipal Code Related to Title 23 Zoning Code, Article 3 Zoning District, Allowable Uses, and General Development Standards, Article 7, Site Planning and Development Standards, and Article 9 Specific Use Provisions.
Recommendation: Waive the second reading and adopt the Ordinance.

13.3. **Subject:** Approval of Council Member Appointments to Regional Boards, Commissions, and Committees.
Recommendation: That Council confirms commitments to serve on other agency boards, commissions, and committees.

14. CONSENT PUBLIC HEARING ITEMS - ROLL CALL VOTE

14.1. **Subject:** Jonathan Hsu Dental Office Conditional Use Permit (CUP); Project No. DD9914 - A CUP for a Dental Office Located at 11121 Sun Center Drive, Suite E Within the City's Convention Overlay Zoning District.
Recommendation: Determine the project Exempt per Categorical Exemption Section 15301, Existing Facilities, and adopt the Resolution for a Conditional Use Permit.

14.2. **Subject:** 2440 East Tiffany Lane Solar Trellis Conditional Use Permit No. DD9906. For a 192 Square Foot Solar Trellis Located Within the 60-Foot Setback of the American River Parkway Corridor Erosion Zone.
Recommendation: Staff recommends that the City Council find the project categorically exempt from further California Environmental Quality Act (CEQA) review and adopt the Resolution approving the Conditional Use Permit for the 2440 E. Tiffany Lane solar trellis project subject to the findings, Project Plans with conditions as follows: 1) The solar panels shall be a dark non-reflective type. 2) The applicant shall obtain a building permit for the trellis structure and solar panels.

15. PUBLIC HEARING ITEMS

15.1. **Subject:** Sunrise Palms; Conditional Use Permit, Administrative Use Permit, Major Design Review and Request for a Letter of Public Convenience and Necessity; Project No. DD9841 – Located at 3251 and 3261 Sunrise Boulevard (Northeast Corner of Sunrise Boulevard and Monier Circle), 072-0410-094-0000.
Recommendation: Staff recommends that the City Council find the project categorically exempt from further California Environmental Quality Act (CEQA) review and adopt the Resolution approving the Conditional Use Permit, Administrative Use Permit, Major Design Review, and Letter of Public Convenience and Necessity for alcohol beverage sales for wine and beer within the convenience store subject to the findings, Project Plans and Conditions of Approval.

15.2. **Subject:** An Ordinance amending the Rancho Cordova Municipal Code related to Title 22 (Land Development), Chapter 22.40 Park and Recreation Dedication and Fees.
Recommendation: Introduce and waive the first reading of the Ordinance that will incorporate new factors for age-restricted single-family and multi-family dwelling units.

15.3. **Subject:** The Ranch Special Planning Area– PROJECT NO. DD9725 – General Plan Amendment, Rezone to The Ranch Special Planning Area, Development Agreement, Affordable Housing Plan, Large Lot and Small Lot Tentative Subdivision Map

Recommendation: Recommend the City Council approve The Ranch Special Planning Area, a project that proposes mixed use development on approximately 530 acres east of Rancho Cordova Parkway and south of Douglas Boulevard:

- Adopt the Resolution Certifying The Ranch Environmental Impact Report and Adopting Environmental Findings, a Statement of Overriding Considerations, and a Mitigation Monitoring and Reporting Plan for the Ranch Special Planning Area.
- Adopt the Resolution approving a General Plan Amendment, and Large Lot and Small Lot Tentative Subdivision Maps with attached Conditions of Approval.
- Introduce and waive the first reading of the Ordinance Approving the Rezone for The Ranch Property from Agricultural 80 to The Ranch Special Planning Area which would

establish a land plan, zoning standards, and design guidelines, as well as preliminary phasing plans.
- Introduce and waive the first reading of the Ordinance Approving the Development Agreement and Appendices for The Ranch project.
- Adopt the Resolution Approving The Ranch Affordable Housing Plan.

16. REGULAR CALENDAR ITEMS

16.1. **Subject:** Technology Initiatives Update
Recommendation: Receive Technology Initiatives Update.

17. COUNCIL REQUESTS FOR FUTURE AGENDA ITEMS

18. ADJOURNMENT

ADDITIONAL INFORMATION

SPECIAL MEETINGS LISTED BELOW ARE SUBJECT TO CHANGE/CANCELLATION WITHOUT FURTHER NOTICE.

UNLESS THE COUNCIL ADOPTS A MOTION TO EXTEND THE MEETING, ANY ITEM THAT IS NOT INITIATED BEFORE 11:00 PM WILL BE CONTINUED TO THE NEXT DAY AT 5:30 PM OR SCHEDULED ON THE NEXT REGULAR MEETING AGENDA OF THE COUNCIL.

Public documents related to items on the open session portion of this agenda, which are distributed to the City Council less than 72 hours prior to the meeting, shall be available for public inspection at the time the documents are distributed to the Council. Documents are available for inspection at the City Clerk's office located in Rancho Cordova City Hall.

The agenda items are accessible on the City's website at www.cityofranchocordova.org on Thursdays or Fridays prior to the Regular City Council Meeting.

UPCOMING MEETINGS

January 21, 2020	5:30 PM Regular Meeting
January 28, 2020	3:00 PM Special Meeting/Work Session
February 3, 2020	4:00 PM Special Meeting/Regular Meeting
February 18, 2020	5:30 PM Regular Meeting
February 25, 2020	5:30 PM Special Meeting/Work Session
March 2, 2020	5:30 PM Regular Meeting
March 16, 2020	4:00 PM Special Meeting/Regular Meeting
March 24, 2020	5:30 PM Special Meeting/Work Session
April 6, 2020	4:00 PM Special Meeting/Regular Meeting
April 14, 2020	5:30 PM Special Meeting/Work Session
April 20, 2020	5:30 PM Regular Meeting
May 4, 2020	4:00 PM Special Meeting/Regular Meeting
May 12, 2020	5:30 PM Special Meeting/Work Session

May 18, 2020	5:30 PM Regular Meeting
June 1, 2020	4:00 PM Special Meeting/Regular Meeting
June 15, 2020	5:30 PM Regular Meeting
June 23, 2020	5:30 PM Special Meeting/Work Session
July 6, 2020	4:00 PM Special Meeting/Regular Meeting
August 3, 2020	4:00 PM Special Meeting/Regular Meeting
August 17, 2020	5:30 PM Regular Meeting
August 25, 2020	5:30 PM Special Meeting/Work Session
September 8, 2020	4:00 PM Special Meeting/Regular Meeting
September 21, 2020	5:30 PM Regular Meeting
September 29, 2020	5:30 PM Regular Meeting/Work Session
October 5, 2020	4:00 PM Special Meeting/Regular Meeting
October 13, 2020	5:30 PM Special Meeting/Closed Session
October 19, 2020	5:30 PM Regular Meeting
October 27, 2020	5:30 PM Special Meeting/Closed Session
November 2, 2020	5:30 PM Regular Meeting
November 10, 2020	5:30 PM Special Meeting/Work Session
November 16, 2020	4:00 PM Special Meeting/Regular Meeting
December 7, 2020	4:00 PM Special Meeting/Regular Meeting
December 15, 2020	5:30 PM Special Meeting/Work Session
December 21, 2020	5:30 PM Regular Meeting

If you have any technical questions related to the agenda items, please contact City Hall at (916) 851-8700.

The Rancho Cordova City Council meeting will be videotaped in its entirety and will be cablecast without interruption on Metro Cable 14, the Government Affairs Channel on the Comcast, Consolidated Communications and AT&T U-Verse Systems. Closed Captioning will be available on the playback cablecast. A DVD copy is available from the City Clerk's Department and a webcast of this meeting will be available for viewing via video streaming from the City's website within 48 hours of adjournment of this meeting.

In compliance with the Americans with Disabilities Act, if you need a disability-related modification or accommodation, including auxiliary aids or services, to participate in this meeting, please contact the City Clerk's Office at (916) 851-8720 at least 48 hours prior to the meeting.

CERTIFICATION OF POSTING OF AGENDA

I, Stacy Leitner, City Clerk for the City of Rancho Cordova, declare that the foregoing agenda for the January 6, 2020 Regular Meeting of the Rancho Cordova City Council was posted and available for review on January 2, 2020 at City Hall of the City of Rancho Cordova, 2729 Prospect Park Drive, Rancho Cordova, California, 95670. The agenda is also available on the city website at www.cityofranchocordova.org.

Signed January 2, 2020 at Rancho Cordova, California.

Stacy Leitner, CMC
City Clerk

MEMORANDUM

DATE: January 6, 2020

TO: Honorable Mayor and Council Members

FROM: Stacy Leitner, City Clerk and Senior Executive Assistant

SUBJECT: **CIVICCLERK AGENDA MANAGEMENT SOFTWARE DEMONSTRATION AND TRAINING**

RECOMMENDATION

Receive information and participate in a continued demonstration and training of the CivicClerk Agenda Management Software.

RESULT OF RECOMMENDED ACTION

The City Council and staff will receive information and training on CivicClerk.

BACKGROUND

The City Clerk's office provided a demonstration and training of the new CivicClerk Agenda Management Software to the City Council at the December 16, 2019 City Council Meeting. This is a follow-up to the training and an opportunity for the City Council to have a more in-depth experience and additional training with our staff and Consultant from CivicPlus.

FISCAL IMPACT AND FUNDING SOURCE

There is no fiscal impact.

ATTACHMENT(S)

None

CITY COUNCIL MEETING

City Hall
2729 Prospect Park Drive, Rancho Cordova

Monday, December 16, 2019

4:00 PM – Special Meeting

5:30 PM – Regular Meeting
David B. Roberts Council Chambers

DRAFT MINUTES

1. SPECIAL MEETING - CALL TO ORDER/ROLL CALL

Mayor McGarvey called the special meeting to order in the David B. Roberts Council Chambers at 4:17 p.m.

Council Members Present: Budge, Gatewood, Sander, Terry and McGarvey.

Council Members Absent: None.

Staff Members Present: Abhar, Leitner, Riley, Runner, Siren, Sparkman, Splendorio, Thompson, Wassom.

2. PUBLIC COMMENT

Mayor McGarvey opened the public comment period. Seeing no speakers, Mayor McGarvey closed the public comment period.

3. SPECIAL MEETING ITEM

ACTION: Council received information and participated in a demonstration and training of the CivicClerk agenda management software.

3.1 **Subject:** CivicClerk Agenda Management Software Demonstration and Training.
Recommendation: Receive information and participate in a demonstration and training of CivicClerk, a cloud-based agenda management software specifically built for local government to save resources and deliver greater access to City Council meetings. Staff will receive input for finalizing the implementation process.
Result of Recommended Action: The City Council and staff will receive information

and training on CivicClerk.
Staff Report: Stacy Leitner, City Clerk and Persephonie Riley, Assistant City Clerk.
Advances Goals: 1.

4. ADJOURNMENT OF SPECIAL MEETING

Mayor McGarvey adjourned the special meeting to the regular meeting in the David B. Roberts Council Chambers at 5:15 p.m.

5. REGULAR MEETING - CALL TO ORDER / ROLL CALL

Mayor McGarvey called the regular meeting to order in the David B. Roberts Council Chambers at 5:37 p.m.

Council Members Present: Budge, Gatewood, Sander, Terry, and McGarvey.

Council Members Absent: None.

Staff Members Present: Abhar, Bane, Behrends, Brown, Cowles, Delaney, Ducharme, Goulart, Heisler, Ingalls, Juran, Kniestedt, Leitner, Leonardich, Lewis, Lopez, Mingay, Pittman, Ramos, Riley, Roach, Runner, Schelldorf, Siren, Sparkman, Splendorio, Stricker, Thompson.

6. METRO CABLE TV TELEVISION ANNOUNCEMENT

The City Clerk read the meetings recording and playback schedule.

7. PLEDGE OF ALLEGIANCE

Robert Van Cleef led the pledge.

8. INVOCATION

Destiny Higashi from Yattyir Hybrid School gave the invocation.

9. SPECIAL CEREMONIES - SWEARING IN MAYOR AND VICE MAYOR

9.1 Garrett Gatewood was sworn in as Vice Mayor by father Stephen Gatewood.

9.2 David M. Sander was sworn in as Mayor by wife Dr. Maggie Parsons and son Charles Sander.

9.3 Presentation to Outgoing Mayor McGarvey.

10. CELEBRATORY BREAK

AT THIS POINT: At 5:57 p.m. the Council took a break for refreshments in the lobby in honor Of the swearing in of Vice Mayor Gatewood, and the swearing in of Mayor Sander. The full Council Resumed at 6:26 p.m.

11. PRESENTATIONS

11.1 Community Enhancement Fund Grant Check Presentations to 1) Elk Grove Unified School District; 2) Cordova Community Council Foundation; 3) Boys & Girls Clubs of Greater Sacramento; 4) Rancho Cordova Chamber of Commerce; 5) Folsom Cordova Unified School District.

11.2 Employee Milestone Anniversary Presentations.

12. PUBLIC COMMENT

Mayor Sander opened the public comment period. The following individual addressed the Council:

13. COUNCIL REPORTS

Council Reported on events since the last meeting.

14. CITY MANAGER'S REPORT

City Manager Cyrus Abhar gave his report.

15. CONSENT CALENDAR ITEMS - ROLL CALL VOTE

ACTION: Motion to approve items 15.1 through 15.7 by Budge second by McGarvey; Motion passed with a 5:0 vote.

15.1 **Subject:** Meeting Minutes from the December 2, 2019 Regular City Council Meeting and the December 10, 2019 Special City Council Meeting.
Recommendation: Adopt the Minutes.

15.2 **Subject:** A Resolution of the City Council of the City of Rancho Cordova Making Certain Findings and Determinations Related to, and Accepting, the Fiscal Year 2018-19 Development Impact Fee Report for the AB1600 Development Fees.
Recommendation: Adopt the Resolution.
Result of Recommended Action: Adoption of the Resolution will approve the annual Development Impact Fee Report prepared in accordance with California Government Code Section 66000, et seq. and ensures the City remains in compliance with AB1600 reporting requirements.
Staff Report: Michelle Mingay, Sr. Finance Analyst.
Advances Goals: 5.

15.3 **Subject:** A Resolution Declaring the Results of Mail Ballot Election for Rancho Cordova Transit-Related Services Special Tax Area Zone 25 for the Bradshaw Village Project.
Recommendation: Adopt the Resolution.
Result of Recommended Action: Adoption of the Resolution will declare the result of the mail ballot election concerning Transit-Related Services Special Tax Area Zone 25 establishing a Special Tax for Transit Services for the Bradshaw Village Project.
Staff Report: Elizabeth Sparkman, Community Development Director and Jeanette Cervantes, Management Technician.
Advances Goals: 5.

15.4 **Subject:** Arts Strategic Plan.
Recommendation: Approval of the City of Rancho Cordova Arts Strategic Plan.
Result of Recommended Action: Adoption by resolution of the Arts Strategic Plan provides visionary concepts, programs, projects that help further the City goals to make Rancho Cordova an artful place.
Staff Report: Megan Siren, Senior Management Analyst, and Paul Junker, Senior Project Manager.
Advances Goals: 1 and 2.

15.5 **Subject:** A Resolution Authorizing the City Manager to Execute Contract No. 172-2019 in an Amount not to Exceed $1,500,000 with Salabar Associates, Inc. for On-Call Construction Inspection and Engineering Development Review Services through December 31, 2022.
Recommendation: Adopt the Resolution.
Result of Recommended Action: Adoption of the Resolution will authorize the City Manager to execute Contract No. 172-2019 with Salaber Associates, Inc. in the amount of $1,500,000 for construction inspection and engineering development review services through December 31, 2022.
Staff Report: Albert Stricker, Public Works Director and Marilyn Phelps, Assistant Land Surveyor.
Advances Goals: 1, 2 and 5.

15.6 **Subject:** A Resolution Authorizing the City Manager to Award Construction Contract No. 181-2019 in an Amount not to Exceed $5,502,293.35 with Granite Construction Company for the Folsom Boulevard Streetscape Enhancement Phase V Project.
Recommendation: Adopt the Resolution.
Result of Recommended Action: Adoption of the Resolution will authorize the City Manager to execute Contract No. 181-2019 in an amount not to exceed $5,502,293.35 with Granite Construction Company for the Folsom Blvd Streetscape Enhancement Phase V Project.
Staff Report: Albert Stricker, Public Works Director and Edgar Medina, Senior Civil Engineer.
Advances Goals: 1, 2, and 5.

15.7 **Subject:** A Resolution Authorizing the City Manager to Execute the First Amendment to the Second Restated Grant Agreement Between the City of Rancho Cordova and the Cordova Community Council Foundation.
Recommendation: Adopt the Resolution.
Result of Recommended Action: The City will make funds available to the Cordova Community Council for a three-year grant to provide a professionally managed umbrella organization for Rancho Cordova non-profits that will provide community event support, volunteer management and civic engagement.
Staff Report: Cyrus Abhar, City Manager and Kim Juran-Karageorgiou, Administrative Services Director.
Advances Goals: 1, 2, and 5.

16. CONSENT PUBLIC HEARING ITEMS - ROLL CALL VOTE

Council Member Terry asked that item 16.1 be pulled from the Consent Public Hearing for further discussion.

16.1 **Subject:** Grocery Outlet Tentative Parcel Map, Located at 2801 Zinfandel Drive; Project

No. DD9909.
Recommendation: Adopt the Resolution.
Result of Recommended Action: Adoption of the Resolution would approve the applicant's request to subdivide an existing developed 3.1 +/- acre parcel into two new parcels; Parcel 1 at 0.903 acres and Parcel 2 at 2.19 acres. This lot split would permit for the sale, lease, or finance of individual parcels. No physical improvements are proposed with this request.
Staff Report: June Cowles, Senior Planner.
Advances Goals: 1, 4 and 6.

Mayor Sander opened the public comment period and the following individuals addressed the Council:

1. Javed Siddiqui
2. Dan Mueller

ACTION: Motion to approve by Budge second by McGarvey; Motion passed with a 5:0 vote.

17. PUBLIC HEARING ITEMS

17.1 **Subject:** Rancho Cordova Retirement Residence Conditional Use Permit, Tentative Parcel Map, and Major Design Review Permit; Project No. DD9900.
Recommendation: Determine the project Exempt per Section 15183, consistent with the Community Plan, General Plan, or Zoning of the California Environmental Quality Act (CEQA) Guidelines and adopt the Resolution for Rancho Cordova Retirement Residence Conditional Use Permit, Tentative Parcel Map, and Major Design Review.
Result of Recommended Action: Adoption of the Resolution would approve the Conditional Use Permit, Tentative Parcel Map, and Major Design Review for the construction of the three story 148,258 square foot congregate care facility to include residential garages, outdoor amenity areas, parking, lighting, and landscaping. Approve a tentative parcel map to split one 8.8-acre site into two parcels; Parcel 1=4.28 acres and Parcel 2=5.78 acres. Approval would allow the applicant to pursue necessary building permits for new construction.
Staff Report: June Cowles, Senior Planner.
Advances Goals: 1, 2, 3, 5 and 6.

Senior Planner, June Cowles stated that Exhibit B, Conditions of Approval had a correction.

Mayor Sander opened the public comment period. Seeing no speakers, Mayor Sander closed the public comment period.

ACTION: Motion to approve by Terry second by Budge; Motion passed with a 5:0 vote.

17.2 **Subject:** T-Mobile Antenna Project Conditional Use Permit Amendment; Project No. DD9881 - Located at 10653 Coloma Road.
Recommendation: Staff recommends that the City Council find the project to be in compliance with the California Environmental Quality Act (CEQA) as exempt pursuant to CEQA Guidelines Section 15303 and adopt the Resolution.
Result of Recommended Action: Approval of the Conditional Use Permit Amendment would allow the applicant to increase the existing monopole height by 10 feet with a five-foot antenna extension for a total height increase of 15 feet, the installation of additional

antennas, and an increase ground area of 310 square feet for corresponding ground equipment. The telecommunication facility will provide increased T-Mobile service.
Staff Report: June Cowles, Senior Planner.
Advances Goals: 5 and 6.

Mayor Sander opened the public comment period. Seeing no speakers, Mayor Sander closed the public comment period.

ACTION: Motion to continue public hearing item to date uncertain by Budge second by Terry; Motion passed with the following 4:1 vote:
AYES: Budge, McGarvey, Terry, Sander
NOES: Gatewood

17.3 **Subject:** An Ordinance Amending the Rancho Cordova Municipal Code Related to Title 22 (Land Development), Chapter 22.40 Park and Recreation Dedication and Fees; and Title 23 (Zoning Code), Article 3 Zoning District, Allowable Uses, and General Development Standards, Article 7 Site Planning and Development Standards, and Article 9 Special Use Provisions.
Recommendation: Introduce and waive the first reading of the Ordinance.
Result of Recommended Action: The Ordinance would come back for a second reading and adoption at the next regular City Council meeting. Approval of the Ordinance would amend Title 22 Land Development, Chapter 22.40 Park and Recreation Dedication and Fees; and Title 23 Zoning Code, Article 3 Zoning District, Allowable Uses, and General Development Standards, Article 7, Site Planning and Development Standards, and Article 9 Specific Use Provisions.
Staff Report: Darcy Goulart, Planning Manager.
Advances Goals: 1, 2, 5, and 6.

ACTION: Motion to approve with the removal of Chapter 22.40, Park and Recreational Dedication and fees from the Ordinance to be brought back at a later date by Budge second by Terry; Motion passed with a 5:0 vote.

18. REGULAR CALENDAR ITEMS

18.1 **Subject:** Rancho Cordova Police Department Update on Crime Statistics for 2014-2018.
Recommendation: This report is both for informational purposes and for Council questions and discussion.
Result of Recommended Action: This update is to provide Council with the latest crime statistics for the City of Rancho Cordova and to showcase trends in various types of crime.
Staff Report: Chris Pittman, Chief of Police.
Advances Goals: 1, 2, 3, 5 and 6.

ACTION: Input was received regarding the Rancho Cordova Police Department Update on Crime Statistics for 2014-2018.

18.2 **Subject:** Update on AARP Network Age-Friendly Communities.
Recommendation: Receive update from Staff on the process to joining the AARP Network of Age-Friendly Communities.
Result of Recommended Action: No formal action is requested at this time. Staff will present the AARP Age-Friendly Community program and inform Council on a roadmap to enrolling in the AARP Network of Age-Friendly Communities. Staff will seek Council

input on joining this network.
Staff Report: Stefan Heisler, Reinvestment Analyst.
Advances Goals: 1 and 3.

ACTION: Input was received regarding the Update on AARP Network Age Friendly Communities.

18.3 **Subject:** Rancho Cordova Participation in the Sacramento Homeless Policy Council.
Recommendation: Staff recommends that the City Council endorse the proposed Sacramento Homeless Policy Council and appoint one Council member to participate and serve as a representative on the Sacramento Homeless Policy Council once it is formed.
Result of Recommended Action: One City Council member will be appointed to participate in the Sacramento Homeless Policy Council, which is proposed to hold three meetings per year.
Staff Report: Stefan Heisler, Reinvestment Analyst.
Advances Goals: 2.

ACTION: Motion to appoint Council Member Donald Terry to serve on the Sacramento Homeless Policy Council by Gatewood second by Budge; Motion passed with a 5:0 vote.

18.4 **Subject:** Approval of Council Member Appointments to Regional Boards, Commissions, and Committees.
Recommendation: That Council confirms commitments to serve on other agency boards, commissions, and committees.
Result of Recommended Action: The City Council will continue to serve in leadership roles throughout the region. The City Clerk will notify each agency board, commission, or committees of any changes or reappointments and will ensure that any necessary Fair Political Practices Commission (FPPC) filings are completed.
Staff Report: Stacy Leitner, City Clerk.
Advances Goals: 1, 2 and 5.

ACTION: No action was taken on this item.

19. COUNCIL REQUESTS FOR FUTURE AGENDA ITEMS

None.

20. ADJOURNMENT

Mayor Sander adjourned the meeting at 9:07 p.m.

_____
Stacy Leitner, CMC
City Clerk

MEMORANDUM

DATE: January 6, 2020

TO: Honorable Mayor and Council Members

FROM: Darcy Goulart, Planning Manager

SUBJECT: **SECOND READING OF AN ORDINANCE AMENDING SECTIONS OF THE RANCHO CORDOVA MUNICIPAL CODE RELATED TO TITLE 23 ZONING CODE, ARTICLE 3 ZONING DISTRICT, ALLOWABLE USES, AND GENERAL DEVELOPMENT STANDARDS, ARTICLE 7, SITE PLANNING AND DEVELOPMENT STANDARDS, AND ARTICLE 9 SPECIFIC USE PROVISIONS**

RECOMMENDATION

Waive the second reading and adopt the Ordinance.

RESULT OF RECOMMENDED ACTION

Approval of the Ordinance would amend Title 23 Zoning Code, Article 3 Zoning District, Allowable Uses, and General Development Standards, Article 7, Site Planning and Development Standards, and Article 9 Specific Use Provisions of the Rancho Cordova Municipal Code.

BACKGROUND

On December 16, 2019 the City Council waived the first reading and passed to a second reading for an Ordinance amending Title 23 Zoning Code, Article 3 Zoning District, Allowable Uses, and General Development Standards, Article 7, Site Planning and Development Standards, and Article 9 Specific use Provisions.

FISCAL IMPACT AND FUNDING SOURCE

There is no anticipated fiscal impact of the proposed action on City finances.

ATTACHMENT(S)

1. Attachment 1 - Ordinance
2. Attachment 2 - Exhibit A to Ordinnace XX-2020

CITY OF RANCHO CORDOVA

ORDINANCE NO. XX-2020

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF RANCHO CORDOVA, STATE OF CALIFORNIA, AMENDING TITLE 23 (ZONING CODE), ARTICLE 3 ZONING DISTRICT, ALLOWABLE USES, AND GENERAL DEVELOPMENT STANDARDS, ARTICLE 7 SITE PLANNING AND DEVELOPMENT STANDARDS, AND ARTICLE 9 SPECIAL USE PROVISIONS OF THE RANCHO CORDOVA MUNICIPAL CODE

THE CITY COUNCIL OF THE CITY OF RANCHO CORDOVA DOES ORDAIN AS FOLLOWS:

Section 1. Purpose and Declarations.

WHEREAS, the City conducts periodic updates of the provisions of the Municipal Code to ensure compliance with current laws, changes in local policy, consistency with adopted plans and programs, clarify ambiguities, address changing market conditions, reflect best practices, and to address issues or concerns with current regulations; and

WHEREAS, certain amendments to the Title 23 (Zoning), Articles 3, 7, and 9 are necessary to reflect best management practices, eliminate ambiguities in the code and address changes in State law; and

WHEREAS, on December 16, 2019 the City Council held a properly noticed public hearing for this Ordinance and considered all oral and written testimony.

Section 2: Findings. The City Council hereby finds:

A. **CEQA Compliance.** CEQA requires analysis of agency approvals of discretionary "projects." A "project," under CEQA, is defined as "the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment." (CEQA Guidelines, § 15378.) As reflected at State CEQA Guideline 15061 (b) (3), an activity is not subject to CEQA, "[where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment…" The proposed are not a "project" within the meaning of CEQA because the amendments seek to regulate specifics that are already present in the City and no significant expansion these activities can reasonably be anticipated to occur. Because no expansion of uses or activities is reasonably anticipated, no possibility exists that the ordinance will result in a significant effect on the environment. Thus, the proposed ordinance is not subject to the requirements of CEQA. However, in the event that adoption of the ordinance is considered a CEQA project, it would nonetheless qualify for categorical exemptions as set forth below.

CEQA Guidelines Section 15061(b)(3) states that a project is exempt from CEQA "where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment." The approval of the code amendments set forth in the proposed ordinance does not approve any physical development project, and it would not result in a direct or indirect physical changes in the environment. The proposed changes are merely to reflect best management practices, eliminate ambiguities in the code and address changes in State law. Any specific development projects that may result from these changes will be subject to environmental review. The proposed amendments are consistent with the City's General Plan. For these reasons, the proposed amendments would not have the potential to result in individually or

cumulatively significant effects on the environment and these Municipal Code amendments are exempt from review under CEQA and no further environmental review is necessary.

B. **The proposed amendment is consistent with the General Plan.** The attached Municipal Code Amendments ("Amendment") are consistent with the General Plan. The amendments would clarify definitions, eliminate ambiguities in the code and address changes in state law. The amendments would not have any conflicts with existing General Plan goals and policies.

C. **The proposed amendment would not be detrimental to the public interest, health, safety, convenience, or welfare of the City.** The attached amendment is focused on reflecting best practices and compliance with State law. None of these proposed amendments will be detrimental to the public interest, health, safety, convenience, or welfare of the City as they reflect best practices, clear up ambiguities, reflect new State law.

D. **The proposed amendments are internally consistent with other applicable provisions of this zoning code.** The Amendments have been reviewed for consistency with the entirety of the Municipal Code and is consistent with other applicable provisions of the Municipal Code.

Section 3. Amendments to Title 23 Zoning

The City Council hereby adopts the amendments to Article 3, Article 7, and Article 9 of Title 23 of the Rancho Cordova Municipal Code (Zoning), as shown and incorporated in **Exhibit A** to this ordinance.

Section 4. Severability

If any provision of this Ordinance or the application thereof to any person or circumstance, is held invalid, the remainder of the Ordinance, including the application of such part or provision to other persons or circumstances shall not be affected thereby and shall continue in full force and effect. To this end, provisions of this Ordinance are severable. The City Council hereby declares that it would have passed each section, subsection, subdivision, paragraph, sentence, clause or phrase hereof irrespective of the fact that any one or more sections, subsections, subdivisions, paragraphs, sentences, clauses, or phrases be held unconstitutional, invalid or unenforceable.

Section 5. Effective Date

Within fifteen (15) days after adoption, a Summary of this Ordinance shall be published once in the Grapevine Independent, or the Sacramento Bee, a newspaper of general circulation printed and published in Sacramento County and circulated in the City of Rancho Cordova, in accordance with Government Code Section 36933. This Ordinance shall take effect and be enforced thirty (30) days after its inception.

PASSED AND ADOPTED by the City Council of the City of Rancho Cordova on the 6th day of January, 2020 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

_____
David M. Sander, Mayor

ATTEST:

_____
Stacy Leitner, CMC
City Clerk

Rancho Cordova

Municipal Code Amendments

Note to Reader: Section placeholders to indicate the sections between changed subsections remain the same are indicated with three stars (***).

Title 23 Zoning

Article 3

Chapter 23.310
RESIDENTIAL ZONING DISTRICTS

***

Table 23.310-1: Allowed Uses and Permit Requirements for Residential Zoning Districts

Land Use Category	RR	ER	RD-1	RD-2	RD-3	RD-4	RD-5	RD-6	RD-7	RD-10	RD-15	RD-20	RD-25	RD-30	MDR	HDR	RMH	Specific Use Regulations
Residential Uses																		
Adult Day Care Home	P	P	P	P	P	P	P	P	P	P	P	N	N	N	N	N	N	
Caretaker Housing	AUP	AUP	AUP	AUP	AUP	AUP	AUP	AUP	AUP	AUP	AUP	AUP	AUP	AUP	AUP	AUP	AUP	RCMC 23.901.020
Dwelling, Multifamily[9]	N	N	N	N	N	N	N	N	N	P	P	P	P	P	P	P	N	
Dwelling, Accessory Unit	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	RCMC 23.901.060
Dwelling, Single-Family	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	N	P	
Dwelling, Two-Family	N	N	N	N	N	AUP[1]	AUP[1]	AUP[1]	AUP[1]	P	P	P	P	P	P	N	N	
Emergency Shelter	N	N	N	N	N	N	N	N	C	C	C	C	C	C	C	C	C	
Employee Housing	AUP	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Family Day Care Home, Small or Large	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
Group Residential	C	C	N	N	N	N	N	N	N	C	P	P	P	P	P	P	N	
Guest House	P	P	P	P	P	P	P	P	P	P	P	N	N	N	P	N	N	
Home Occupations	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	RCMC 23.901.030
Live-Work Facility	N	N	N	N	N	N	AUP	AUP	AUP	P	P	P	P	P	P	P	N	RCMC 23.901.040
Manufactured Home	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
Mobile Home	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	P	RCMC 23.901.050

***

Notes:

***

***

Chapter 23.313

MIXED USE ZONING DISTRICTS

***

Table 23.313-1: Allowed Use and Permit Requirements for Mixed-Use Districts

Land Use Category	RMU	CMU	OPMU	OIMU	LIBP	VC	LTC	RTC	Specific Use Regulations
Industrial, Manufacturing, and Processing Uses									
Agricultural Products Processing	N	N	N	N	C	N	N	N	
Artisanal and Specialty Manufacture, Display, and Sales	N	P	P	P	P	P	P	P	
Brewery, Winery, Distillery	N	P[29]	P[29]	P[29]	P[29]	P[29]	P[29]	P[29]	
Manufacturing, Major	N	N	N	N	C[14]	N	N	N	
Manufacturing, Minor	N	N	N	P	P	N	N	N	
Manufacturing, Small Scale	N	P	P	P	P	P	N	N	
Printing and Publishing	N	C	C	P	P	N	N	N	
Recycling Facility, Processing	N	N	N	N	C	N	N	N	
Recycling Facility, Scrap and Dismantling Facility	N	N	N	N	C	N	N	N	
Research and Development	N	N	P	P	P	N	N	N	
Storage, Personal Storage Facility	N	N	N	C[27]	P[27]	N	N	N	Chapter 23.915 RCMC
Storage, Warehouse	N	N	N	P	P	N	N	N	
Storage, Yards	N	N	N	P[14]	P[14]	N	N	N	Chapter 23.728 RCMC
Wholesaling and Distribution	N	N	N	P[14]	P[14]	N	N	N	

Notes:

***

14. All activity must be entirely screened from public view and not within 500 feet of a residential use. The 500-foot separation from residential uses may be waived if the storage yard adheres to the standards in 23.728.030C.1.

***

Note to Reader: Section placeholders to indicate the sections between changed subsections remain the same are indicated with three stars (***).

Title 23 Zoning

Article 7

Chapter 23.728

OUTDOOR DISPLAY, SALES AND STORAGE

***

23.728.030 Development standards.

***

C. Standards for Outdoor Storage. The following development standards shall apply to all permanent and temporary outdoor storage activities:

1. Location. Outdoor storage may not be located within any required front or street side yard for the underlying zoning district within which the activity is located.

a. Outdoor storage yards may be located within 500 feet of residential uses if the storage area is designed in a manner that cannot be seen from any portion of the residential use, including multi-story buildings. This can be achieved by utilizing a combination of solid screening materials, mature or fast-growing landscaping and building placement. Compliance will be verified through a zoning certification for existing development or a design review for new developments.

2. Height Limitation. The height of stacked materials and goods shall be no greater than that of any building, wall, fence, or gate enclosing the storage area. For additional height limitations for recycling and junk tire facilities, see RCMC 23.916.020 (Junk tire facility). For additional height limitations for automotive dismantling, see RCMC 23.913.020 (Automobile dismantling).

3. Screening. Screening of outdoor storage shall be consistent with RCMC 23.731.080(A)(7) (Outdoor Equipment, Storage, and Work Areas).

4. Cargo Shipping Containers. Cargo shipping containers may be utilized for outdoor storage of goods and materials in all zoning districts, except agricultural and residential zoning districts, and subject to the development standards of this chapter. [Ord. 4-2018 § 3 (Exh. A); Ord. 4-2017 § 3 (Exh. B); Ord. 12-2011 § 3 (Exh. A); Ord. 27-2008 § 1 (Exh. A § 4.10.030)].

Chapter 23.731

FENCES, WALLS, AND SCREENING

***

23.731.070 Prohibited materials.
The following fence materials are prohibited in all zones unless approved by the designated approval authority for security needs or required by the city or state or federal law or regulation or as specified below:

A. Barbed wire or electrified fence.

B. Razor or concertina wire in conjunction with a fence or wall, or by itself.

C. Chain link fencing may be used internally for commercial and industrial zoned properties if it cannot be seen from adjacent residentially zoned properties or the public right of way.

[Ord. 4-2017 § 3 (Exh. B); Ord. 13-2013 § 4 (Exh. B); Ord. 12-2011 § 3 (Exh. A); Ord. 27-2008 § 1 (Exh. A § 4.11.070)].

***

Title 23 Zoning
Article 9

Chapter 23.901

RESIDENTIAL USES

***

23.901.080 Family day care (large) has been deleted

***

MEMORANDUM

DATE: January 6, 2020

TO: Honorable Mayor and Council Members

FROM: Stacy Leitner, City Clerk and Senior Executive Assistant

SUBJECT: **APPROVAL OF COUNCIL MEMBER APPOINTMENTS TO REGIONAL BOARDS, COMMISSIONS, AND COMMITTEES**

RECOMMENDATION

That Council confirms commitments to serve on other agency boards, commissions, and committees.

RESULT OF RECOMMENDED ACTION

The City Council will continue to serve in leadership roles throughout the region. The City Clerk will notify each agency board, commission, or committees of any changes or reappointments and will ensure that any necessary Fair Political Practices Commission (FPPC) filings are completed.

BACKGROUND

Council Members serve on various advisory boards in the community to ensure that the City has representation within the region. By confirming their appointments annually, the members of the Council are committing their time to serve in these important leadership roles.

FISCAL IMPACT AND FUNDING SOURCE

There is no Fiscal Impact.

ATTACHMENT(S)

1. 2020 Proposed City of Rancho Cordova Council Member Appointments to Regional Boards, Commissions, and Committees

2020 Proposed - City of Rancho Cordova
Council Member Appointments to Regional Agency Boards, Commissions and Committees

Agency	2019 Appointment	2020 Proposed
Local Appointments		
Sacramento Homeless Policy Council		Terry
Capital SouthEast Connector Joint Powers Authority	Sander Alt: Budge	Sander Alt: Budge
Lower American River Conservancy Program Advisory Committee	Terry Alt. Gatewood	Terry Alt. Gatewood
Folsom Lake College/Rancho Cordova Promise Advisory Board	Terry and Abhar	Terry and Abhar
City Selection Committee of Sacramento County	Mayor	Mayor (or Council Member designee)
Greater Sacramento Economic Council	Sander Alt: Abhar	Sander Alt: Abhar
Folsom Lake College Foundation Board	Abhar/McGarvey	Abhar/McGarvey
Sacramento Area Council of Governments (SACOG)/Capitol Valley Regional SAFE	Sander Alt: Budge	Sander Alt: Budge
Sacramento Area Sewer District (Meets with Regional Sanitation District)	McGarvey Alt: Gatewood	McGarvey Alt: Gatewood
Sacramento Regional Sanitation District (Meets with Sacramento Area Sewer District)	McGarvey Alt: Gatewood	McGarvey Alt: Gatewood
Sacramento County Criminal Justice Cabinet	Mayor	Mayor (or designee)
Sacramento Local Agency Formation Commission (LAFCo)	Linda Budge (Alternate Commissioner 1/1/19-12/31/20) Commissioner 1/1/21-12/31/22	Linda Budge (Alternate Commissioner 1/1/19-12/31/20) Commissioner 1/1/21-12/31/23
Sacramento Metro Cable Television Commission	Gatewood Alt: McGarvey	Gatewood Alt: McGarvey
Sacramento Metropolitan Air Quality Management District (SMAQMD)	Terry Alt: McGarvey	Terry Alt: McGarvey
Sacramento Placerville Transportation Corridor Joint Powers Authority	Sander Alt: Budge	Sander Alt: Budge
Sacramento Public Library Authority Governing Board	Gatewood Alt: Budge	Gatewood Alt: Budge
Sacramento Regional Transit (RT) District Board of Directors	Budge Alt: Sander	Budge Alt: Sander
Sacramento Transportation Authority (STA)	Gatewood Alt: Terry	Gatewood Alt: Terry
Sacramento-Yolo Mosquito & Vector Control District Board	McGarvey Alt: Sander	McGarvey Alt: Sander
South Sacramento Habitat Conservation Plan (SSHCP) Elected Advisory Board	Budge/Gatewood Alt: Terry/McGarvey	Budge/Gatewood Alt: Terry/McGarvey
2 x 2 Meetings		
Cordova Recreation and Park District 2x2	Not Active	Not Active
Elk Grove Unified School District 2x2	Gatewood, Terry	Gatewood, Terry
Folsom Cordova Unified School District 2x2	Sander, Terry	Sander, Terry
Golden State Water 2x2	McGarvey, Sander	Sander, Gatewood
Sac Metro Fire 2x2	McGarvey, Budge	McGarvey, Budge
Sacramento City Unified School District 2x2	Gatewood, Terry	Gatewood, Terry
Sacramento County 2x2	McGarvey, Sander	Sander, Gatewood
SMUD 2x2	McGarvey, Sander	Sander, Gatewood

MEMORANDUM

DATE: January 6, 2020

TO: Honorable Mayor and Council Members

FROM: Nick Sosa, Associate Planner

SUBJECT: **JONATHAN HSU DENTAL OFFICE CONDITIONAL USE PERMIT (CUP); PROJECT NO. DD9914 - A CUP FOR A DENTAL OFFICE LOCATED AT 11121 SUN CENTER DRIVE, SUITE E WITHIN THE CITY'S CONVENTION OVERLAY ZONING DISTRICT**

RECOMMENDATION

Determine the project Exempt per Categorical Exemption Section 15301, Existing Facilities, and adopt the Resolution for a Conditional Use Permit.

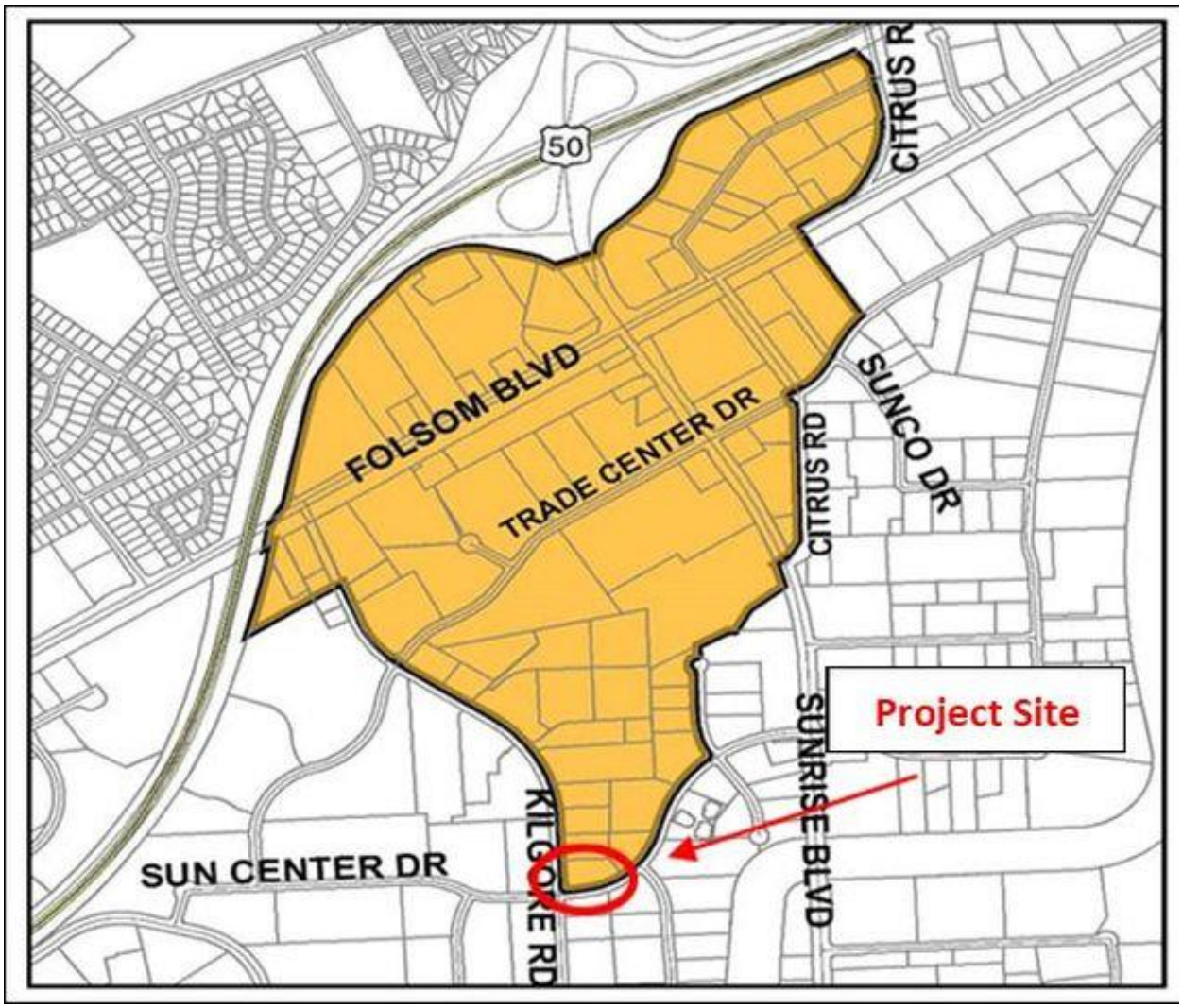
RESULT OF RECOMMENDED ACTION

Adoption of the Resolution would approve the Conditional Use Permit for a Dental Office to be located at 11121 Sun Center Drive, Suite E within the Convention Overlay District. The Applicant will be able to move forward with a business license as well as building permits for interior modifications.

BACKGROUND

The project site is located within Rancho Cordova's Convention Overlay (CO) zoning district. The intention of the CO is to establish an area in the city specifically for the development of a convention center with related and supporting uses. It is intended to be a special place in the city that is entertaining, vibrant, and inviting to tourists, visitors, and residents alike. The area of the CO is generally defined as the area south of Highway 50, east of Kilgore Road, north of Sun Center Drive, and west of Citrus Road. **See Figure 1**.

Figure 1: Convention Overlay Map



PROJECT DESCRIPTION
The project site is located on Sun Center Drive, at the edge of the Convention Overlay District (**See Figure 1**). As required by Chapter 23.325 of the Rancho Cordova Municipal Code, a Medical Services, General use requires a Conditional Use Permit within the overlay.

ANALYSIS

Zoning
The project site is zoned Office Professional Mixed Use (OPMU). However, this property is located within the Convention Overlay zoning district. The Convention Overlay zoning district provides a specific allowed land use table which dictates what uses are allowed within the overlay area. Where there is conflict between this overlay district and the underlying zoning district, the overlay district regulations prevail. Therefore, the use of a dental office within the overlay district, requires a Conditional Use Permit.

General Plan
This location is within the Office Mixed Use (OMU) designation of the General Plan. The OMU designation encourages the integration of commercial and/or residential use in conjunction with office use of a site. In any case, office uses are the predominant use. The applicant is requesting approval for a dental office with this application, which is consistent with other businesses in the area as the intentions of the OMU general plan designation.

CONDITIONAL USE PERMIT REVIEW:

Although the intention of the convention overlay is to promote the development of a convention center as well as relative and supportive uses, the use of this space as a dental office is consistent with other businesses in adjacent suites within the same building. Active business licenses in neighboring suites include marriage and family therapy services, online neuromonitoring services, web design services, and web hosting and management services. The addition of a dental office at this location will not limit the ability of the Convention Overlay fulfill its intentions.

Figure 2: Site Plan

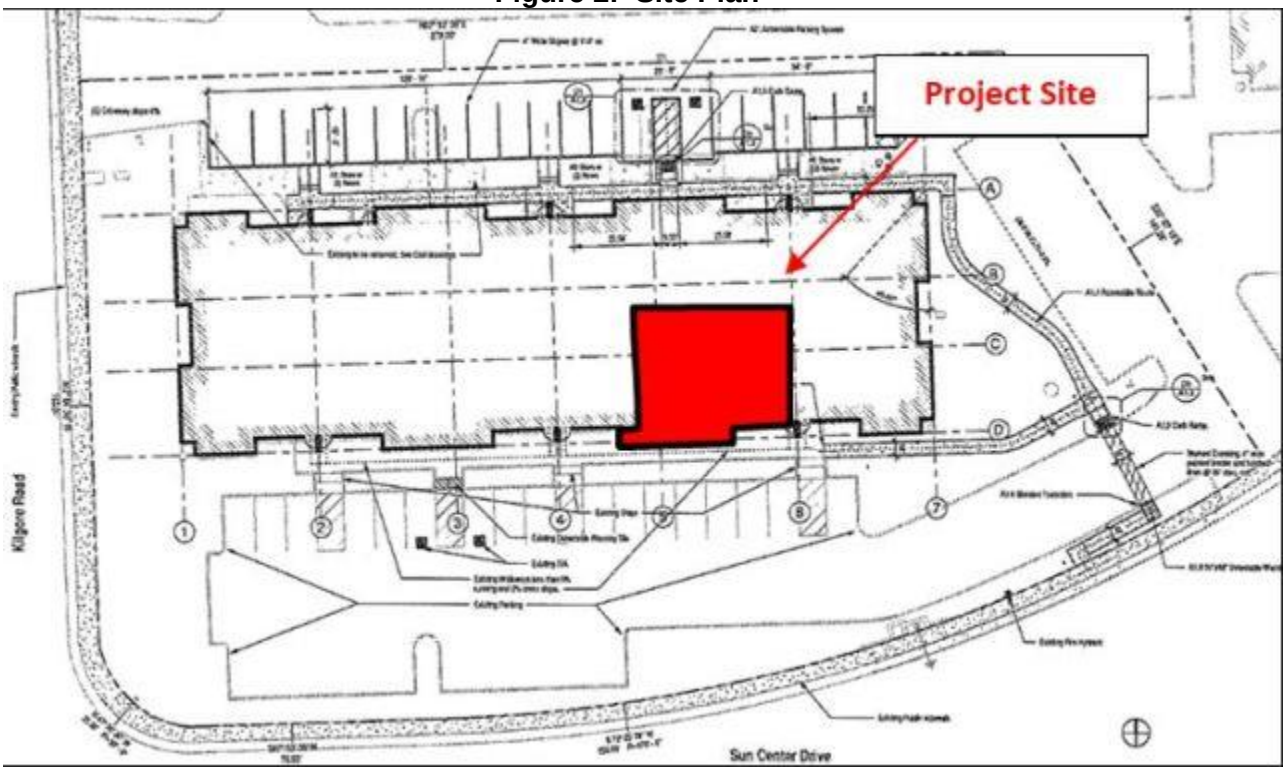
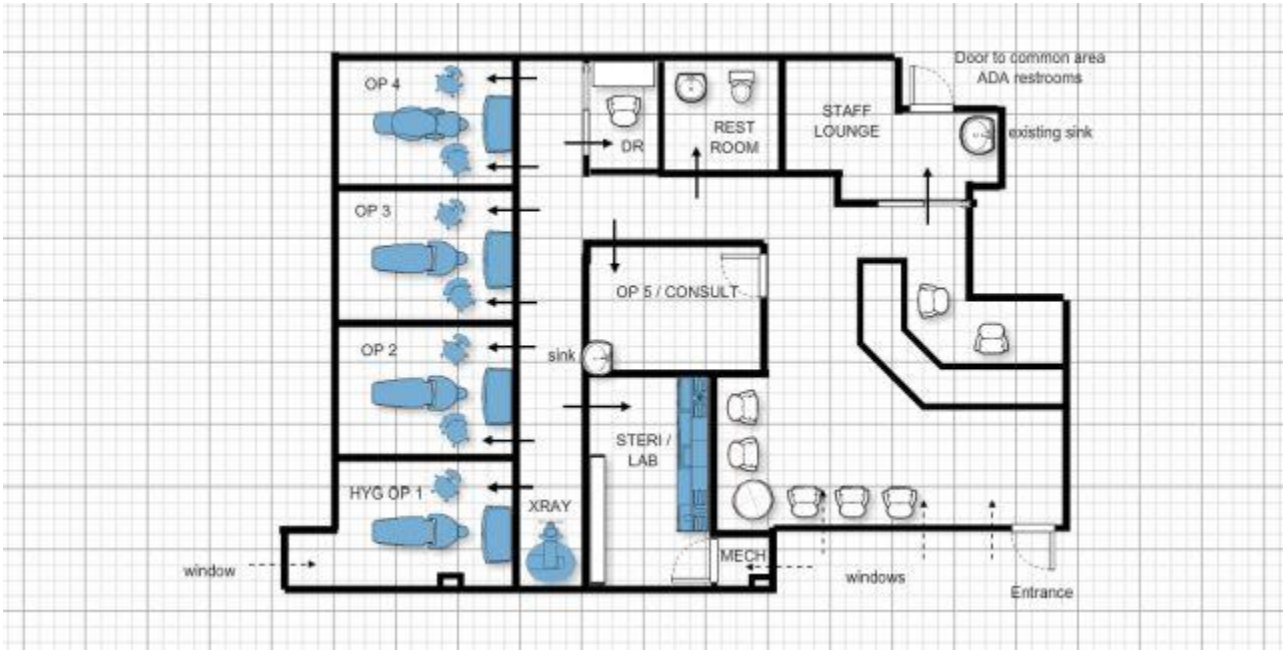


Figure 3: Floor Plan



Conditional Use Permit Findings:
The Conditional Use Permit, as conditioned, adheres to the approval findings defined by Zoning Code section 23.134.030 as follows:

A.Finding: The site size, dimensions, location, topography, and access are adequate for the needs of the proposed use, considering the proposed building mass, parking, traffic, noise, vibration, exhaust/ emissions, light, glare, erosion, odor, dust, visibility, safety, and aesthetic considerations.

Evidence: The subject site is located at 11121 Sun Center Drive, Suite E. This location is within an existing office building which provides all the necessary accommodations for a medical services, general use. Neighboring suites within the same building also include office uses and therefore, the proposed use would be compatible with other adjacent businesses.

B.Finding: The negative impacts of the proposed use on adjacent properties and on the public can be mitigated through application of other code standards or other reasonable conditions of approval.

Evidence: Staff does not anticipate any negative impacts for the proposed dentist office use at this location. The site provides adequate parking and access for a medical services, general use and is compatible with neighboring uses. Any unforeseen impacts can be mitigated through application of other code standards or conditions of approval.

C.Finding: All required public facilities have adequate capacity to serve the proposal.

Evidence: The proposed dental office does not require any additional public facilities in order to be at this location. The existing building and suite have adequate vehicle and pedestrian access and the use will not generate a large number of traffic to the project site.

D.Finding: The project meets the requirements of the zoning code including development standards, design guidelines, and special use provisions.

Evidence: The use will be within an existing office building amongst other office uses. The building meets development standards and design guidelines for the Convention Overlay District and the project does not require any modifications to the exterior of the building.

E.Finding: If structures and site plans are considered nonconforming, the elements of a project that are nonconforming have been brought into compliance with the zoning code, where feasible

Evidence: At this time there are no items that are considered non-conforming at this location. All elements of the project are in compliance with the Zoning Code and Convention Overlay District.

ENVIRONMENTAL

The project is exempt from California Environmental Quality Act (CEQA) pursuant Section 15301, Existing Facilities. The project consists of a dental office leasing a space within an existing building and no exterior modifications are proposed at this location. A description of the evidence for the exemption is found in the findings included in Attachment 1**.**

FISCAL IMPACT AND FUNDING SOURCE

There is no fiscal impact.

ATTACHMENT(S)

1. Resolution
2. Attachment 2 - Exhibit A to the Resolution Project Plans
3. Attachment 3 - 500' Radius Map & Mailing Labels

CITY OF RANCHO CORDOVA

RESOLUTION NO. XX-2020

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF RANCHO CORDOVA, STATE OF CALIFORNIA, APPROVING A CONDITIONAL USE PERMIT FOR JONATHAN HSU DENTAL OFFICE PROJECT NO. DD9914

WHEREAS, Jonathan Hsu (hereinafter referred to as Applicant) filed an application with the City of Rancho Cordova for a Conditional Use Permit approval for a dental office at 11121 Sun Center Drive, Suite E within a Office Professional Mixed Use (OMPU) zoning designation within the Convention Overlay District (CO); and

WHEREAS, a dental office is included in the medical services, general use category and requires a Conditional Use Permit in order to be permitted within the Convention Overlay District; and

WHEREAS, the dental office would not result in any significant effects to the environment and therefore was determined to be Exempt per California Environmental Quality Act Section 15301; and

WHEREAS, the City Council is the appropriate authority to hear and take action on this project; and

WHEREAS, the City Council of the City of Rancho Cordova has conducted a properly noticed public hearing pursuant to Government Code section 65090 and has duly considered all written and verbal testimony presented during the hearing.

NOW, THEREFORE, BE IT HEREBY RESOLVED THE CITY COUNCIL OF THE CITY OF RANCHO CORDOVA HEREBY RESOLVES AS FOLLOWS:

1.The CEQA exemption found in California Code of Regulation Title 14, section 15301 (Existing Facilities) is an adequate exemption according to the Guidelines of the California Environmental Quality Act.

A.**Finding:** The project has been analyzed and has been deemed exempt per California Environmental Quality Act (CEQA) Guidelines Section 15301, Existing Facilities.

Evidence: The applicant is proposing to lease a space within an existing building for a dental office at 11121 Sun Center Drive, Suite E. There are no proposed exterior modifications to the building and no significant impact to any environmental resources.

2.Approve the Conditional Use Permit subject to the Project Plans (Exhibit A), the following Conditions of Approval and subject to the findings as defined by Zoning Code section 23.134.070 and evidence as follows:

1. The Applicant shall obtain the necessary business license and building permits for any interior modifications to the building
2. The Applicant shall hold harmless the City, its Council Members, officers, agents, employees, and representatives from liability for any award, damages, costs and fees incurred by the City and/or awarded to any plaintiff in an action challenging the validity of this permit or any environmental or other documentation related to approval of this permit. Applicant further agrees to provide a defense for the City in any such action.
3. This permit is valid for a period of three (3) years from the date of City Council approval unless an extension is granted by the Community Development Director.

A. **Finding:** The site size, dimensions, location, topography, and access are adequate for the needs of the proposed use, considering the proposed building mass, parking, traffic, noise, vibration, exhaust/ emissions, light, glare, erosion, odor, dust, visibility, safety, and aesthetic considerations.

Evidence: The subject site is located at 11121 Sun Center Drive, Suite E. This location is within an existing office building which provides all the necessary accommodations for a medical services, general use. Neighboring suites within the same building also include office uses and therefore, the proposed use would be compatible with other adjacent businesses.

B. Finding: The negative impacts of the proposed use on adjacent properties and on the public can be mitigated through application of other code standards or other reasonable conditions of approval.

Evidence: Staff does not anticipate any negative impacts for the proposed dentist office use at this location. The site provides adequate parking and access for a medical services, general use and is compatible with neighboring uses. Any unforeseen impacts can be mitigated through application of other code standards or conditions of approval.

C. Finding: All required public facilities have adequate capacity to serve the proposal.

Evidence: The proposed dental office does not require any additional public facilities in order to be at this location. The existing building and suite have adequate vehicle and pedestrian access and the use will not generate a large number of traffic to the project site.

D. Finding: The project meets the requirements of the zoning code including development standards, design guidelines, and special use provisions.

Evidence: The use will be within an existing office building amongst other office uses. The building meets development standards and design guidelines for the Convention Overlay District and the project does not require any modifications to the exterior of the building.

E..**Finding:** If structures and site plans are considered nonconforming, the elements of a project that are nonconforming have been brought into compliance with the zoning code, where feasible

Evidence: At this time there are no items that are considered non-conforming at this location.

All elements of the project are in compliance with the Zoning Code and Convention Overlay District.

PASSED AND ADOPTED by the City Council of the City of Rancho Cordova on the 6th day of January 2020 by the following vote:

AYES:

NOES:

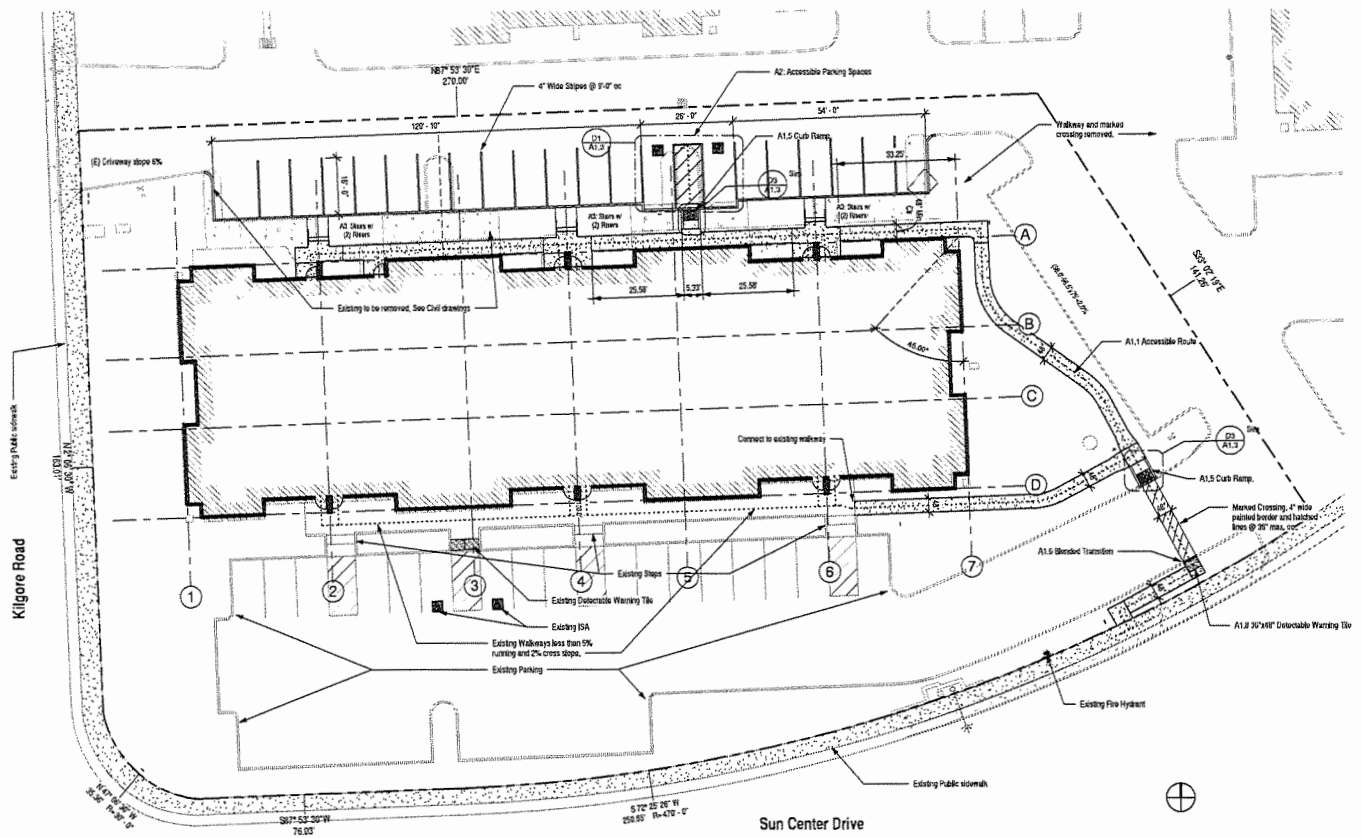
ASSENT:

ABSTAIN:

ATTEST:

David M. Sander, Mayor

Stacy Leitner, CMC
City Clerk



Site Plan

A1 — 1/16" = 1'-0"

Scope of Work

Sub-Category	Scope of Work
A: Site	
A1: Accessible Route-Exterior	
A1.1: Routes Provided	Currently no access is provided from the public way to the building. The project includes the construction a new walkway (modifying the landscape berm as required) and striping the parking lot for a marked crossing
A1.2 Walkways	The existing walkway at the front of building (facing Sun Center are to remain). The existing walkways at the rear of the building exceed the maximum 2% cross slope and 5% running slope; therefore all existing walkways at the rear are to be removed. The project includes the construction of new walkways, including a walkway to connect the front and the back of the building and an accessible route to the public way. Install new directional signage per plans.
A1.5: Curb Ramps	Three new curb ramps are proposed.
A1.6 Blended Transitions	A new blended transition will occur where the new walkway to the public way is being constructed. Install detectable as required.
A1.8: Detectable Warning	New detectable warning is to be installed where shown.
A2: Parking	
A2.1: Parking Scoping	Two new parking spaces are at the rear of the building are to be designated for accessible parking.
A2.2: Parking Spaces	The existing landscape islands are to be removed, new curbs installed, new asphalt as required, and new striping installed.
A2.3: Unauthorized Sign	Install new sign(s) where indicated on plans.
A2.4: Passenger drop-off and loading zones	Not applicable for this site.
A3: Stairs-Exterior	
A3.1: Stairs-Exterior	Construct 3 new stairs.
A3.2: Handrails Stairs-Exterior	Provide and install new railings at stairs.

General Notes

A. All work shall comply with standards of the latest adopted codes and ordinances including the 2019 California Building Code (CBC), Cal. Mechanical Code (CMC), Cal. Plumbing Code (CPC), Cal. Electrical Code (CEC), Cal. Fire Code (CFC), Cal Green Building Code (CGBC), and the Cal Energy Code (CEC).

B. Information contained within these drawings and specifications shall not be construed to permit work not conforming to the referenced codes.

C. The contractor shall examine the documents and the site and notify the owner or the architect in writing of any discrepancies during the course of the construction.

D. The Contractor agrees that he shall assume sole and complete responsibility for job site conditions during the course of construction of this project, including safety of all persons and property, including all hours not just business hours. The Contractor shall defend, indemnify and hold the Owner, Architect, and Engineer harmless from any and all liability, real or alleged, in connection with the performance of work on this Project.

E. The contractor shall provide temporary braces, shoring and guys required to support all loads to which the site and building components, adjacent soils and structures, utilities and right-of-ways which may be subject to during construction.

F. The Contractor shall be responsible for locating all underground utilities. All damage shall be repaired at the contractor's expense.

G. All dimensions are to face of structural components (stud, concrete, or masonry) unless noted otherwise. Field verify all dimensions prior to proceeding with the work.

H. The contractor is responsible for verifying all shop drawings (including truss drawings) to ensure accuracy and coordinate with the all other building components.

J. Items marked "NIC" are not included in the contract. These items are shown in the documents for coordinating the installation of utilities to the locations required by these items.

K. Drawings are not to be scaled.

Removed

Drawing List

Sheet Number	Sheet Name	Current Revision
1-Architectural		
A1.1	Cover Sheet & Site Plan	1
A1.2	Walkway Plan and Sections	
A1.3	Site - Signage/Pavement Markings	
2-Civil		
C1	Cover Sheet	
C2	General Notes	
C3	Detail Sheet	
C5	Grading Plan	

This document contains information proprietary to LRS...Architecture and is furnished in confidence as an instrument of service for the limited purpose of the construction of a specific project. This document and its contents may not be reproduced or disclosed to others without the prior written consent of LRS...Architecture. All rights reserved. Copyright. This drawing is a set final or be used for construction until it is signed by the Architect.

LRS...Architecture
Certified Access Specialists (CASp)
(916) 995-1793 email: OFFICE@LRSARCHITECTURE.COM

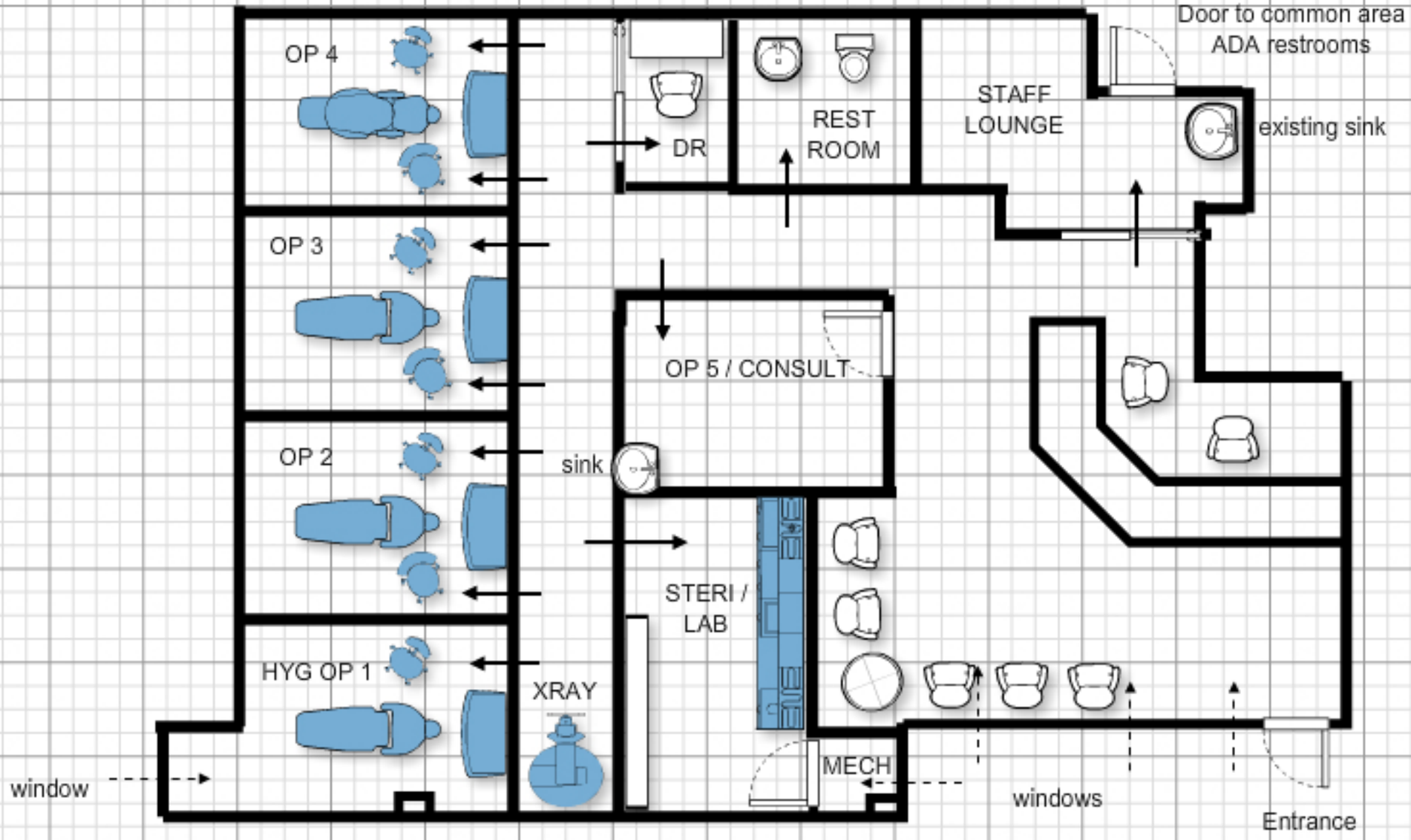
No. C15128
Rev: 08-31-19

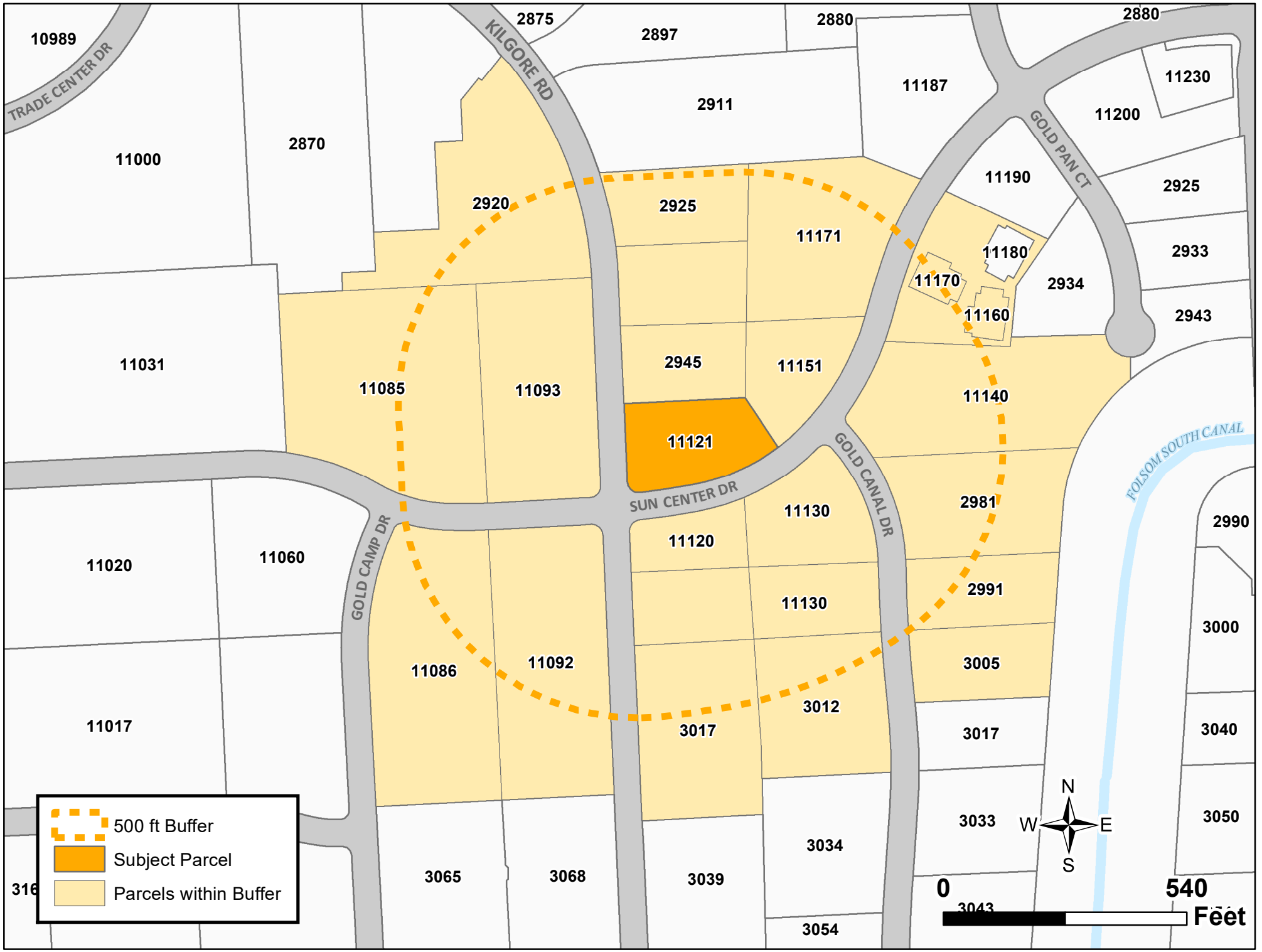
Project Information:
11121 Sun Center Accessibility Improvements
11121 Sun Center, Rancho Cordova, CA 95670 — APN: 072-0450-004

Project Number: 18A02
Drawn by: lrs...
Date: 3/20/2019
Revisions: 1 04-11-2019 PCCorrections 1

Set: Plan Check
Sheet Title: Cover Sheet & Site Plan

Sheet Number: A1.1


OP 4
OP 3
OP 2
HYG OP 1
DR
REST ROOM
STAFF LOUNGE
Door to common area
ADA restrooms
existing sink
OP 5 / CONSULT
sink
STERI / LAB
XRAY
MECH
window
windows
Entrance


TRADE CENTER DR
KILGORE RD
GOLD PAN CT
SUN CENTER DR
GOLD CAMP DR
GOLD CANAL DR
FOLSOM SOUTH CANAL
10989
11000
2870
2875
2897
2880
2911
11187
11230
11200
11190
2925
2933
2934
2943
11180
11170
11160
11171
2920
2925
11031
11085
11093
2945
11151
11140
11121
11020
11060
11130
2981
2990
11120
11130
2991
3000
11086
11092
3005
3012
11017
3017
3017
3040
3033
3050
3034
3065
3068
3039
3054
3043
316
500 ft Buffer
Subject Parcel
Parcels within Buffer
N
W
E
S
0
540
Feet

BOYD STATE RANCHO CORDOVA LLC
1 N WACKER DR STE 4025
CHICAGO IL 60606

PAVILIONS SOUTH LLC
1007 22ND ST
SACRAMENTO CA 95816

SACRAMENTO METROPOLITAN FIRE DISTRICT
10545 ARMSTRONG AVE STE 200
MATHER CA 95655

CURRENT OCCUPANT
11085 SUN CENTER DR
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11086 SUN CENTER DR
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11092 SUN CENTER DR
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11093 SUN CENTER DR
RANCHO CORDOVA CA 95670

GBR PROPS LLC
1111 EXPOSITION BLVD 600
SACRAMENTO CA 95815

GBR PROPS LLC
1111 EXPOSITION BLVD 600
SACRAMENTO CA 95815

CURRENT OCCUPANT
11120 SUN CENTER DR
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11121 SUN CENTER DR
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11121 SUN CENTER DR STE A
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11121 SUN CENTER DR STE D
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11121 SUN CENTER DR STE E
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11121 SUN CENTER DR STE G
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11121 SUN CENTER DR STE I
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11121 SUN CENTER DR STE L
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11121 SUN CENTER DR STE M
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11130 SUN CENTER DR
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11130 SUN CENTER DR
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11140 SUN CENTER DR
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11151 SUN CENTER DR
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11151 SUN CENTER DR STE A
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11151 SUN CENTER DR STE B
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11151 SUN CENTER DR STE C
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11151 SUN CENTER DR STE D
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11151 SUN CENTER DR STE E
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11151 SUN CENTER DR STE F
RANCHO CORDOVA CA 95670

SCOTT SHAW PROPERTIES LLC
11160 SUN CENTER DR
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11170 SUN CENTER DR
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11170 SUN CENTER DR # 100
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11170 SUN CENTER DR # 200
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11170 SUN CENTER DR # 300
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11170 SUN CENTER DR # 400
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11170 SUN CENTER DR # 600
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11170 SUN CENTER DR STE 110
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11171 SUN CENTER DR
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11171 SUN CENTER DR STE 100
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11171 SUN CENTER DR STE 110
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11171 SUN CENTER DR STE 120
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11171 SUN CENTER DR STE 180
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11171 SUN CENTER DR STE 195
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11171 SUN CENTER DR STE 200
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11171 SUN CENTER DR STE 210
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11171 SUN CENTER DR STE 260
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11171 SUN CENTER DR STE 290
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11180 SUN CENTER DR
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11180 SUN CENTER DR # 100
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11180 SUN CENTER DR # 102
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
11180 SUN CENTER DR STE 101
RANCHO CORDOVA CA 95670

CONRAD ETHAN
1300 NATIONAL DR STE 100
SACRAMENTO CA 95834

STANLEY R ZIMMERMAN REVOCABLE TRUST
1361 REGENT ST
ALAMEDA CA 94501

HENRY J/JESSICA F CHEN 1998 REVOCABLE TRUST
1415 LOWER PASEO LA CRESTA
PALOS VERDES CA 90274

BERRUETA FAMILY REVOCABLE TRUST/BYPASS/ETAL
1600 FRONTERO AVE
LOS ALTOS CA 94024

JENNIFER BERRUETA VERGARA LIVING TRUST/ETAL
1600 FRONTERO AVE
LOS ALTOS CA 94024

CHEN HENRY J/JESSIE F/TR
17705 SOUTH MAIN ST
GARDENA CA 90248

ENCINA INVESTMENT GROUP SUN CENTER DR LLC
1999 S BASCOM AVE STE 700
CAMPBELL CA 95008

CURRENT OCCUPANT
2920 KILGORE RD
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
2925 KILGORE RD
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
2945 KILGORE RD
RANCHO CORDOVA CA 95670

ENERGY OPERATIONS MANAGEMENT INC
2981 GOLD CANAL DR
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
2991 GOLD CANAL DR
RANCHO CORDOVA CA 95670

2991 2999 GOLD CANAL LLC
2999 GOLD CANAL DR
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
2999 GOLD CANAL DR # A
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
2999 GOLD CANAL DR # B
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
3005 GOLD CANAL DR
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
3012 GOLD CANAL DR
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
3017 KILGORE RD
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
3017 KILGORE RD STE 100
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
3017 KILGORE RD STE 130
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
3017 KILGORE RD STE 140
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
3017 KILGORE RD STE 150
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
3017 KILGORE RD STE 180
RANCHO CORDOVA CA 95670

CURRENT OCCUPANT
3017 KILGORE RD STE 195
RANCHO CORDOVA CA 95670

SFC LEASING LIMITED PARTNERSHIP
3430 LUYUNG DR
RANCHO CORDOVA CA 95742

SFC LEASING LP
3430 LUYUNG DR
RANCHO CORDOVA CA 95742

CALIFORNIA PUBLIC EMPLOYEES RETIREMENT SYSTEM
400 Q ST W2510C
SACRAMENTO CA 95811

HILLIS REVOCABLE TRUST
533 JORDAN ST
NEVADA CITY CA 95959

PIONEER SAVINGS BANK F S B
5770 ROOSEVELT BLVD
CLEARWATER FL 33760

SOUNDS OF SACRAMENTO REHEARSAL FACILITY LLC
6230 STONEHAND AVE
CITRUS HEIGHTS CA 95621

WESTERN CENTURY INVESTMENTS LLC
9018 KERSH CT
ELK GROVE CA 95624

WCKD SUN CENTER LLC
PO BOX 269110
SACRAMENTO CA 95826

DCPII SAC 11085 SUN CENTER DRIVE LLC
PO BOX 92129
SOUTHLAKE TX 76092

SACRAMENTO SANITATION DISTRICT
10060 GOETHE ROAD
SACRAMENTO CA 95827

SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT
10060 GOETHE ROAD
SACRAMENTO CA 95827

SACRAMENTO COUNTY WATER AGENCY
10151 FLORIN ROAD
SACRAMENTO CA 95829

PG&E
2730 GATEWAY OAKS DRIVE
SACRAMENTO CA 95833

PG&E
343 SACRAMENTO STREET
AUBURN CA 95603

SMUD
6301 S STREET MS B304
SACRAMENTO CA 95817

SMUD
6301 S STREET MS B304
SACRAMENTO CA 95817

SMUD
6301 S STREET MS B404
SACRAMENTO CA 95817

SACRAMENTO METROPOLITAN FIRE
10545 ARMSTRONG AVE STE 310
MATHER CA 95655

FOLSOM CORDOVA UNIFIED SCHOOL DISTRICT
1965 BIRKMONT DRIVE
RANCHO CORDOVA CA 95742

GOLDEN STATE WATER COMPANY
3005 GOLD CANAL DRIVE
RANCHO CORDOVA CA 95670

CITY OF RANCHO CORDOVA
2729 PROSPECT PARK DR
RANCHO CORDOVA CA 95670

MEMORANDUM

DATE: January 6, 2020

TO: Honorable Mayor and Council Members

FROM: June Cowles, Senior Planner

SUBJECT: **2440 EAST TIFFANY LANE SOLAR TRELLIS CONDITIONAL USE PERMIT NO. DD9906. FOR A 192 SQUARE FOOT SOLAR TRELLIS LOCATED WITHIN THE 60-FOOT SETBACK OF THE AMERICAN RIVER PARKWAY CORRIDOR EROSION ZONE**

RECOMMENDATION

Staff recommends that the City Council find the project categorically exempt from further California Environmental Quality Act (CEQA) review and adopt the Resolution approving the Conditional Use Permit for the 2440 E. Tiffany Lane solar trellis project subject to the findings, Project Plans with conditions as follows: 1) The solar panels shall be a dark non-reflective type. 2) The applicant shall obtain a building permit for the trellis structure and solar panels

RESULT OF RECOMMENDED ACTION

Adoption of the Resolution would approve the Conditional Use Permit for the solar trellis location within the 60-foot setback of the American River Parkway Corridor erosion zone. Approval would allow the applicant to pursue necessary building permits for construction.

BACKGROUND

EXISTING SITE CONDITIONS:
The project site is adjacent to the American River Parkway and is within Parkway Corridor Overlay zoning district. The site includes a single-family home. **Figure 1; Site Location and Figure 2; Existing Site Conditions.**

Figure 1: Site Location

Figure 2: Existing Site Conditions

The purpose of the Parkway Corridor is to regulate property along the American River within the City. Within the corridor are four erosion zones. The subject property is within erosion zone 4 which includes a 60-foot setback from the edge of a bluff or terrace, whichever is closer to the river. Zoning Ordinance 23.325.070(E) states that any building or structure located within the erosion zone must obtain a conditional use permit. The solar trellis is located within the 60-foot setback and is approximately 48-feet from the bluff. Therefore, a conditional use permit is required. A geotechnical report was provided by the applicant's architect that states that the structure is designed in accordance with the requirements of the 2016 Building Code with respect to the soil bearing capacity, structural wood members and solar panel connections. There are no apparent safety hazards associated with the design and construction or location. Attachment 3.

Surrounding Land Use:
The following Table provides the current use, General Plan/Community Plan, and zoning (**Table 1 and Figure 3: Zoning Map**).

Table 1: Surrounding Designations and Existing Uses

Location	Existing Use	General Plan Designation	Zoning Designation
2440 E. Tiffany Ln	Single Family Home	Low Density	Residential Density 2
North	American River Open Space	Open Space	Open Space
East	Single Family Home	Low Density	Residential Density 2
South	Single Family Home	Low Density	Residential Density 2
West	Single Family Home	Low Density	Residential Density 2

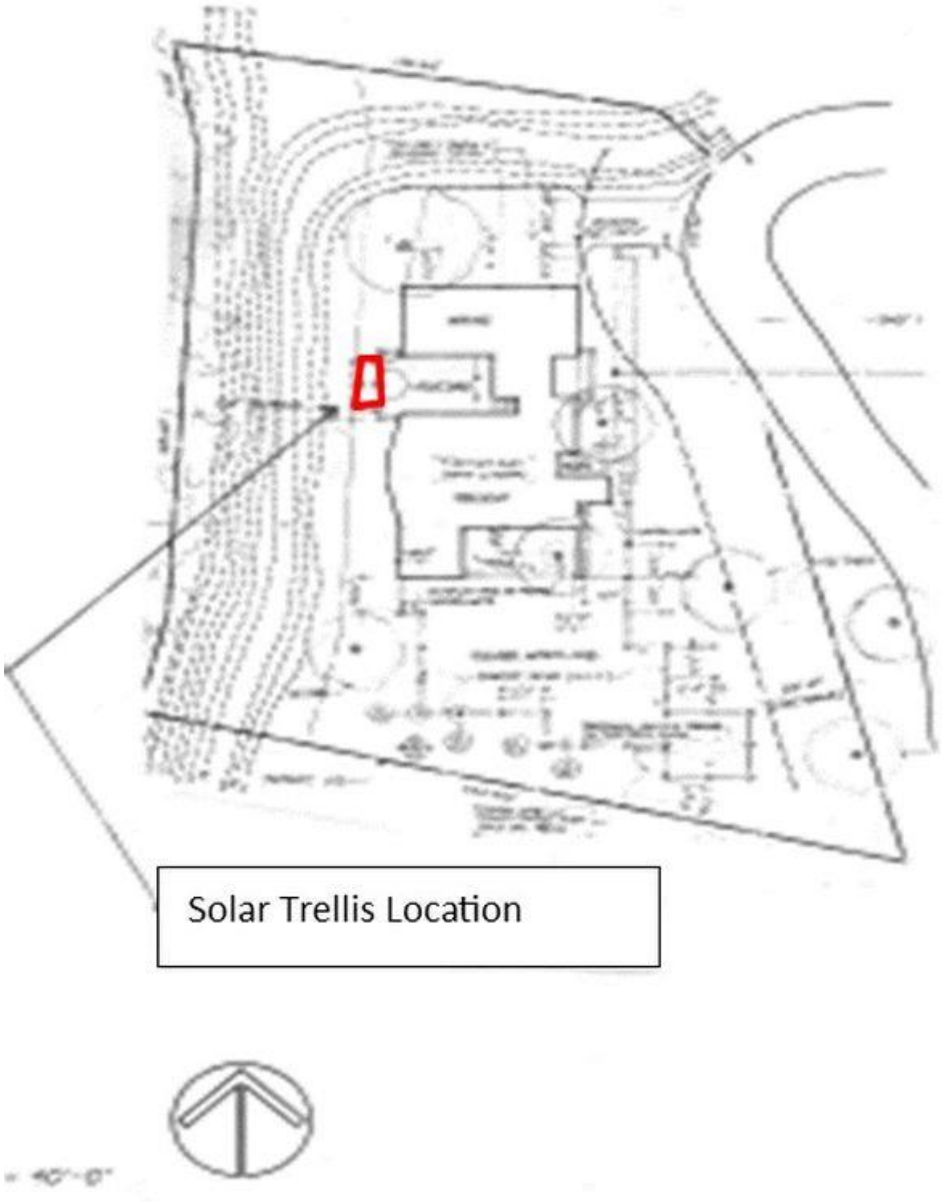
Figure 3: Zoning Map

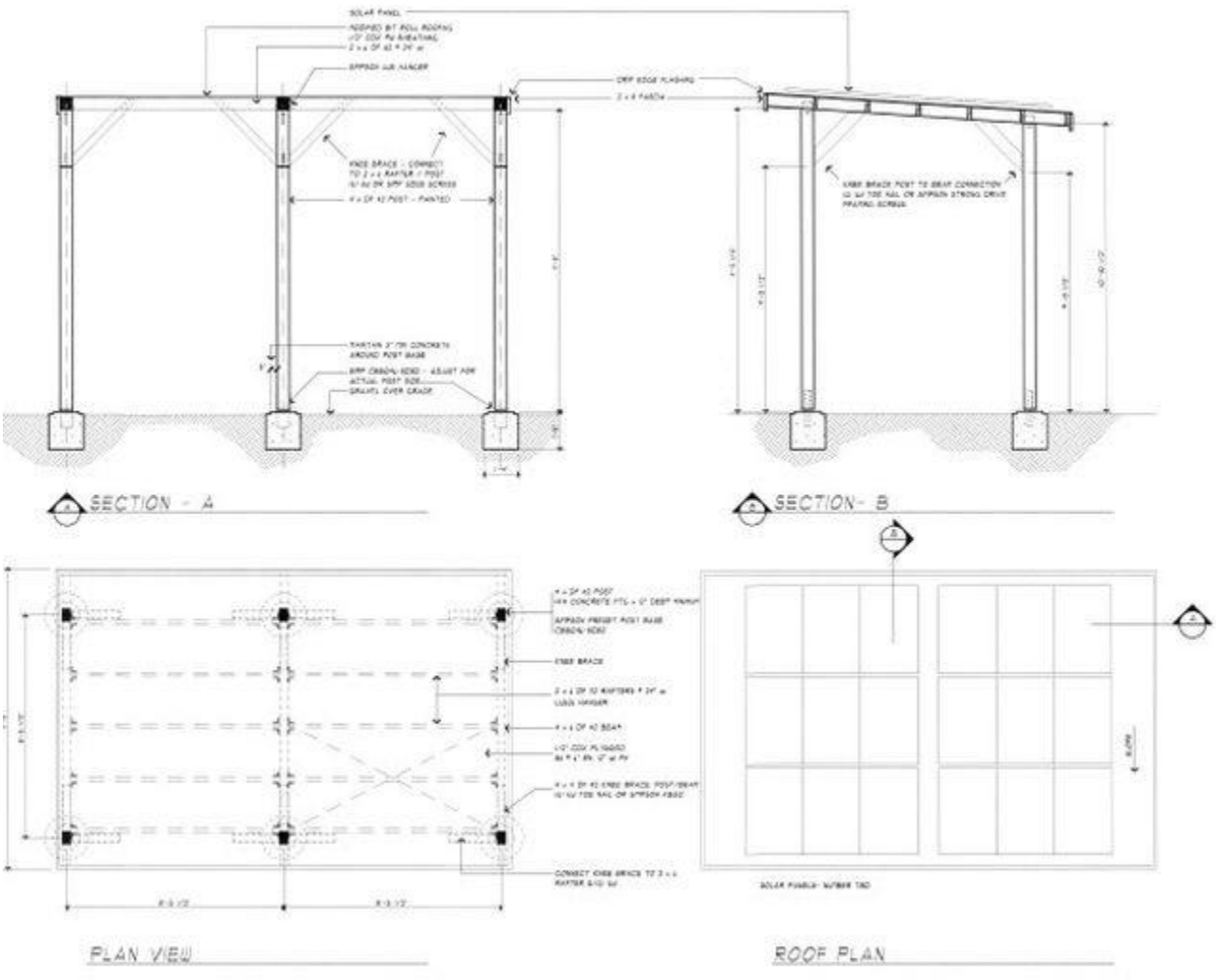
PROJECT DESCRIPTION:

The applicant is requesting a conditional use permit for a trellis structure that includes solar panels. The trellis structure was built without a building permit. The applicant wants to install solar panels and obtain the building permits for both the trellis and solar panels. **Figure 4: Proposed Site Plan and Elevations**. The solar trellis structure includes the following;

•The trellis is a detached structure.
•Measuring 11 feet 5 inches by 16 feet by 7 inches (192 square feet).
•The structure with the proposed solar panels is 12 feet in height.
•The structure consists of 6 posts and a flat roof (5% grade)
•The trellis material is painted wood to match the house.
•The trellis is designed to hold solar panels

Figure 4: Proposed Site Plan and Elevation





ANALYSIS:
The applicant is requesting a conditional use permit for the solar trellis to be located within the erosion zone 4 60-foot setback.

GENERAL PLAN AND ZONING ORDINANCE CONSISTENCY

General Plan:
The project site is located within the Low Density Residential designation and within the American River Parkway. Accessory structures are allowed within the residential designation.

Zoning Ordinance:
The project site is zoned Residential 2 (RD-2) and is within the Parkway Corridor Overlay district. The accessory structures associated with single-family homes are allowed within the RD-2 zoning district. The proposed project with the approval of the Conditional Use Permit is consistent with the Parkway Corridor development standards.

CONDITIONAL USE PERMIT REVIEW:

Applicant's Justification Letter:
The solar trellis structure is located adjacent to the house, in an enclosed space, and located in the rear yard. The applicant has provided a letter, Attachment 3, stating the following;

•The trellis is designed to hold solar panels that will be an addition to the panels planned to be installed on the roof of the single-family house.
•The trellis structure will provide more area for the solar panels which will make the residence environmentally effective.
•The location of the solar trellis is the only location on the property that has enough solar exposure, given the location of the trees on the property and orientation of the house relative to the sun angles.
•Removing trees on the property does not make sense as they reduce the cooling load during summer months.

In relation to the American River Parkway:
•There is no visual impact from the American River Parkway or the neighbors.
•The trellis is not visible by anyone except for the subject property owner or on rare occasion an authorized official who might walk along the property easement.
•The solar trellis is stained grey, the same color as the house.

Site Layout and Design:
The proposed solar trellis is located within a low-density residential subdivision and in the rear yard of the single family residence. The lot size of the subject property is 0.98 acres. The lot includes several large trees and shrubs adjacent to the American River Parkway. The solar trellis is 12 feet in height, 192 square feet in size and is painted the same color as the single-family residence in order to blend into the background. Staff visited the site and noted that the trellis is not visible from the American River Parkway or adjacent properties. See **Figure 5: Existing Photos.**

Figure 5: Existing Photos

1
2

Photos 1, 2 and 3
Views from the levy. Solar trellis enclosed within foliage privacy screen (no public access to the levy)

Photo 4
View from residence interior courtyard

(note: house and trellis are not visible from any point on the river: see attached areal views of house)

Conditional Use Permit Findings:
The Conditional Use Permit, as conditioned, adheres to the approval findings defined by Zoning Code section 23.134.030 as follows:

A.Finding: The site size, dimensions, location, topography, and access are adequate for the needs of the proposed use, considering the proposed building mass, parking, traffic, noise, vibration, exhaust/ emissions, light, glare, erosion, odor, dust, visibility, safety, and aesthetic considerations.

Evidence: The subject site is located within the Parkway Corridor and a low density (RD-2) residential subdivision. The solar trellis is 192 square feet and 12 feet high. As stated by the applicant the trellis is not seen from the American River Parkway or adjacent properties. Several trees and shrubs are located between the American River Parkway and the trellis. The solar trellis design and color are consistent with the existing adjacent building and is located within the rear yard.

B.Finding: The negative impacts of the proposed use on adjacent properties and on the public can be mitigated through application of other code standards or other reasonable conditions of

approval.

Evidence: The project has been reviewed by all applicable departments and agencies to minimize any potential impacts. The trellis structure will be utilized to affix solar panels on the roof. The solar trellis color is consistent with the existing single-family home on the site.

C.Finding: All required public facilities have adequate capacity to serve the proposal.

Evidence: The project has been reviewed by all applicable departments and agencies. A building permit application for the trellis and solar panels will need to be submitted to the Building & Safety Division for approval.

D.Finding: The project meets the requirements of the zoning code including development standards, design guidelines, and special use provisions.

Evidence: The project complies with all applicable standards and guidelines including the Zoning Ordinance 23.325.070 Parkway Corridor Overlay as proposed with the Conditional Use Permit.

E.Finding: If structures and site plans are considered nonconforming, the elements of a project that are nonconforming have been brought into compliance with the zoning code, where feasible

Evidence: The proposed project has been reviewed in accordance with all current design standards and is in compliance with applicable sections of the zoning code with the approval of a conditional use permit.

Parkway Corridor Findings:
In addition to the Conditional Use Permit Findings, when development is proposed within an erosion zone, the designated approval authority shall not grant a conditional use permit unless if finds and records in writing that adheres to the approval findings defined by Zoning Code section 23.325.070 (F) as follows:

A.Finding: Development will be sited and designed to ensure stability and structural integrity for its expected economic life span while minimizing alteration of natural landform features.

Evidence: The solar trellis is 192 square feet with six posts in the ground. The applicant is required to obtain a building permit for the structure and solar panels. The trellis structural integrity will be reviewed by the Building & Safety Division.

B.Finding: Development will not create or contribute to significant problems of erosion or geologic instability on the site or on surrounding areas.

Evidence: The trellis is located approximately 48 feet from the bluff. The structure includes six posts in the ground and does not include any walls. The ground disturbance was minimal with six posts cemented into the ground.

C.Finding: Development will maintain a safe environment for homes and other improvements and protect the aesthetics and environmental quality of the American River parkway.

Evidence: The trellis is located in the rear yard of a single-family parcel. The trellis is a small

detached structure with six posts in the ground. The trellis does not include any walls and is painted to match the existing single-family home in order to blend into the surrounding environment. A condition of approval has been included to the project that states that the solar panels shall be dark non-reflective type. The trellis structure is not visible from the American River Parkway or adjacent properties. A geotechnical report was provided by the applicant's architect that states that the structure is designed in accordance with the requirements of the 2016 Building Code with respect to the soil bearing capacity, structural wood members and solar panel connections. There are no apparent safety hazards associated with the design and construction or location.

D.Finding: Development does not preclude or foreclose future recreation or open space potential in the American River parkway.

Evidence: As stated above, the trellis is a small detached structure with six posts, no walls, and is painted to match the existing single-family home in order to blend into the surrounding environment. The trellis is located on a single-family lot within the rear yard. The trellis cannot be seen from the American River Parkway or trail due to the existing vegetation.

E.Finding: There are adequate provisions included in the development proposal for maintenance and revegetation of the project area.

Evidence: The trellis is a detached small painted wood structure that requires minimal maintenance. Vegetation is existing between the trellis and the American River Parkway.

ENVIRONMENTAL

The project is exempt from the California Environmental Quality Act (CEQA) pursuant Section 15303, New Construction or Conversion of Small Structures. A description of the evidence for the exemption is found in the findings included in Attachment 1.

FISCAL IMPACT AND FUNDING SOURCE

There is no Fiscal Impact.

ATTACHMENT(S)

1. Attachment 1 - Resolution
2. Attachment 2 - Exhibit A to the Resolution Project Plans
3. Attachment 3 - Project Justification Statement
4. Attachment 4 - Geotechnical Report
5. Attachment 5 - 500' Radius Map & Mailing Labels

CITY OF RANCHO CORDOVA

RESOLUTION NO. XX-2020

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF RANCHO CORDOVA, STATE OF CALIFORNIA, APPROVING A CONDITIONAL USE PERMIT FOR 2440 E. TIFFANY LANE SOLAR TRELLIS PROJECT NO. DD9906

WHEREAS, Jeanette Blomberg (hereinafter referred to as Applicant) filed an application with the City of Rancho Cordova for a Conditional Use Permit approval for a solar trellis located at 2440 E. Tiffany Lane; and

WHEREAS, the City Council is the appropriate authority to hear and take action on this project; and

WHEREAS, the project site located is within a low-density residential subdivision and the American River Parkway corridor. The solar trellis is a detached structure with six posts, 192 square feet, and 12 feet high. The applicant is proposing solar panels on top of the trellis roof. The detached structure is small and located within the rear yard of a single-family home. The solar trellis would not result in any significant effects to the environment, and therefore was determined to be Exempt per California Environmental Quality Act Section 15303 (New Construction or Conversion of Small Structures); and

WHEREAS, the City Council of the City of Rancho Cordova has conducted a properly noticed public hearing pursuant to Government Code section 65090 and has duly considered all written and verbal testimony presented during the hearing

NOW, THEREFORE, BE IT HEREBY RESOLVED THE CITY COUNCIL OF THE CITY OF RANCHO CORDOVA

1. The CEQA exemption found in California Code of Regulation Title 14, section 15303 (New Construction or Conversion of Small Structures) is an adequate exemption according to the Guidelines of the California Environmental Quality Act.

A. Finding: The project has been analyzed and is exempt per California Environmental Quality Act Guidelines Section 15303, “New Construction or Conversion of Small Structures.”

Evidence: The proposed project site location is within an existing developed low density subdivision. The solar trellis is 192 square feet with six posts and is defined as a small detached structure. Minimal ground disturbance occurred with the six posts in the ground.

2. Approve the Conditional Use Permit subject to the project plans (Exhibit A) and Conditions of Approval that the applicant obtain the necessary building permits, the solar panels be dark and non reflective type, and subject to the findings as defined by Zoning Code section 23.134.070 and evidence as follows:

A. Finding: The site size, dimensions, location, topography, and access are adequate for the needs of the proposed use, considering the proposed building mass, parking, traffic, noise, vibration, exhaust/ emissions, light, glare, erosion, odor, dust, visibility, safety, and aesthetic considerations.

Evidence: The subject site is located within the Parkway Corridor and a low density (RD-2) residential subdivision. The solar trellis is 192 square feet and 12 feet high. As stated by the applicant the trellis is not seen from the American River Parkway or adjacent properties. Several trees and shrubs are located between the American River Parkway and the trellis. The solar trellis design and color are consistent with the existing adjacent building and is located within the rear yard.

B. Finding: The negative impacts of the proposed use on adjacent properties and on the public can be mitigated through application of other code standards or other reasonable conditions of approval.

Evidence: The project has been reviewed by all applicable departments and agencies to minimize any potential impacts. The trellis structure will be utilized to affix solar panels on the roof. The solar trellis color is consistent with the existing single-family home on the site.

C. Finding: All required public facilities have adequate capacity to serve the proposal.

Evidence: The project has been reviewed by all applicable departments and agencies. A building permit application for the trellis and solar panels will need to be submitted to the Building & Safety Division.

D. Finding: The project meets the requirements of the zoning code including development standards, design guidelines, and special use provisions.

Evidence: The project complies with all applicable standards and guidelines including the Zoning Ordinance 23.325.070 Parkway Corridor Overlay as proposed with the Conditional Use Permit.

E. Finding: If structures and site plans are considered nonconforming, the elements of a project that are nonconforming have been brought into compliance with the zoning code, where feasible

Evidence: The proposed project has been reviewed in accordance with all current design standards and is in compliance with applicable sections of the zoning code with the approval of a conditional use permit.

3. Parkway Corridor Findings: In addition to the Conditional Use Permit Findings, when development is proposed within an erosion zone, the designated approval authority shall not grant a conditional use permit unless if finds and records in writing that adheres to the approval findings defined by Zoning Code section 23.325.070 (F) as follows:

A. Finding: Development will be sited and designed to ensure stability and structural integrity for its expected economic life span while minimizing alteration of natural land-form features.

Evidence: The solar trellis is 192 square feet with six posts in the ground. The applicant is required to obtain a building permit for the structure and solar panels. The trellis structural integrity will be reviewed by the Building & Safety Division.

B. Finding: Development will not create or contribute to significant problems of erosion or geologic instability on the site or on surrounding areas.

Evidence: The trellis is located approximately 48 feet from the bluff. The structure includes six posts in the ground and does not include any walls. The ground disturbance was minimal with six posts cemented into the ground.

C. Finding: Development will maintain a safe environment for homes and other improvements and protect the aesthetics and environmental quality of the American River parkway.

Evidence: The trellis is located in the rear yard of a single-family parcel. The trellis is a small detached structure with six posts in the ground. The trellis does not include any walls and is painted to match the existing single-family home in order to blend into the surrounding environment. A condition of approval has been included to the project that states that the solar panels shall be dark non-reflective type. The trellis structure is not visible from the American River Parkway or adjacent properties. A geotechnical report was provided by the applicant's architect that states that the structure is designed in accordance with the requirements of the 2016 Building Code with respect to the soil bearing capacity, structural wood members and solar panel connections. There are no apparent safety hazards associated with the design and construction or location

D. Finding: Development does not preclude or foreclose future recreation or open space potential in the American River parkway.

Evidence: As stated above, the trellis is a small detached structure with six posts, no walls, and is painted to match the existing single-family home in order to blend into the surrounding environment. The trellis cannot be seen from the American River Parkway or trail due to the existing vegetation.

E. Finding: There are adequate provisions included in the development proposal for maintenance and re-vegetation of the project area.

Evidence: The trellis is a detached small metal painted wood structure that requires minimal maintenance. Vegetation is existing between the trellis and the American River Parkway.

Conditions of Approval:
Two conditions are included with the project as follows;
1. The solar panels shall be a dark non-reflective type.
2. The applicant shall obtain a building permit for the trellis structure and solar panels.

PASSED AND ADOPTED by the City Council of the City of Rancho Cordova on the 6th day of

January 2020 by the following vote:

AYES:

NOES:

ABSENT:

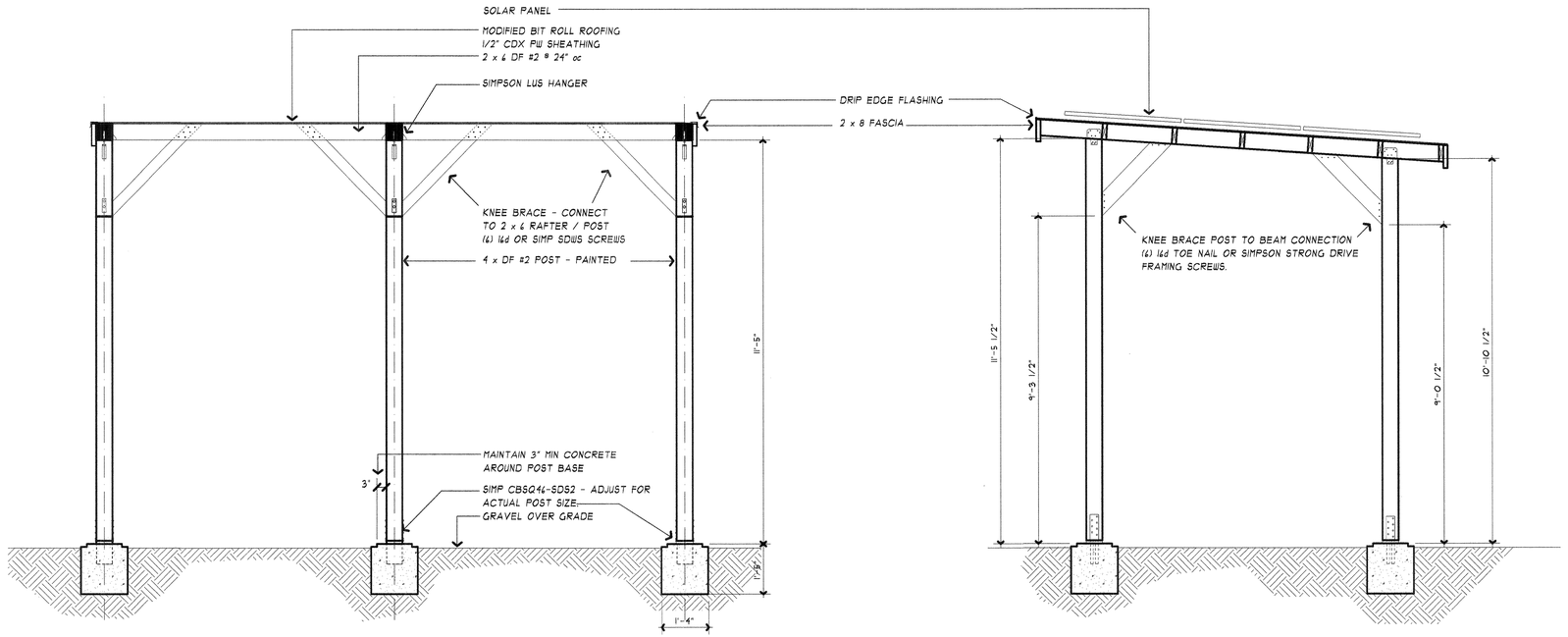
ABSTAIN:

ATTEST:

David M. Sander, Mayor

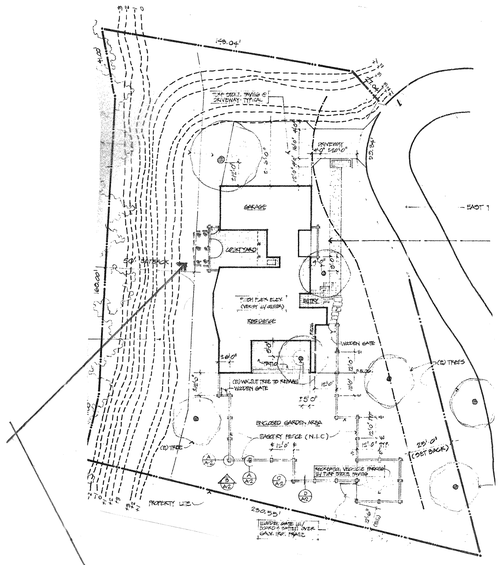
Stacy Leitner, CMC
City Clerk

7 | OPEN



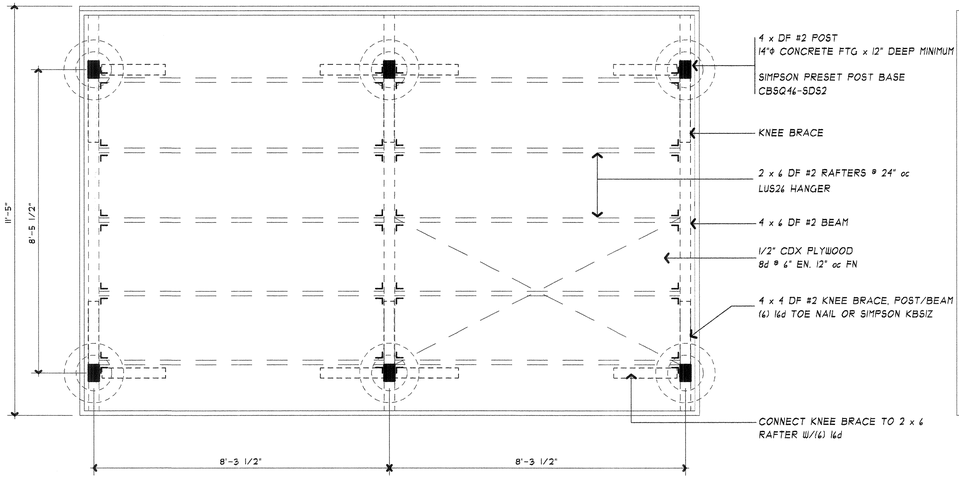
A SECTION - A

B SECTION- B

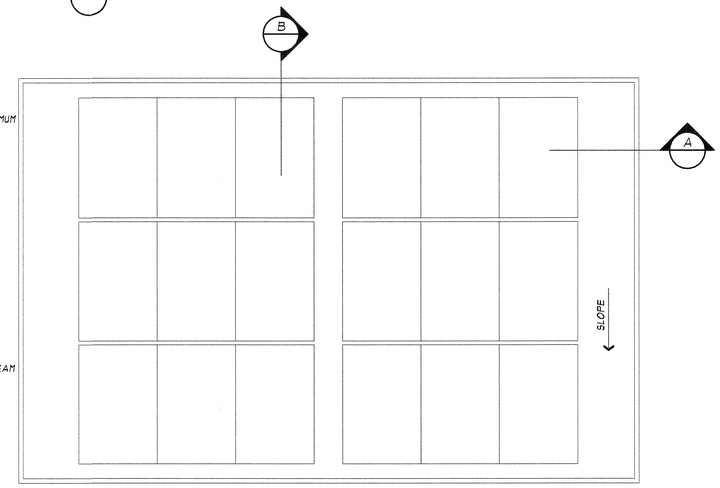


1"= 40'-0"

12 | SITE PLAN



PLAN VIEW



SOLAR PANELS- NUMBER TBD

ROOF PLAN

1/2" = 1'-0"

3 | SOLAR TRELLIS FLOOR PLAN

REVISIONS
1 CITY COMMENTS 7.3.18

HGT
ARCHITECT
C-22034
CASp-413
HOWARD G. TAYLOR
554 38th St.
Sacramento, Calif.
916. 607.2950
hgtarc51@gmail.com

LICENSED ARCHITECT HOWARD G. TAYLOR No. C 22034 OCTOBER 2013 STATE OF CALIFORNIA

SOLAR TRELLIS 8 X 16

FOR JEANETTE BLOMBERG AND RICHARD HUGHES
2440 EAST TIFFANY LANE
SACRAMENTO, CALIFORNIA. 95827
APN 015-0400-020-0000

DRAWN : HGT
DATE : 9.27.19
SCALE : VARIES
JOB NO. : 19-13
SHEET A1
OF 1 SHEETS

10/16/2019

JEANETTE BLOMBERG
2440 East Tiffany Lane, Sacramento, CA 95827
650-400-9759 | jeanette@jlblomberg.com |

RECEIVED
OCT 22 2019
RANCHO CORDOVA
PLANNING

October 21, 2019

Planning Department
City of Rancho Cordova
2729 Prospect Park Drive
Rancho Cordova, CA 95670

Dear Planning Department:

We are applying for a conditional use permit to place a solar trellis within the 60 ft setback required for the American River Parkway Corridor erosion zone. The solar trellis is adjacent to our house in an enclosed space and consists of 6 posts and a flat (5% grade) roof (see attached plans). The trellis is designed to hold solar panels that will be in addition to the panels we plan to install on the roof of our house (see attached proposal from Aztec Solar). In order to make the installation of solar panels cost and environmentally effective we need more space than just what is available on the roof of our house. The location of the solar trellis is the only location on the property that has enough solar exposure to make sense given the trees on the property and the location/orientation of the house relative to sun angles. Removing trees on the property doesn't make sense as they significantly reduce the cooling load during the summer months which also offsets the need for electricity.

There will be no visual impact for those who enjoy the American River Parkway or for our neighbors. The trellis is not visible by anyone but us or on rare occasion an authorized official who might walk along the property's easement. In addition, to blend into the landscape the solar trellis is stained grey, the same color as the house (see attached photos).

Finally, our desire to install solar panels is, in part, to respect and enhance the design concept of the house that my parents and an architect designed and built in 1981 as a "passive" solar house. They wished to be good stewards of the land and the environment and we want to continue in this tradition. We very much hope to move forward with this project in 2019 and await your decision to grant us a conditional use permit.

Thanks for your attention to this matter.

Sincerely,

Jeanette Blomberg

Roof and Shade Structure Proposal - FINAL

Prepared For

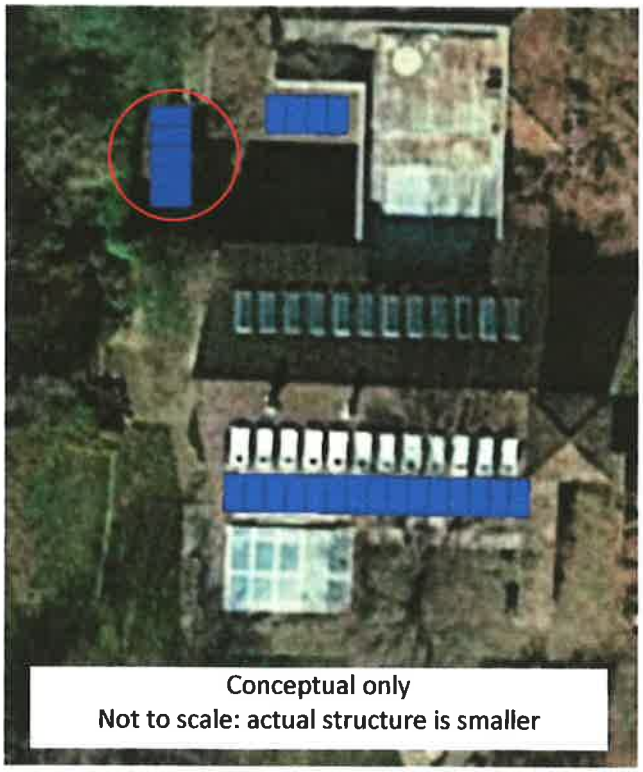
Jeanette Blomberg
650-400-9759
blomberg@us.ibm.com

Prepared By

Jonathan Gemma
(916) 853-2700
jonathan@aztecsolar.com

3/13/2019

Aztec Solar Inc. has been the Solar industry leader since 1980, building high quality solar installations. As a leader in high quality solar installations and service, Aztec Solar can provide residential and commercial owners with cost-effective energy solutions. We take great pride in providing effective solutions to more than 12,000 customers. Because we are licensed, bonded, certified and experienced, we are the preferred choice of both manufacturers and clients. Aztec Solar Inc. employs a highly-trained, specialized workforce and does not rely on outside sub-contractors.



Location of the solar trellis

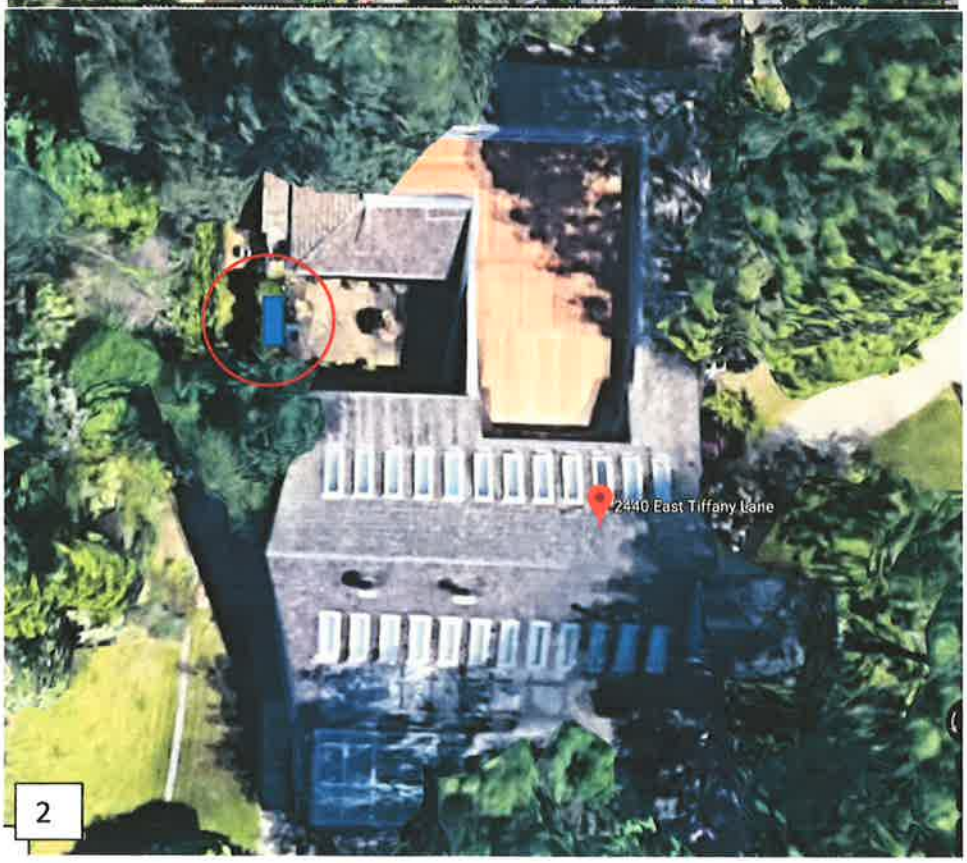
Photos 1, 2 and 3

Views from the levy. Solar trellis enclosed within foliage privacy screen (no public access to the levy)

Photo 4

View from residence interior courtyard

(note: house and trellis are not visible from any point on the river: see attached areal views of house)



Areal views of 2440 E Tiffany Lane.

1. No river view of house or solar trellis.
2. Location of the trellis: no neighbor view

HGT ARCHITECT

554 38th Street
Sacramento, California
95816
916.607.2950
h.g.taylor@sbcglobal.net

December 11, 2019

June Cowles
Senior Planner
City of Rancho Cordova
2729 Prospect Park Drive
Rancho Cordova, California, 95670
916-851-8756

Dear Ms. Cowles,

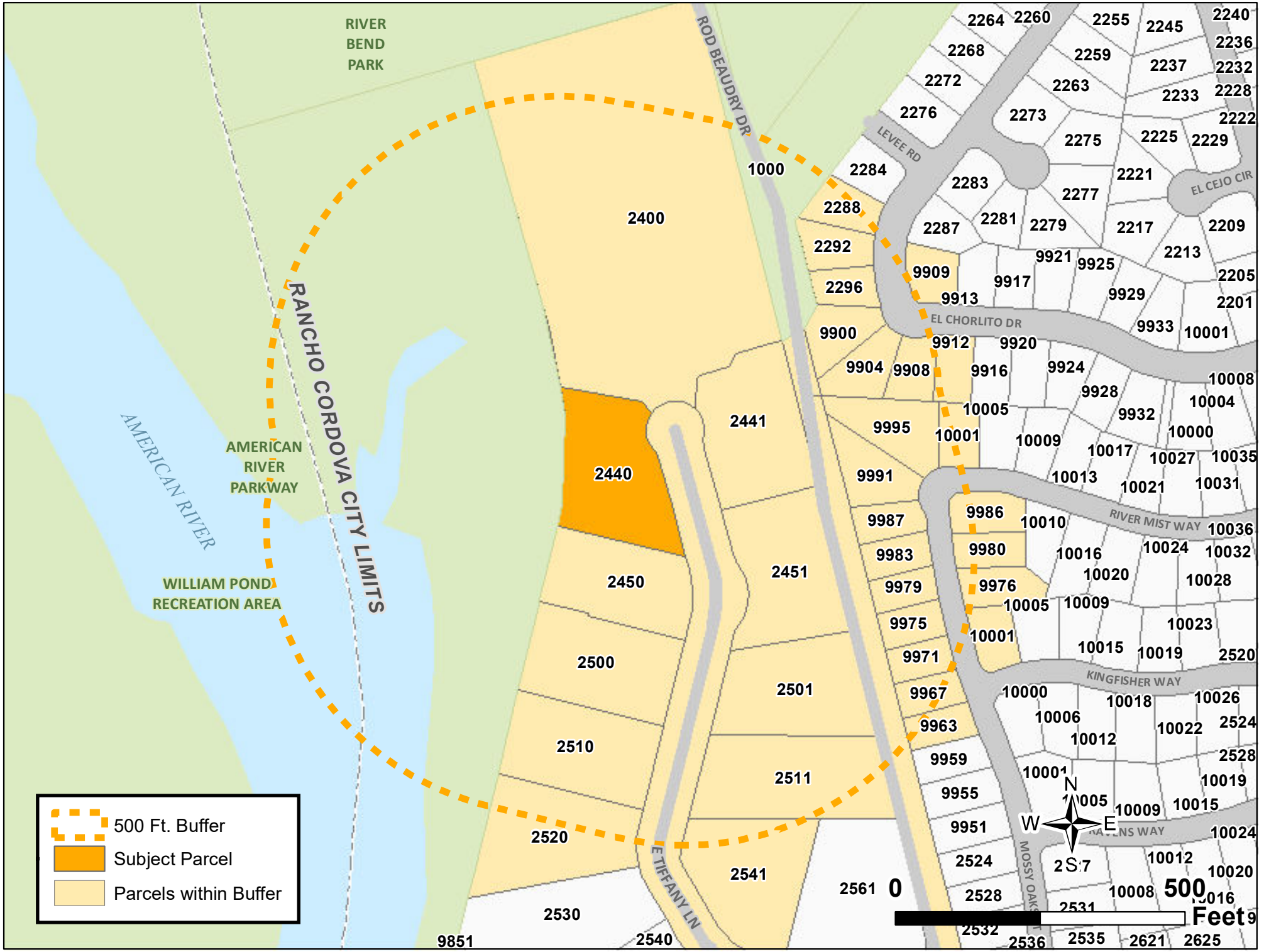
I am writing to convey my professional opinion that the proposed solar panel trellis to be built on the property located 2440 Tiffany Lane has been designed in accordance with the requirements of the 2016 California Building Code with respect to the soil bearing capacity, structural wood members and solar panel connections. There are no apparent safety hazards associated with the design and construction or the location.

Sincerely,

Howard G. Taylor
Architect

Howard G. Taylor, architect C-22036 CASp-413

ATTACHMENT 5



William G Daniel Ii Living Trust
9909 El Chorlito Dr
Rancho Cordova CA 95670

Redmon Chris A Jr/maria I
2292 El Cejo Cir
Rancho Cordova CA 95670

Wheeler Todd M/maureen
2296 El Cejo Cir
Rancho Cordova CA 95670

Buscio Christine M/michael J
9900 El Chorlito Dr
Rancho Cordova CA 95670

Barthel Daniel O/vicky L
9908 El Chorlito Dr
Rancho Cordova CA 95670

Current Resident
9904 El Chorlito Dr
Rancho Cordova CA 95670

Green Family Trust 2014
9912 El Chorlito Dr
Rancho Cordova CA 95670

Current Resident
2440 E Tiffany Ln
Sacramento CA 95827

Hughes Blomberg Fam Trst 2015
20 Portola Green Cir
Portola Valley CA 94028

John D Reynen Qualified Personal Res Trust/etal
2400 E Tiffany Ln
Sacramento CA 95827

Nelson Family Rev Trust
2441 E Tiffany Ln
Sacramento CA 95827

Anderson Jonathan/lena C Schwedler
2288 El Cejo Cir
Rancho Cordova CA 95670

James E/deborah K Kassis Family Trust
2520 E Tiffany Ln
Sacramento CA 95827

Hallissy John P/yolo Petroleum Inc
2510 E Tiffany Ln
Sacramento CA 95827

Current Resident
2451 E Tiffany Ln
Sacramento CA 95827

Stevens Debra K/douglas J
Po Box 660601
Sacramento CA 95866

Grant/susan Boice Revocable Living Trust
2501 E Tiffany Ln
Sacramento CA 95827

Ljubodrag Ljubisavljevic Family Revocable Trust
2511 E Tiffany Ln
Sacramento CA 95827

David E Lane/donna Parsons-lane 1990 Rev Trust
2541 E Tiffany Ln
Sacramento CA 95827

Current Resident
2450 E Tiffany Ln
Sacramento CA 95827

Rodgers Matthew/kimberly Matthews
1041 Santa Barbara Ct
Sacramento CA 95816

Ta Vu/jonica Christine Calkins
2500 E Tiffany Ln
Sacramento CA 95827

Tiffany Farms Homeowners Association
608 University Ave
Sacramento CA 95825

County Of Sacramento
827 7th St
Sacramento CA 95814

County Of Sacramento
10361 Rockingham Dr Ste 100
Sacramento CA 95827

Current Resident
1000 Rod Beaudry Dr
Sacramento CA 95827

Folsom Cordova Unified Sch Dist
1965 Birkmont Dr
Rancho Cordova CA 95742

Gaberman Laurette Ellen
9963 River Mist Way
Rancho Cordova CA 95670

Surjan Valerie A
9976 River Mist Way
Rancho Cordova CA 95670

Austin Darryl/kimberly J
9980 River Mist Way
Rancho Cordova CA 95670

Mcmillian Glenda Fay
9986 River Mist Way
Rancho Cordova CA 95670

Evans M R/colette G
10001 Kingfisher Way
Rancho Cordova CA 95670

Fukuman Lance Yoshio
9967 River Mist Way
Rancho Cordova CA 95670

Ferrari Revocable Living Trust
9971 River Mist Way
Rancho Cordova CA 95670

Stidham Richard Andrea/renee Dawn
Meyer Stidham
9975 River Mist Way
Rancho Cordova CA 95670

Mcgill Edward H
9979 River Mist Way
Rancho Cordova CA 95670

Barnett Mitchell
9983 River Mist Way
Rancho Cordova CA 95670

Robinson Living Trust
9987 River Mist Way
Rancho Cordova CA 95670

Rush Lynda L/bryon K
9991 River Mist Way
Rancho Cordova CA 95670

Catello Joseph C
9995 River Mist Way
Rancho Cordova CA 95670

Kiaski Kyle
10001 River Mist Way
Rancho Cordova CA 95670

SACRAMENTO SANITATION DISTRICT
10060 GOETHE ROAD
SACRAMENTO CA 95827

SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT
10060 GOETHE ROAD
SACRAMENTO CA 95827

SACRAMENTO COUNTY WATER AGENCY
10151 FLORIN ROAD
SACRAMENTO CA 95829

PG&E
2730 GATEWAY OAKS DRIVE
SACRAMENTO CA 95833

PG&E
343 SACRAMENTO STREET
AUBURN CA 95603

SMUD
6301 S STREET MS B304
SACRAMENTO CA 95817

SMUD
6301 S STREET MS B304
SACRAMENTO CA 95817

SMUD
6301 S STREET MS B404
SACRAMENTO CA 95817

SACRAMENTO METROPOLITAN FIRE
10545 ARMSTRONG AVE STE 310
MATHER CA 95655

FOLSOM CORDOVA UNIFIED SCHOOL DISTRICT
1965 BIRKMONT DR
RANCHO CORDOVA CA 95742

CAL AMERICAN WATER COMPANY
4701 BELOIT DR
SACRAMENTO CA 95838-2434

CITY OF RANCHO CORDOVA
2729 PROSPECT PARK DR
RANCHO CORDOVA CA 95670

MEMORANDUM

DATE: January 6, 2020

TO: Honorable Mayor and Council Members

FROM: June Cowles, Senior Planner

SUBJECT: **SUNRISE PALMS; CONDITIONAL USE PERMIT, ADMINISTRATIVE USE PERMIT, MAJOR DESIGN REVIEW AND REQUEST FOR A LETTER OF PUBLIC CONVENIENCE AND NECESSITY; PROJECT NO. DD9841 – LOCATED AT 3251 AND 3261 SUNRISE BOULEVARD (NORTHEAST CORNER OF SUNRISE BOULEVARD AND MONIER CIRCLE), 072-0410-094-0000**

RECOMMENDATION

Staff recommends that the City Council find the project categorically exempt from further California Environmental Quality Act (CEQA) review and adopt the Resolution approving the Conditional Use Permit, Administrative Use Permit, Major Design Review, and Letter of Public Convenience and Necessity for alcohol beverage sales for wine and beer within the convenience store subject to the findings, Project Plans and Conditions of Approval.

RESULT OF RECOMMENDED ACTION

Adoption of the Resolution would approve the Conditional Use Permit, Administrative Use Permit, Major Design Review, and Letter of Public Convenience and Necessity to include a service station with a self-service car wash, restaurant use with a drive through, tenant space, and would permit the sale of alcohol, (Type 20 license) at the service station convenience store located at the northeast corner of Sunrise Boulevard and Monier Circle. Approval would allow the applicant to pursue necessary building permits for new construction and Alcoholic Beverage Control license

BACKGROUND

EXISTING SITE CONDITIONS:

The proposed project is located at the northeast corner of Sunrise Boulevard and Monier Circle that includes existing sidewalks. The site is flat with natural grass. One existing driveway is located on Sunrise Boulevard which includes a driveway access easement. The site is 1.44 acres and is zoned Light Industrial/Manufacturing (M-1) **Figure 1; Site Location**.

Figure 1: Site Location

Surrounding Land Use:

The following Table provides the current use, General Plan/Community Plan, and zoning (**Table 1 and Figure 2: Zoning Map**).

Table 1: Surrounding Designations and Existing Uses

Location	Existing Use	General Plan Designation	Zoning Designation
3251/3261 Sunrise Boulevard.	Undeveloped lot	Sunrise Blvd South Planning Area; Light Industrial	Light Industrial
North	Sunrise Tech Center (multi-tenant use)	Sunrise Blvd South Planning Area; Light Industrial	Light Industrial
East	Light manufacturing business auto repair use	Sunrise Blvd South Planning Area; Light Industrial	Light Industrial
South	Self-storage	Sunrise Blvd South Planning Area; Light Industrial	Light Industrial
West	Sunrise Boulevard and Folsom Canal and trail	Public/Quasi Public	Parks and Open Space

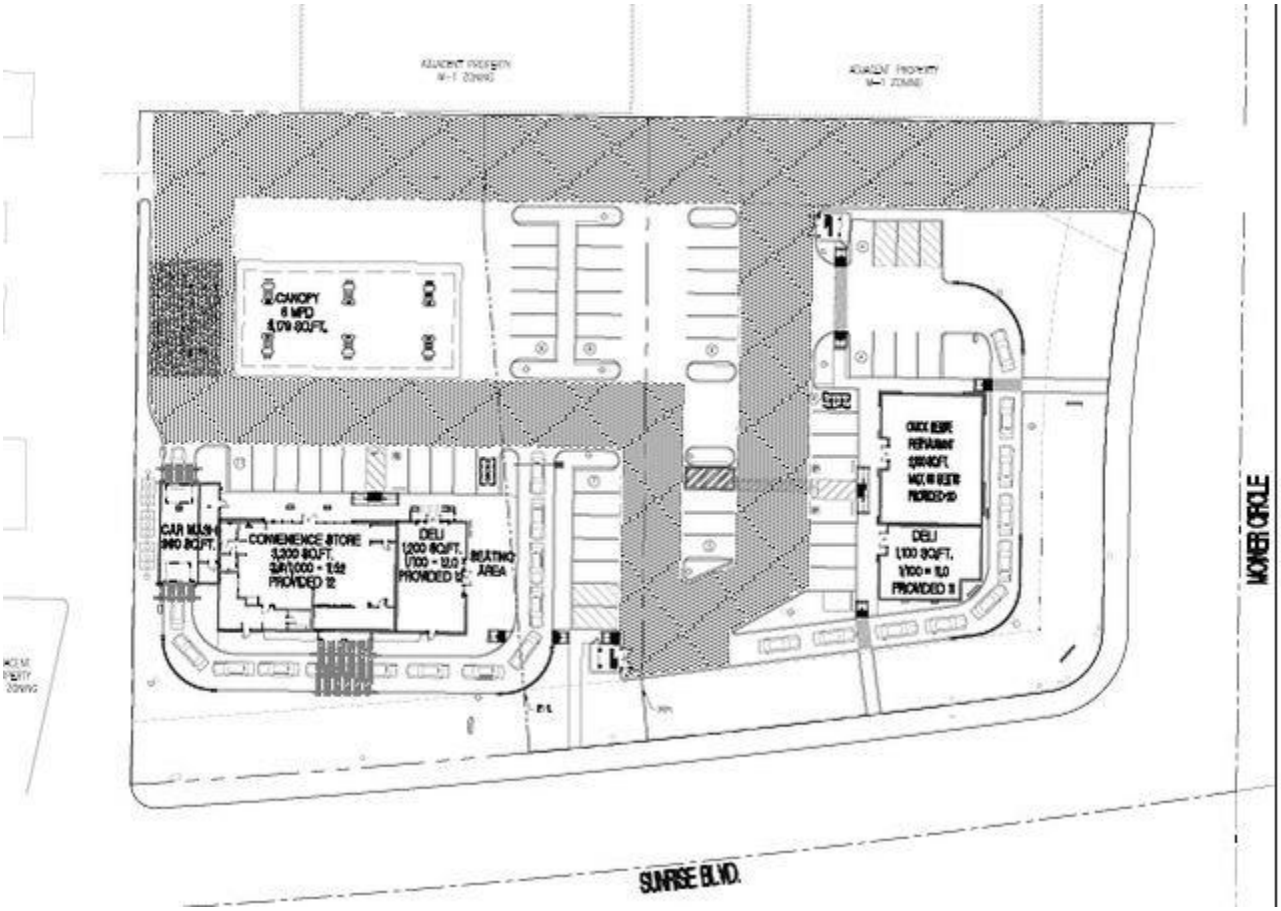
Figure 2: Zoning Map

PROJECT DESCRIPTION:
The applicant, Burrell Consulting Group, is requesting a Conditional Use Permit, Administrative Use Permit, Major Design Review and Letter of Public Convenience and Necessity. **Figure 3: Proposed Site Plan**. The project description includes the following;

- Service station with 6 pump islands
- A 3,200 square foot 24 hour convenience store with a self-service drive through carwash with limited operating hours of 7 a.m. to 10 p.m.

- A 1,200 square foot restaurant space in the same building as the convenience store
- A 2,100 square foot drive-through restaurant and a 1,100 restaurant use in the second building
- Sale of alcoholic beverages; beer and wine within the convenience store

Figure 3: Proposed Site Plan



A Conditional Use Permit is required for the following uses:

- Service Station
- Convenience store
- Drive-through sales and service
- Sale of alcoholic beverages

An Administrative Use Permit is required for a restaurant use within a Light Industrial/Manufacturing zoning district.

ANALYSIS:

The Sunrise Palms project entitlements will be analyzed individually as follows;

- Conditional Use Permit and Letter of Public Convenience and Necessity
- Administrative Use Permit
- Major Design Review

GENERAL PLAN AND ZONING ORDINANCE CONSISTENCY

General Plan:
The project site is located within the Sunrise Boulevard South Planning Area Light Industrial designation. The planning area includes many commercial and industrial uses south of Highway 50 along the Sunrise corridor. Uses for this area include industrial and commercial mixed use designations. The proposed project with the approval of the conditional use and administrative use permits is consistent with the General plan designation.

Zoning Ordinance:
The project site is zoned Light Industrial/Manufacturing (M-1). The following proposed uses require a conditional use permit (Zoning Ordinance Table 23.316-1);

- Service station
- Convenience store
- Sale of alcoholic beverages
- Drive-through sales and services

The proposed restaurant use (Zoning Ordinance Table 23.316-1) requires an administrative use permit. At this time the applicant does not have a tenant for the restaurant use spaces which includes the restaurant drive through. The development may have uses that are not a restaurant use. Any future tenant use will need to either be permitted by right or acquire the required discretionary permits to locate in the project buildings. The proposed project with the approval of the conditional use permit and administrative use permit is consistent with Light Industrial/Manufacturing zoning district.

CONDITIONAL USE PERMIT REVIEW:
Review of the Conditional Use Permit is intended to ensure that the uses listed below are compatible with nearby uses.

- Service station
- Convenience store

- Drive-through sales and services
- Sale of alcoholic beverages

Surrounding Area Uses:
The proposed Sunrise Palms project includes a service station, convenience store with a self-service car wash and a request to sale alcoholic beverages. The drive through restaurant is located in a separate pad building. Surrounding uses include commercial and light industrial uses along Sunrise Boulevard and along Monier Circle. Office and residential uses are to the west of the site across Sunrise Boulevard that is separated by the Folsom South Canal.

Site Layout:
The proposed site layout includes two buildings and a fuel canopy structure as follows;

- The buildings along with the drive-through lanes are located adjacent to the public right of ways.
- The fuel canopy and parking are located interior to the site.
- A 25 foot wide landscape buffer is located along Sunrise Boulevard and Monier Circle.

Access:
Sunrise Boulevard is categorized as a limited access expressway within the General Plan. These types of roads are the largest roadway types in the City. The objective of these roadways is to move the greatest number of vehicles as efficiently and safely as possible. The proposed project access points include the following;

- One existing driveway right-in right-out on Sunrise Boulevard.
- One new driveway on Monier Circle.
- A total of three pedestrian sidewalks are provided from Sunrise Boulevard and Monier Circle existing sidewalks to the project site.

Hours of Operation:
The proposed project hours of operation are as follows;

- 24 hour operation for the Service station and convenience store.
- 7 a.m. to 10 p.m. operation for the self-service carwash.
- The second pad building and tenant space adjacent to the convenience store at this time does not have a tenant. There are no limited operation times.

Zoning Ordinance Site Planning, Development, and/or Operating Standards:
The zoning ordinance includes additional standards for specific uses. The purpose of the additional standards is to provide additional design and operational standards. Three of the

proposed uses include development standards as follows;

- Convenience stores 23.910.020. Provides standards for increased security and safety for employees and patrons of the convenience store and compatibility with surrounding businesses and residents. A condition of approval is included that requires the applicant to submit a security plan to the Police Department.
  The applicant has included and is consistent with all of standards stated in 23.910.020, that includes;
    - Outdoor lighting
    - Litter removal
    - Window placement and design
    - Security plan and system
- Drive-in and drive-through sales and service 23.910.030. Provides standards to regulate the drive through operation
  The proposed project includes the drive-through sales and service standards that includes the following;
    - Operation of windows and remote tellers
    - Mitigation of traffic and congestion
    - Excessive pavement
    - Pedestrian connections
    - Litter and noise control
- Service Station 23.913.030. Provides location requirements and development standards
  The proposed project is not located adjacent to residential zones or uses and is not located near nonoperational service stations. The proposed project is consistent with the development standards that include;
    - Frontage length minimum of 135 feet.
    - Pump island location
    - Access driveway consistent with the Rancho Cordova Public Works Improvement standards
    - Landscaping
    - Signs

- Fences and Walls
- Structure height consistent with the underlying zoning district

Alcoholic Beverage Sales and Letter of Public Convenience and Necessity

The proposed project includes a request for alcoholic beverage sales within the convenience store for beer and wine, Alcoholic Beverage Control (ABC) application for Type-20 ABC license. As part of the Type 20 ABC license application, the Alcoholic Beverage Control Act requires further review by the local governing body if any of the following conditions are applicable to a proposed location:

(1)"The applicant premises are located in a crime reporting district that has a 20 percent greater number of reported crimes … than the average number of reported crimes as determined from all crime reporting districts within the jurisdiction of the local law enforcement agency." (high crime) NOT APPLICABLE

(2)"As to on-sale retail license applications, the ratio of on-sale retail licenses to population in the census tract or census division in which the applicant premises are located exceeds the ratio of on-sale retail licenses to population in the county in which the applicant premises are located. NOT APPLICABLE

(3)"As to off-sale retail license applications, the ratio of off-sale retail licenses to population in the census tract or census division in which the applicant premises are located exceeds the ratio of off-sale retail licenses to population in the county in which the applicant premises are located." (ratio of licenses to population) APPLICABLE

The Rancho Cordova Municipal Code Chapter 4.60 regulates the issuance of "letters of public convenience" and outlines that the request must be routed to all applicable agencies and must be heard before City Council for a determination of approval.

There are 4 active off-sale alcohol licenses in the same tract. (Attachment 4)
The applicant has included a justification letter for the request of wine and beer sales (Attachment 5). The applicant states the following;

- The proposed project is a neighborhood/convenience development comprised of many complementary uses including, but not limited to restaurants, personal services, convenience market and fueling station. The development will serve the local area residents and also serve visitors traveling Sunrise Boulevard and International Drive.
- Convenience store includes a broad array of products for the consumer's convenience.
- The sale of beer and wine will be one of the important parts of the convenience market concept. By providing a whole host of products, including beer and wine, readily available to the consumer. Without the beer and wine items, the customer is required to make two or more trips.

- The applicant is providing a commitment to security and control with several conditions as stated in Attachment 5.

The Rancho Cordova Police Department reviewed the applicant's security plan and reviewed the history of service calls to determine the activity in the area. The police department does not oppose the request for the Letter or Public Convenience and Necessity.

The Conditional Use Permit, as conditioned, adheres to the approval findings defined by Zoning Code section 23.134.070 as follows:

A. Finding: The site size, dimensions, location, topography, and access are adequate for the needs of the proposed use, considering the proposed building mass, parking, traffic, noise, vibration, exhaust/ emissions, light, glare, erosion, odor, dust, visibility, safety, and aesthetic considerations.

Evidence: The project site is an adequate size to accommodate the proposed project. The proposed building site location and design, to include access and operation has been designed to integrate into the surrounding area through building location and building architecture. The site design includes two buildings located along the two existing public right of ways. A 25-foot-wide landscape buffer is located between the buildings and the public right of ways. Parking and the fuel canopy are located interior to the site. The proposed hours of operation for the service station and convenience store are 24 hours. The self-service car wash has limited hours of operation from 7 a.m. to 10 p.m. The project includes conditions to minimize any potential impacts and fulfill the design policies of the General Plan and Design Guidelines.

B. Finding: The negative impacts of the proposed use on adjacent properties and on the public can be mitigated through application of other code standards or other reasonable conditions of approval.

Evidence: The project has been reviewed and conditioned by all applicable departments and agencies to minimize any potential impacts to include lighting standards and shields and a survey for nesting birds prior to grading the site. The proposed carwash hours of operation are limited from 7 a.m. to 10 p.m. in order to reduce nighttime operation noise. In addition, the fuel canopy and parking are located interior to the site with the buildings along the public right of ways. Therefore, reducing the amount of light and noise operation from the site to the surrounding area. The proposed building size and architecture is consistent with the existing surrounding buildings. The proposed project uses; the convenience store, drive-through, and service station are consistent with the zoning ordinance development standards as stated in 23.910.020, 23.910.030, and 23.913.030. The applicant has provided additional security and control conditions in relation to the requested alcohol beverage sales. Alcoholic beverage sales request at this location has been reviewed along with the applicant's security plan and therefore not opposed by the Rancho Cordova Police Department (RCPD). RCPD did not identify any concerns regarding the proposal. The applicant will be subject to regulations from the state Alcoholic Beverage Control as part of standard licensure. Conditions of approval for the project would ensure that alcoholic beverage sales remain incidental to retail sales.

C. Finding: All required public facilities have adequate capacity to serve the proposal.

Evidence: The project has been reviewed and conditioned by all applicable departments and agencies to supply adequate facilities. All facilities to include electricity, water, and sewer are existing and in place. Therefore, all required public facilities are adequate to serve the proposed project.

D. Finding: The project meets the requirements of the zoning code including development standards, design guidelines, and special use provisions.

Evidence: The project complies with all applicable standards and guidelines including the Zoning Ordinance 23.910.020, 23.910.030, and 23.913.030 as proposed with the Conditional Use Permit. The proposed project has been designed with a consistent architecture theme. The two buildings are located along the public right of way with the fuel canopy and parking interior to the site. A landscape buffer separates the buildings from the public right of way.

E. Finding: If structures and site plans are considered nonconforming, the elements of a project that are nonconforming have been brought into compliance with the zoning code, where feasible

Evidence: The proposed project has been reviewed in accordance with all current design standards and is in compliance with applicable sections of the zoning code.

ADMINISTRATIVE USE PERMIT:
The proposed project includes tenant space for restaurant uses. At this time restaurant tenants have not been identified. The applicant requests that the restaurant use be allowed in the tenant spaces in either building in order to provide flexibility for future tenants.

Along Sunrise Boulevard are several commercial and industrial uses. The proposed project will provide additional food services to the area where there are several industrial uses that include manufacturing, service, and mechanical employment. In addition, Sunrise Boulevard is categorized as a limited access expressway, that provides a main travel corridor for the area.

The Administrative Use Permit, as conditioned, adheres to the approval findings defined by Zoning Code section 23.125.070 as follows:

A. Finding: The proposed use is allowed with the applicable zoning district and complies with all other applicable provisions of this zoning code, municipal code, General Plan, and any applicable Specific Plans or city regulations/standards.

Evidence: The proposed restaurant use is allowed within the light industrial/manufacturing zoning district with an approved Administrative Use Permit. The proposed restaurant use is within a small retail development that includes a service station and convenience store on a main traveled corridor. The restaurant use provides additional food services to the area and is consistent with the zoning code, municipal code, General Plan and applicable city

regulations/standards.

B. Finding: The site is physically suited for the type, density, and intensity of the proposed use, including access, utilities, and the absence of physical constraints, and can be conditioned to meet all related performance criteria and development standards.

Evidence: The site is physically suited for the type, density and intensity of the proposed restaurant use including two access driveways to the site. A drive through restaurant is proposed in the second building along with an additional restaurant use. The third restaurant use is located within the convenience store building. The proposed drive through restaurant use includes additional development standards as stated in 23.910.030 and is consistent with those standards as stated on page 6-7 of this staff report.

C. Findings: The permit would not be detrimental to the public interest, health, safety, convenience, or welfare, or materially injurious to persons, property, or improvements in the vicinity in which the project is located.

Evidence: The proposed restaurant use would not be detrimental to the public interest, health or safety or welfare, or materially injurious to persons or property in the area. Instead the proposed use will provide additional food services to an area that includes industrial employment.

MAJOR DESIGN REVIEW:

Site Layout and Design

The proposed site layout includes two buildings and a fuel canopy structure as follows;

- The buildings are located adjacent to Sunrise Boulevard and Monier Circle with the fuel canopy and parking located interior to the site.
- By locating the buildings along the street, the buildings define and enhance street corners and edges.
- A 25 foot wide landscape buffer is located along Sunrise Boulevard and Monier Circle. The drive-through lanes are located between the landscape buffer and the buildings.
- One drive through lane is for the self service car wash attached to the convenience store. The second drive through lane is for a restaurant use. Both drive-through lanes include a low wall between the landscape buffer and the drive-through lane in order to shield car headlights from the adjacent public right-of-way.

Access and Parking:
The proposed project access includes;

- One existing right-in right-out on Sunrise Boulevard and one proposed on Monier Circle.
- A total of three pedestrian connections are provided from Sunrise Boulevard and Monier Circle to the project site.

Parking Spaces:
The proposed project is consistent with the zoning ordinance parking requirements:

Use	Required Spaces	Provided Spaces
Building 1; 3,200 square foot convenience store and a 1,200 square foot tenant space.	24	24
Building 2; 2,100 square foot drive through restaurant and a 1,100 square foot tenant space.	44	44
Total Parking Spaces	**68**	**68**

Building Elevations:
The building architecture includes parapet roofline with several pitched tower rooflines to achieve roofline variation. Building elevations include different wall planes with pillars, trellises, windows and different colors to provide wall variation and architectural interest. **Figure 4: Building Elevations, Figure 5: Site Perspectives**

Building Material and Colors:
The proposed building materials include the following;

- Brown tone brick is utilized on the building wainscot, pillars, fuel canopy post, and drive through low walls
- Cement plaster in fine sand finish and smooth finish in crème, light brown tones, dark brown, and burnt orange colors
- Dark metal trellis
- Dark grey standing seam roof
- Glass windows

Figure 4: Building Elevations

NOTE: FINISHES AND PAINT COLOR - SEE KEYNOTES ON BLACK AND WHITE ELEVATIONS AND MATERIAL BOARD

Pad Bldg West Elevation

Pad Bldg North Elevation

NOTE: FINISHES AND PAINT COLOR - SEE KEYNOTES ON BLACK AND WHITE ELEVATIONS AND MATERIAL BOARD

Pad Bldg East Elevation

Pad Bldg South Elevation

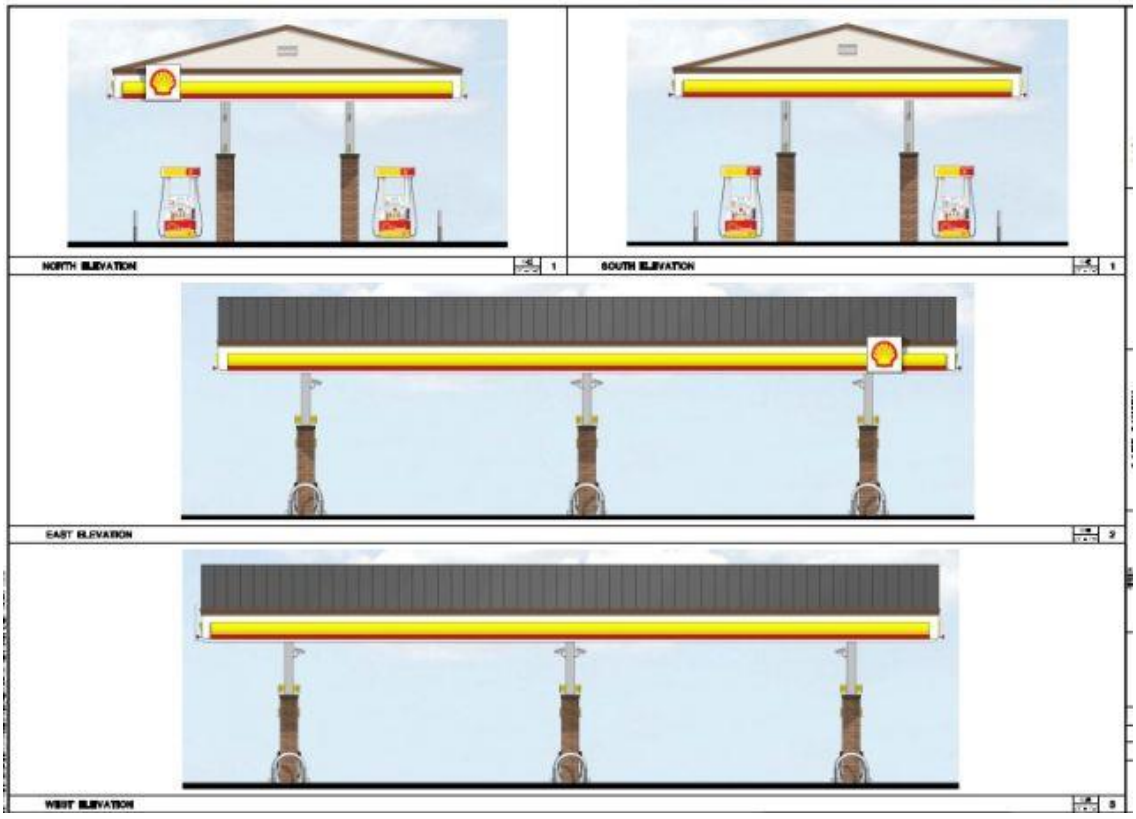


Figure 5: Site Perspectives

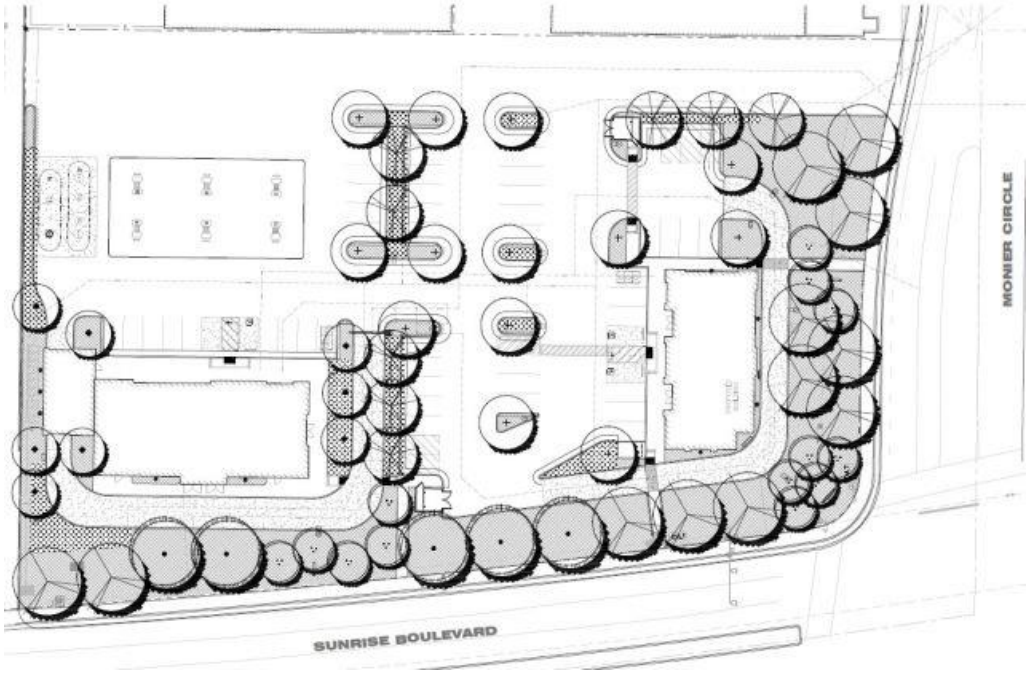
Traveling South on Sunrise Blvd.

Traveling North on Sunrise Blvd

Landscape Plan:
The proposed landscape plan, **Figure 6: Landscape Plan**, includes the following;

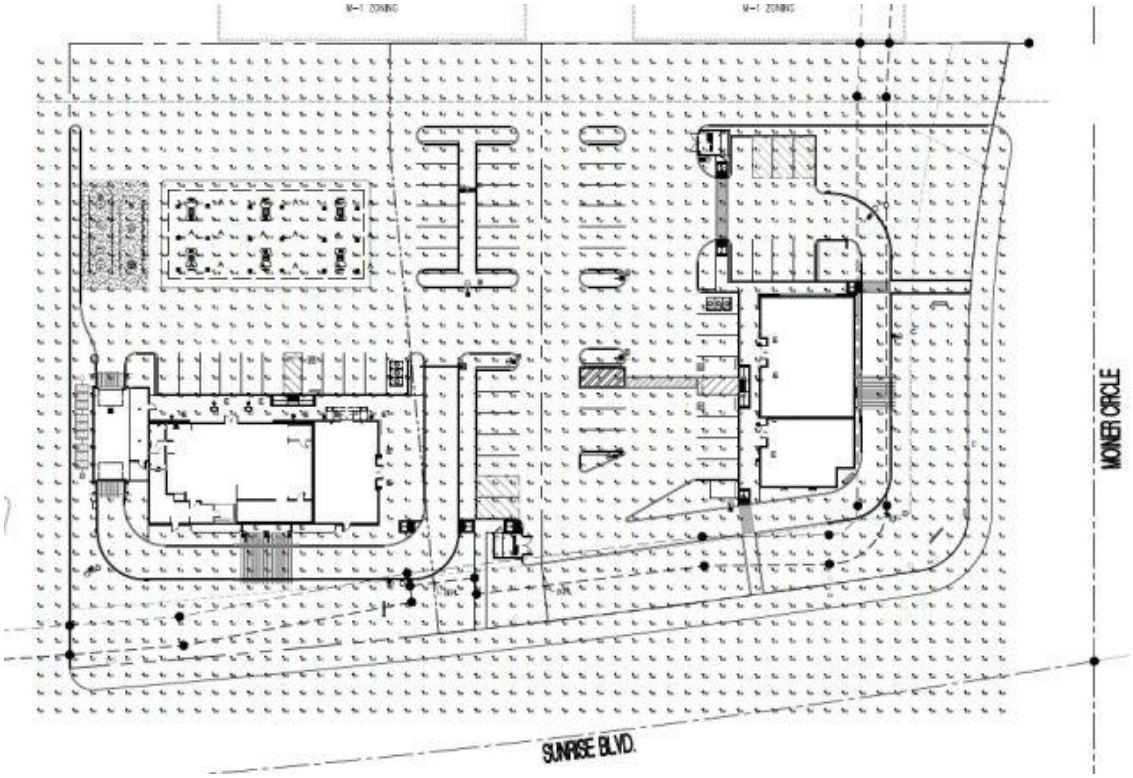
•A 25 foot wide landscape buffer along Sunrise Boulevard and Monier Circle. The landscape buffer includes several trees, shrubs and ground cover. Three pedestrian sidewalks from the public right of way to the project site are located within the buffer.
•Parking lot shade trees located throughout the parking area.
•Vines on the trellis located along the buildings.

Figure 6: Landscape Plan



Lighting Plan:
The proposed lighting plan includes parking lot lights, building lights and fuel canopy lights. **Figure 7: Lighting Plan.** The proposed lighting plan is consistent with the zoning code ordinance. As stated, the fuel canopy and parking lot lighting is located interior to the site.

Figure 7: Lighting Plan



City Design Guidelines
The proposed project has been reviewed in accordance with and consistent with the City Design Guidelines and the Parkway Corridor development standards based on the criteria below.

- The proposed buildings define and enhance street corners and edges through the building locations along the public right of ways. The fuel canopy is located interior to the site.
- The parking is located interior to the site and is not the predominant area facing the public right of way.
- Three pedestrian connections are available from the public sidewalk to the site.

- The building has been designed with architecture features on all sides of the building.
- The building elevations include various materials and colors that are consistent within the retail development.
- The building design utilizes various materials, colors, windows and landscape trellises that break-up the massing of the facade.

MAJOR DESIGN REVIEW FINDINGS:
The Major Design Review Permit, as conditioned, adheres to the approval findings defined by Zoning Code section 23.141.070, as follows:

A.Finding: The proposed project is consistent with the objectives of the General Plan, complies with applicable zoning regulations, Specific Plan provisions, and special planning area provisions, and is consistent with the applicable Rancho Cordova design guidelines.

Evidence: The proposed project is consistent with the purpose and intent of adopted policies and regulations, including the General Plan, Zoning Code, and Design Guidelines with the approved Conditional Use Permit and Administrative Use Permit. The proposed project includes a service station with a convenience store, a self-service car wash a 1,200 square foot tenant space, and a second pad building that includes a 1,100 square foot tenant space and a 1,200 square foot restaurant with a drive-through. The Administrative Use Permit is required for a restaurant use which would be permitted for the entire project. The proposed project has been designed with a consistent architecture theme. The two buildings are located along the public right of way with the fuel canopy and parking interior to the site. A landscape buffer separates the buildings from the public right of way.

B.Finding: The proposed architecture, site design, and landscape are suitable for the purposes of the building and the site and will enhance the character of the neighborhood and community.

Evidence: The proposed design includes the two buildings located along the public right of way with the fuel canopy and parking located interior to the site. The project buildings have been designed with consistent architecture features and building materials. In addition, the buildings have been designed with variation of rooflines, wall planes, a variety of building material and colors.

C.Finding: The architecture, including the character, scale, and quality of the design, relationship with the site and other buildings, building materials, screening of exterior appurtenances, exterior lighting and signing, and similar elements, establishes a clear design concept and is compatible with the character of existing or anticipated buildings on adjoining and nearby properties.

Evidence: The proposed project design, color, and materials have been designed to integrate and compliment the surrounding buildings and area. The building architecture includes parapet roofline with several pitched tower rooflines to achieve roofline variation. Building

elevations include different wall planes with pillars, trellises, windows and different colors to provide wall variation and architectural interest.

D.Finding: The proposed project will not create conflicts with vehicular, bicycle, or pedestrian transportation modes of circulation.

Evidence: The proposed project will not substantially affect current traffic flows or existing modes of transportation circulation. There is one existing right-in right-out shared driveway on Sunrise Boulevard and one proposed driveway on Monier Circle. Sunrise Boulevard is a 6-lane limited access expressway with several commercial and industrial uses within the area. Bike racks have been included in the site plan.

ENVIRONMENTAL

The project is exempt from the California Environmental Quality Act (CEQA) pursuant Section 15183, consistent with a Community Plan, General Plan, or Zoning. A description of the evidence for the exemption is found in the findings included in Attachment 1.

FISCAL IMPACT AND FUNDING SOURCE

The proposed project during construction will provide various construction jobs. Once the project is built, it is anticipated that 25 to 30 full time and part time jobs will be available. In addition, the project will provide sales tax to the City.

ATTACHMENT(S)

1. Attachment 1 - Resolution
2. Attachment 2 - Exhibit A to the Resolution Project Plans
3. Attachment 3 - Exhibit B to the Resolution COA
4. Attachment 4 - ABC Existing Licenses
5. Attachment 5 - Applicant PCN Request-final
6. Attachment 6 - 500' Radius Map & Mailing Labels

CITY OF RANCHO CORDOVA

RESOLUTION NO. XX-2020

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF RANCHO CORDOVA, STATE OF CALIFORNIA, APPROVING A CONDITIONAL USE PERMIT, ADMINISTRATIVE USE PERMIT, MAJOR DESIGN REVIEW, AND LETTER OF PUBLIC CONVENIENCE AND NECESSITY FOR THE SUNRISE PALMS PROJECT NO. DD9841

WHEREAS, Burrell Consulting Group, Inc., (hereinafter referred to as Applicant) filed an application with the City of Rancho Cordova for a Conditional Use Permit, Administrative Use Permit, Major Design Review, and Letter of Public Convenience and Necessity approval for the Sunrise Palms project; and

WHEREAS, the City Council is the appropriate authority to hear and take action on this project; and

WHEREAS, the project site located is at the northeast corner of Sunrise Boulevard and Monier Circle (3251 and 3261 Sunrise Boulevard). The proposed project includes a service station with a convenience store, a self-service car wash, a 1,200 square foot tenant space, and a second pad building that includes a 1,100 square foot tenant space and a 1,200 square foot restaurant with a drive-through. The Administrative Use Permit is required for a restaurant use which would be permitted for the entire project. The letter of Public Convenience and Necessity and Conditional Use Permit would allow for sale of beer and wine within the convenience store. The project is consistent with the General Plan and Zoning Ordinance with the approval of the Conditional Use Permit and Administrative Use Permit and would not result in any significant effects to the environment, and therefore was determined to be Exempt per California Environmental Quality Act Section 15183 (Consistent with a Community Plan, General Plan, or Zoning); and

WHEREAS, the City Council of the City of Rancho Cordova has conducted a properly noticed public hearing pursuant to Government Code section 65090 and has duly considered all written and verbal testimony presented during the hearing.

NOW, THEREFORE, BE IT HEREBY RESOLVED THE CITY COUNCIL OF THE CITY OF RANCHO CORDOVA

1. The CEQA exemption found in California Code of Regulation Title 14, sections 15183 (Consistent with the Community Plan, General Plan or Zoning) is an adequate exemptions according to the Guidelines of the California Environmental Quality Act.

A. Finding: The project has been analyzed and is exempt per California Environmental Quality Act Guidelines Section 15183 “Consistent with the Community Plan, General Plan or Zoning.”

Evidence: The proposed project site location is within an existing developed area. The proposed project along with the approval of the Conditional Use Permit and Administrative Use

Permit is consistent with the General Plan and Zoning Ordinance.

2. Approve the Conditional Use Permit subject to the Conditions of Approval attached hereto as Exhibit B, and subject to the findings as defined by Zoning Code section 23.134.070 and evidence as follows:

A. Finding: The site size, dimensions, location, topography, and access are adequate for the needs of the proposed use, considering the proposed building mass, parking, traffic, noise, vibration, exhaust/ emissions, light, glare, erosion, odor, dust, visibility, safety, and aesthetic considerations.

Evidence: The project site is an adequate size to accommodate the proposed project. The proposed building site location and design, to include access and operation has been designed to integrate into the surrounding area through building location and building architecture. The site design includes two buildings located along the two existing public right of ways. A 25 foot wide landscape buffer is located between the buildings and the public right of ways. Parking and the fuel canopy are located interior to the site. The proposed hours of operation for the service station and convenience store are 24 hours. The self-service car wash has limited hours of operation from 7 a.m. to 10 p.m. The project includes conditions to minimize any potential impacts and fulfill the design policies of the General Plan and Design Guidelines.

B. Finding: The negative impacts of the proposed use on adjacent properties and on the public can be mitigated through application of other code standards or other reasonable conditions of approval.

Evidence: The project has been reviewed and conditioned by all applicable departments and agencies to minimize any potential impacts to include lighting standards and shields and a survey for nesting birds prior to grading the site. The proposed car wash hours of operation are limited from 7 a.m. to 10 p.m. in order to reduce nighttime operation noise. In addition, the fuel canopy and parking are located interior to the site with the buildings along the public right of ways. Therefore, reducing the amount of light and noise operation from the site to the surrounding area. The proposed building size and architecture is consistent with the existing surrounding buildings. The proposed project uses; the convenience store, drive-through, and service station are consistent with the zoning ordinance development standards as stated in 23.910.020, 23.910.030, and 23.913.030. The applicant has provided additional security and control conditions in relation to the requested alcohol beverage sales. Alcoholic beverage sales at this location has been reviewed and approved by the Rancho Cordova Police Department (RCPD). RCPD did not identify any concerns regarding the proposal. The applicant will be subject to regulations from the state Alcoholic Beverage Control as part of standard licensure. Conditions of approval for the project would ensure that alcoholic beverage sales remain incidental to retail sales.

C. Finding: All required public facilities have adequate capacity to serve the proposal.

Evidence: The project has been reviewed and conditioned by all applicable departments and agencies to supply adequate facilities. All facilities to include electricity, water, and sewer are existing and in place. Therefore, all required public facilities are adequate to serve the proposed

project.

D. Finding: The project meets the requirements of the zoning code including design standards, design guidelines, and special use provisions.

Evidence: The project complies with all applicable standards and guidelines including the Zoning Ordinance 23.910.020, 23.910.030, and 23.913.030 as proposed with the Conditional Use Permit. The proposed project has been designed with a consistent architecture theme. The two buildings are located along the public right of way with the fuel canopy and parking interior to the site. A landscape buffer separates the buildings from the public right of way.

E. Finding: If structures and site plans are considered nonconforming, the elements of a project that are nonconforming have been brought into compliance with the zoning code, where feasible

Evidence: The proposed project has been reviewed in accordance with all current design standards and is in compliance with applicable sections of the zoning code.

3. To approve the Administrative Use Permit, subject to the Conditions of Approval attached hereto as Exhibit B, and subject to the findings as defined by Zoning Code section 23.125.070:

A. Finding: The proposed use is allowed with the applicable zoning district and complies with all other applicable provisions of this zoning code, municipal code, General Plan, and any applicable Specific Plans or city regulations/standards.

Evidence: The proposed restaurant use is allowed within the light industrial/manufacturing zoning district with an approved Administrative Use Permit. The proposed restaurant use is within a small retail development that includes a service station and convenience store on a main traveled corridor. The restaurant use provides additional food services to the area and is consistent with the zoning code, municipal code, General Plan and applicable city regulations/standards.

B. Finding: The site is physically suited for the type, density, and intensity of the proposed use, including access, utilities, and the absence of physical constraints, and can be conditioned to meet all related performance criterial and development standards.

Evidence: The site is physically suited for the type, density and intensity of the proposed restaurant use including two access driveways to the site. A drive through restaurant is proposed in the second building along with an additional restaurant use. The third restaurant use is located within the convenience store building. The proposed drive through restaurant use includes additional development standards as stated in 23.910.030 and is consistent with those standards.

C. Finding: The permit would not be detrimental to the public interest, health, safety, convenience, or welfare, or materially injurious to persons, property, or improvements in the vicinity in which the project is located.

Evidence: The proposed restaurant use would not be detrimental to the public interest, health or

safety or welfare, or materially injurious to persons or property in the area. Instead the proposed use will provide additional food services to an area that includes industrial employment.

4. To approve the Design Review, subject to the Minor Design Review Package (Exhibit A) and the Conditions of Approval (Exhibit B) as modified; supported by the following Findings and Evidence, as required by Zoning Code Section 23.140.070:

A. Finding: The proposed project is consistent with the objectives of the General Plan, complies with applicable zoning regulations, Specific Plan provisions, and special planning area provisions, and is consistent with the applicable Rancho Cordova Design Guidelines.

Evidence: The proposed project is consistent with the purpose and intent of adopted policies and regulations, including the General Plan, Zoning Code, and Design Guidelines with the approved Conditional Use Permit and Administrative Use Permit. The proposed project includes a service station with a convenience store, a self-service car wash, a 1,200 square foot tenant space, and a second pad building that includes a 1,100 square foot tenant space and a 1,200 square foot restaurant with a drive-through. The Administrative Use Permit is required for a restaurant use which would be permitted for the entire project. The proposed project has been designed with a consistent architecture theme. The two buildings are located along the public right of way with the fuel canopy and parking interior to the site. A landscape buffer separates the buildings from the public right of way.

B. Finding: The proposed architecture, site design, and landscape are suitable for the purposes of the building and the site and will enhance the character of the neighborhood and community.

Evidence: The proposed design includes the two buildings located along the public right of way with the fuel canopy and parking located interior to the site. The project buildings have been designed with consistent architecture features and building materials. In addition, the buildings have been designed with variation of rooflines, wall planes, a variety of building material and colors.

C. Finding: The architecture, including the character, scale, and quality of the design, relationship with the site and other buildings, building materials, screening of exterior appurtenances, exterior lighting and signing, and similar elements establishes a clear design concept and is compatible with the character of existing or anticipated buildings on adjoining and nearby properties.

Evidence: The proposed project design, color, and materials have been designed to integrate and compliment the surrounding buildings and area. The building architecture includes parapet roofline with several pitched tower rooflines to achieve roofline variation. Building elevations include different wall planes with pillars, trellises, windows and different colors to provide wall variation and architectural interest.

D. Finding: The proposed project will not create conflicts with vehicular, bicycle, or pedestrian transportation modes of circulation.

Evidence: The proposed project will not substantially affect current traffic flows or existing

modes of transportation circulation. There is one existing right-in right-out shared driveway on Sunrise Boulevard and one proposed driveway on Monier Circle. Sunrise Boulevard is a 6-lane limited access expressway with several commercial and industrial uses within the area. Bike racks have been included in the site plan.

PASSED AND ADOPTED by the City Council of the City of Rancho Cordova on the 6th day of January 2020 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

ATTEST:

David M. Sander, Mayor

Stacy Leitner, CMC
City Clerk

SITE DESCRIPTION

PROJECT DESCRIPTION:

NEW CONSTRUCTION OF A 24-HOUR 3,200 SQUARE FOOT CIRCLE-K/UNOCAL 76 MINI-MARKET CONVENIENCE STORE, SELLING GROCERIES, SNACK ITEMS AND BEVERAGES, INCLUDING BEER & WINE FOR OFF-PREMISES CONSUMPTION WITH 960 SQUARE FOOT ATTACHED DRIVE-THRU CAR WASH, 1,200 SQUARE FOOT DELI #1 AND 3,179 SQUARE FOOT FUELING CANOPY (6 MPD'S) FOR SELF-SERVICE GASOLINE SALES; NEW 2,100 SQUARE FOOT QSR #1 WITH DRIVE-THRU AND ATTACHED 1,100 SQUARE FOOT DELI #2.

ASSESSOR'S PARCEL NUMBER (APN): 072-0410-094 AND 095

UTILITY PURVEYORS

TELPHONE DISTRICT
AT&T

ELECTRICAL DISTRICT
S.M.U.D.

GAS DISTRICT
P.G. & E.

SEWER DISTRICT
SASD

WATER DISTRICT
GONDEN STATE WATER COMPANY

DRAINAGE DISTRICT
SACRAMENTO COUNTY

BUILDING DEPARTMENT NOTES

ITEMS TO BE SUBMITTED UNDER SEPARATE PERMIT:

A) LIGHT STANDARD PLANS
B) SIGN PACKAGE
C) TRASH ENCLOSURE PLANS
D) UNDERGROUND FUEL TANK DWGS.

FIRE DEPARTMENT NOTES

SYMBOLS LEGEND

DRAWING TITLE — DRAWING I.D. NUMBER; 00 / A1; SHEET DESIGNATION; SCALE: SCALE; SHEET NUMBER; DRAWING SCALE

SECTION — SECTION I.D. NUMBER; SHEET WHERE SECTION IS LOCATED

ELEVATION — SECTION I.D. NUMBER; SHEET WHERE ELEVATION IS LOCATED

REVISIONS — 2; ADDENDUM NUMBER; REVISED AREA CLOUDED

CEILING HEIGHT — 10'-0"; CEILING HEIGHT ABOVE FINISHED FLOOR

KEYED NOTES — 1; KEYED NOTE DESIGNATION ON APPLICABLE SHEET

FINISH MATERIAL — P-1 TRIM ONLY; FINISH DESIGNATION; COMMENTS, IF APPLICABLE

DETAIL (ENLARGEMENT) — AREA TO BE ENLARGED; SECTION I.D. NUMBER; >00 / A1; SHEET WHERE DETAIL IS LOCATED

DETAIL — 00 / A1; SECTION I.D. NUMBER; SHEET WHERE DETAIL IS LOCATED

ELEVATION HEIGHT — 100'-0"; T.O. SLAB; ELEVATION HEIGHT; REFERENCE POINT

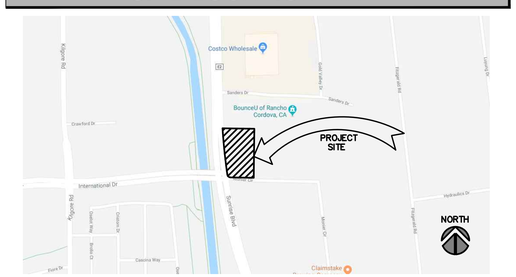
EQUIPMENT NUMBER — 100; 1 1/2" W @ 18" A.F.F.; SEE PC. NOTE #1 & #2; SEE EC. NOTE #1; SIZE, DESCRIPTION & ELEVATION; REFERENCE NOTES

DOOR NUMBER — 1; DOOR NUMBER DESIGNATION

WINDOW DESIGNATION — A; WINDOW DESIGNATION

GRAPHICS DESIGNATION — A; GRAPHICS DESIGNATION

SITE LOCATION MAP



CODES

APPLICABLE CODES:

2016 CALIFORNIA BUILDING CODE (CBC), PART 2 BASED ON 2013 EDITION OF ICC, (IBC)
2016 CALIFORNIA ELECTRICAL CODE, PART 3 BASED ON 2014 EDITION OF NFPA, (NEC)
2016 CALIFORNIA MECHANICAL CODE (CMC), PART 4 BASED ON 2014 EDITION OF IAPMO,IJ (UMC)
2016 CALIFORNIA PLUMBING CODE (CPC) BASED ON 2013 EDITION OF IAPMO, (UPC)
2016 CALIFORNIA ENERGY CODE, PART 6 BASED ON 2013
2016 CALIFORNIA FIRE CODE (CFC), PART 9 BASED ON 2015 EDITION OF ICC, (IFC)
2016 CALIFORNIA GREEN BUILDING STANDARDS CODE, PART 11 BASED ON 2013
ACCESSIBILITY CODE -AMERICAN DISABILITIES ACT
CALIFORNIA TITLE 24

PROJECT CONSULTANTS

OWNER / APPLICANT
RANCHO CORDOVA SUNRISE
RANCHO CORDOVA, CA
TEL: (951) 280-3833 EXT. 2
FAX: (951) 280-3832
CONTACT: INO CRUZ
E-MAIL: ino@jntmgmt.com

CIVIL ENGINEER

SURVEYOR

LANDSCAPE ARCHITECT

GEOTECHNICAL - SOIL ENGINEER

AERIAL PLAN

SITE DATA

PROJECT INFORMATION

SITE LOCATION
RANCHO CORDOVA SUNRISE
NEC SUNRISE BLVD & MONIER CR.
RANCHO CORDOVA, CA

SITE LEGAL INFORMATION

1. SITE

A. GROSS LOT AREA:	96,415.85 SQ. FT. (2.21 ACRES)
PAD 1	52,481.80 SQ. FT. (1.20 ACRES)
PAD 2	43,934.04 SQ. FT. (1.01 ACRES)
B. SITE DEDICATION:	34,796.33 SQ. FT. (0.80 ACRES)
C. NET LOT AREA:	194,798.67 SQ. FT. (4.47 ACRES)
D. SITE ZONING:	M-1
E. ASSESSORS PARCEL #:	072-0410-094 AND 095
F. CITY:	SACRAMENTO, CA
G FLOOD ZONE:	UNSHADED X

2. BUILDING AREA

PAD 1	
CONVENIENCE STORE	3,200 S.F.
DRIVE-THRU CARWASH	960 S.F.
DELI #1	1,200 S.F.
6-MPD'S FUELING CANOPY	3,179 S.F.
PAD 2	
QUICK SERVE RESTAURANT WITH DRIVE-THRU	2,100 S.F.
DELI #2	1,100 S.F.
TOTAL BUILDING AREA	8,560 S.F.
PERCENT OF LOT COVERAGE	8.87 %

3. BUILDINGS

	OCCUPANCY	TYPE	BUILDING HEIGHT
CONVENIENCE STORE	M	V-A (PROTECTED)	26'-0"
DELI #1	A-2	V-A (PROTECTED)	26'-0"
DRIVE - THRU CAR WASH	B	V-A (PROTECTED)	18'-0"
6 - PUMP CANOPY FUELING	M	II-B (NON COMBUSTIBLE)	19'-10"
QUICK SERVE RESTAURANT W/ DRIVE-THRU	A-2	V-A (PROTECTED)	21'-4"
DELI #2	A-2	V-A (PROTECTED)	26'-0"

4. VEHICLE PARKING

PAD 1

CONVENIENCE STORE WITH DELI AND CAR WASH
3.6/1,000 3,200 SQ. FT. = 12 STALLS
1/100 1,200 SQ. FT. = 12 STALLS

1. REQUIRED STANDARD SPACES (9'X19')	= 23 STALLS
2. REQUIRED ACCESSIBLE SPACES (9'X19')	= 1 STALL
REQUIRED PARKING SPACES	= 24 STALLS

PAD 2

QUICK SERVE RESTAURANT W/ DRIVE THRU AND DELI
1/3 SEATS 90 SEATS = 30 STALLS
1/3 SEATS 33 SEATS = 11 STALLS

1. REQUIRED STANDARD SPACES (9'X19')	= 39 STALLS
2. REQUIRED ACCESSIBLE SPACES (9'X19')	= 2 STALLS
REQUIRED PARKING SPACES	= 41 STALLS
TOTAL REQUIRED PARKING SPACES	= 65 STALLS
TOTAL PROVIDED PARKING SPACES	= 65 STALLS

5. LANDSCAPING

A. TOTAL LANDSCAPE REQUIRED	(15.00 %)	14,462.37 SQ. FT.
B. TOTAL LANDSCAPE PROVIDED	(21.11 %)	20,355.92 SQ. FT.

CONFIDENTIALITY STATEMENT:

THE RECIPIENT OF THESE MATERIALS UNDERSTANDS THAT COPYRIGHT IN THE MATERIALS IS OWNED BY BP, AND ALSO, THAT THE MATERIALS CONTAIN PRIVILEGED AND CONFIDENTIAL BUSINESS INFORMATION OF BP. ACCORDINGLY, THE RECIPIENT AGREES TO RETAIN THESE MATERIALS IN STRICT CONFIDENCE AND AGREES NOT TO DISCLOSE THESE MATERIALS TO ANY OTHER PARTY AND FURTHER AGREES NOT TO MAKE COPIES OF THE MATERIALS. THE RECIPIENT AGREES TO USE THE MATERIALS ONLY FOR THE LIMITED PURPOSE FOR WHICH BP HAS MADE THE MATERIALS AVAILABLE, AND RECIPIENT AGREES TO RETURN ALL MATERIALS TO BP EITHER UPON COMPLETION OF THE INTENDED PURPOSE OR UPON THE REQUEST OF BP, WHICHEVER COMES FIRST.

DWG. NO.	ARCHITECTURAL SITE DRAWINGS	REV.	DATE
T1-1	TITLE SHEET	-	10/28/19
AMS1-1	PRELIMINARY SITE PLAN	-	10/28/19
ASF1-1	FIRE ACCESS SITE PLAN	-	10/28/19
LSI-1	LIGHTING PROPOSAL	-	10/28/19
CIVIL DRAWINGS			
1 OF 1	NOT USED	-	10/28/19
LANDSCAPE DRAWINGS			
L1-1	NOT USED	-	10/28/19
ARCHITECTURAL DRAWINGS			
A1-1	CONVENIENCE STORE AND CARWASH FLOOR PLAN	-	10/28/19
A1-2	CONVENIENCE STORE AND CARWASH ROOF PLAN	-	10/28/19
A1-3	QUICK SERVE RESTAURANT W/ DRIVE-THRU AND DELI FLOOR PLAN	-	10/28/19
A1-4	QUICK SERVE RESTAURANT W/ DRIVE-THRU AND DELI ROOF PLAN	-	10/28/19
A2-1	CONVENIENCE STORE AND CARWASH EXTERIOR ELEVATIONS	-	10/28/19
A2-2	CONVENIENCE STORE AND CARWASH EXTERIOR ELEVATIONS	-	10/28/19
A2-3	QUICK SERVE RESTAURANT W/ DRIVE-THRU AND DELI EXT. ELEV.	-	10/28/19
A2-4	QUICK SERVE RESTAURANT W/ DRIVE-THRU AND DELI EXT. ELEV.	-	10/28/19
CANOPY DRAWINGS			
CA1-1	6 MPD CANOPY SLAB PLAN	-	10/28/19
CA2-1	6 MPD CANOPY ELEVATIONS	-	10/28/19

C-STORE DEVELOPMENT STANDARDS

23.910.020 Convenience stores.

A. Purpose. The purpose of this section is to provide additional design and operational standards for convenience stores for increased security and safety for employees and patrons of the convenience store and compatibility with surrounding businesses and residents.

B. Applicability. The regulations contained in this section shall apply to all new convenience stores as defined in RCMC 23.1104.040 (Land use definitions). The establishment of new convenience stores shall be consistent with the allowed use provisions of Article 3 of this title (Zoning Districts, Allowable Uses, and General Development Standards) and the standards contained within this section, as well as other development standards as required in the underlying zoning district. Where the standards of the underlying district conflict with the standards herein, these standards shall apply. Convenience stores shall comply with the requirements of this section.

C. Permit Requirement. A convenience store is a permitted use in the zones where a convenience store is identified as allowed by Article 3 (Zoning Districts, Allowable Land Uses, and General Development Standards), except that a use permit is required if:
1. The site is less than 500 feet from a residential zone.
2. The site is less than 1,000 feet from the property line of a K-12 public or private school.
3. The store will be open for business between the hours of 11:00 p.m. and 6:00 a.m.
4. Any alcoholic beverages are to be sold.

D. Development Standards. All convenience stores shall comply with these standards regardless of location.
1. Outdoor Lighting. Project lighting levels shall be as follows: one foot-candle of minimum maintained illumination per square foot of parking surface during business hours and 0.25 foot-candles of minimum maintained illumination per square foot of surface on any walkway, alcove, passageway, etc., from a half hour before dusk to a half hour after dawn. All light fixtures shall be vandal-resistant, and shall also comply with the requirements of RCMC 23.725.060(D) (Level of Illumination).
2. Litter Removal. Management shall be responsible for the removal of litter from adjacent property and streets that results from this project (with adjacent property owner consent).
3. Security Plan. Project shall incorporate a variety of security measures that provide safety for employees and patrons of the convenience store.
4. Windows. Window placement and design shall allow for window surveillance by employees of all outside areas from the employees' primary work positions. Windows shall be clear of any signs, merchandise, or other materials at all times from between three feet and six feet in height from ground level. No more than 15 percent of the combined total window area may be covered with signage, advertising, or other coverings, etc., as described in Chapter 23.743 RCMC (Signs).
5. Security Systems. Building security systems and employee training shall be used to resist crime attempts. The following minimum measures shall be implemented. Alternate security measures may be approved by the chief of police.

a. Employers shall provide employee training on safety and security, education on alcohol awareness, checking various forms of identification, and detecting and preventing illegal activity.
b. Store shall have an interior layout that provides visibility for the cashier into spaces such as corners or hidden areas, e.g., low display counters or two-way mirrors.
c. The cashier station shall be designed to be visible from the parking area. Windows or doors shall not be blocked with posters or signs. Counters shall be maintained free from excess displays to enhance the visibility of the cashier station.
d. A timed drop safe shall be provided adjacent to the cashier station. Premises shall be posted accordingly.
e. The installation of height tape next to the exit.

A prominently displayed video camera for identifying criminals. The video camera should include a device that records 24 hours of video directly onto a DVD/DVR recorder. The owner shall maintain a library of the recorded digital video for a minimum of seven days.

f. Inside doors to storage, utility, and office areas shall be provided with two-way mirrors to create uncertainty as to how many people are in the store and to deter criminals.
g. Required Signs. Signs shall be posted prohibiting loitering and the consumption of alcoholic beverages in the business or in the parking areas, and any other signs as required by the city. This signage requirement shall not count toward the maximum signage allowed by Chapter 23.743 RCMC (Signs). [Ord. 4-2017 § 3 (Exh. B); Ord. 12-2011 § 3 (Exh. A); Ord. 27-2008 § 1 (Exh. A § 5.4.020)].

RANCHO CORDOVA SUNRISE
NEC SUNRISE BLVD. & MONIER CR. RANCHO CORDOVA , CA

GENERAL PROJECT NOTES

1. THE WORK SHALL INCLUDE THE FURNISHING OF ALL LABOR, MATERIALS, EQUIPMENT, TRANSPORTATION AND SERVICES NECESSARY TO DO A COMPLETE AND THOROUGH JOB. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE DRAWING AND SPECIFICATIONS.
2. APPROVED PLANS SHALL BE KEPT IN A PLAN BOX AND SHALL NOT BE USED BY WORKMEN. ALL CONSTRUCTION SETS SHALL REFLECT SAME INFORMATION. CONTRACTOR SHALL MAINTAIN ONE COMPLETE SET OF PLANS ON THE PREMISES IN GOOD CONDITION AT ALL TIMES. THIS SHALL INCLUDE ALL ADDENDA AND CHANGE ORDERS.
3. WORK NOT INCLUDED IN CONTRACT: WORK NOTED "N.I.C." OR BY OTHERS ON THE DRAWINGS OR SPECIFICATIONS. IF ANY MATERIALS, EQUIPMENT OR BOTH, INDICATED "N.I.C" ARE TO BE INSTALLED BY THE CONTRACTOR, THEY WILL BE SO NOTED ON THE DRAWINGS OR SPECIFIED IN THE SPECIFICATIONS.
4. ALL OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS, SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT BEFORE PROCEEDING WITH ANY WORK SO INVOLVED. ANY WORK INSTALLED IN CONFLICT WITH THE ARCHITECTURAL DRAWINGS SHALL BE CORRECTED BY THE CONTRACTOR AT HIS/HER OWN EXPENSE, AND AT NO EXPENSE TO THE OWNER OR ARCHITECT.
5. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES AND TO PROTECT THEM FROM DAMAGE. CONTRACTOR SHALL BEAR THE EXPENSE OF REPAIR OR REPLACEMENT OF UTILITIES OR OTHER PROPERTY DAMAGED BY OPERATIONS IN CONJUNCTION WITH THE EXECUTION OF THE WORK.
6. GENERAL CONTRACTOR TO REFER TO THESE DOCUMENTS AS WELL AS SPECIFICATIONS FOR IDENTIFICATION OF ALL OWNER SUPPLIED ITEMS, ALL ITEMS NOT MARKED AS 'OWNER SUPPLIED' ARE TO BE SUPPLIED BY GENERAL CONTRACTOR. UNLESS NOTED OTHERWISE, ALL ITEMS ARE TO BE INSTALLED BY GENERAL CONTRACTOR.
7. FOR CONSTRUCTION DETAILS NOT SHOWN, USE THE MANUFACTURER'S APPROVED SHOP DRAWINGS/DATA SHEETS IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
8. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL FOOD SERVICE EQUIPMENT AND COORDINATE LOCATION OF FLOOR SINKS, FLOOR DRAINS, SLOPES/SLAB DEPRESSIONS AND RAISED CURBS, ELECTRICAL AND PLUMBING STUBOUTS, AND ALL OTHER WORK UNDER THIS SCOPE OF RESPONSIBILITY RELATED TO THIS EQUIPMENT.
9. CONTRACTOR ACKNOWLEDGES THAT HE HAS INFORMED HIMSELF FULLY REGARDING REQUIREMENTS OF DRAWINGS, SPECS, & REGULATIONS PERTAINING TO THE PROJECT. SPECIFICATIONS AND DRAWINGS ARE COMPLEMENTARY, AND WHAT IS CALLED FOR BY ONE IS AS BINDING AS IF CALLED FOR BY ALL. VISIT SITE OF WORK, COMPARE REQUIREMENTS OF DRAWINGS AND SPECIFICATIONS AND BECOME FAMILIAR WITH EXISTING CONDITIONS UNDER WHICH WORK OF CONTRACT IS TO BE PERFORMED, INCLUDING TOPOGRAPHY, APPROACHES AND IMPROVEMENTS ON OR ABOUT SITE.
10. PROTECTION OF ADJACENT BUILDINGS AND PROPERTY: EXERCISE ALL REQUIRED PRECAUTIONS NECESSARY TO PROTECT ALL BUILDINGS AND OTHER CONSTRUCTIONS ON PROPERTY ADJACENT TO THAT OF THE WORK OF THIS CONTRACT. CONTRACTOR SHALL BE RESPONSIBLE FOR, AND PAY FOR, ALL DAMAGES TO SUCH ADJACENT BUILDINGS AND CONSTRUCTION ON ACCOUNT OF OPERATIONS UNDER THE CONTRACT.
11. TESTING AGENCY SHALL OBTAIN APPROVAL FROM THE BUILDING DEPT. PRIOR TO PERFORMING TESTS. ALL TEST REPORTS SHALL BE SUBMITTED TO THE BUILDING DEPT. PRIOR TO FINAL INSPECTION.
12. THE ENGINEEER SHALL NOT HAVE CONTROL OR CHARGE OF, AND SHALL NOT BE RESPONSIBLE FOR, THE MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OF CONSTRUCTION, FABRICATION, PROCUREMENT, SHIPMENT, DELIVERY, OR INSTALLATION, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK; FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS, SUPPLIERS, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK OR TO MEET THEIR SCHEDULES FOR DELIVERY OR COMPLETION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
13. CONTRACTOR SHALL PROVIDE TEMPORARY WATER, POWER AND TOILET FACILITIES AS REQUIRED.
14. GENERAL CONTRACTOR IS RESPONSIBLE FOR RECEIVING, UNLOADING, UN-CRATING, INSTALLATION AND HOOKUP OF ALL FOOD SERVICE EQUIPMENT AND OTHER OWNER FURNISHED ITEMS.
15. GENERAL CONTRACTOR IS REQUIRED TO LABEL ALL ELECTRICAL PANELS, PLUMBING VALVES, AND ROOF TOP EQUIPMENT. PLASTIC PHENOLIC ENGRAVED PLATE SCREWED ON.
16. ALL PHASES OF THE WORK SHALL CONFORM TO THE LATEST EDITION OF THE BUILDING CODE WHICH IS CURRENTLY IN FORCE, OR THE PLANS AND SPECIFICATIONS, WHICHEVER IS THE MOST STRINGENT.
17. CONTRACTOR SHALL SUPPLY, LOCATE AND BUILD INTO THE WORK ALL INSERTS, ANCHORS, ANGLES, PLATES, OPENINGS, SLEEVES, HANGERS, SLAB DEPRESSIONS AND PITCHES AS MAY BE REQUIRED TO ATTACH AND ACCOMMODATE OTHER WORK.
18. ALL DETAILS AND SECTIONS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO ANY SIMILAR SITUATION ELSEWHERE IN THE WORK EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.
19. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO INSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION.
20. GC TO REFER TO BID DOCUMENT PACKET FOR OWNER'S SCOPE OF WORK. SAID DOCUMENT TAKES PRECEDENCE OVER ANY SCOPE THAT MAY BE PRESENTED IN THIS SET OF CONSTRUCTION DOCUMENTS OR SPECIFICATIONS.
21. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS. IF ANY DISCREPANCIES ARISE THE ARCHITECT IS TO BE NOTIFIED PRIOR TO THE COMMENCEMENT OF WORK FOR CLARIFICATION.
22. ALL DIMENSIONS INDICATED ON ARCHITECTURAL PLANS ARE TO FACE-OF-STUD OR FACE-OF-CONCRETE UNLESS NOTED OTHERWISE.
23. CONTRACTOR TO PROVIDE ALL CONSTRUCTION BARRICADES REQ. BY GOVERNING AGENCIES AND AS NOTED IN SPECS. WORKER AND PEDESTRIAN PROTECTION SHALL BE PROVIDED AND MAINTAINED BY THE GENERAL CONTRACTOR.
24. NO TRENCHES DEEPER THAN 5'-0" IN WHICH A PERSON IS TO DESCEND SHALL BE ALLOWED WITHOUT THE CONTRACTOR OBTAINING A PERMIT FROM OSHA.
25. CONTRACTOR AND ALL SUBCONTRACTORS ARE TO HOLD HARMLESS THE ARCHITECT, ENGINEERS, AND OWNER OF ALL LAWSUITS AND CLAIMS WHICH ARISE FROM WORK PERFORMED BY OR MATERIALS SUPPLIED BY THE CONTRACTOR AND THE SUBCONTRACTORS.
26. PROVIDE A PROJECT SECURITY PROGRAM TO PROTECT WORK, MATERIAL AND EQUIPMENT FROM THEFT AND VANDALISM. CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY STOLEN OR VANDALIZED WORK, MATERIAL, AND EQUIPMENT, AT NO ADDITIONAL COST TO OWNER, UNTIL COMPLETED PROJECT IS ACCEPTED BY OWNER.

POLICE DEPARTMENT NOTES

1. THE PROVIDED PHOTOMETRIC SHOWS AN ACCEPTABLE LEVEL OF LIGHTING THROUGHOUT THE PROJECT SITE.
2. ALL SITE LIGHTS SHOULD BE CONTROLLED BY PHOTOCELL AND SHOULD BE LEFT ON DURING HOURS OF DARKNESS OR DIMINISHED LIGHTING.
3. A LIGHTING LEVER OF .5 FOOT CANDLES, MINIMUM MAINTAINED AT GROUND LEVEL SHOULD BE ON AT ALL TIMES DURING NON-OPERATING NIGHT/EARLY MORNING HOURS.
4. ALL ENTRANCES TO THE PARKING AREA SHOULD BE POSTED WITH APPROPRIATE SIGNS PER 22658 (a) CVC. TO ASSIST IN REMOVING VEHICLES AT THE PROPERTY OWNER'S/MANAGER'S REQUEST.
5. NO TRESPASSING SIGNS SHOULD BE POSTED THROUGHOUT THE PROPERTY.
6. THE PROPERTY OWNERS SHOULD ALLOW MANAGERS TO HAVE SIGNING AUTHORITY ON 602 TRESPASSING NOTICES AND/PR PROPERTY OWNERS SHOULD SIGN A LETTER OF AGENCY SO THAT THE POLICE DEPARTMENT MAY ISSUE TRESPASS NOTICES.
7. THE ADDRESS NUMBER OF THE EVERY COMMERCIAL BUILDING STRUCTURE SHOULD BE ILLUMINATED DURING THE HOURS OF DARKNESS SO THAT IT IS EASILY VISIBLE FROM THE STREET. THE NUMERALS IN THESE NUMBERS SHOULD BE NO LESS THAN 4-6 INCHES IN HEIGHT AND OF A COLOR CONTRASTING WITH THE BACKGROUND.
8. ALL COIN OPERATED CAR WASH EQUIPMENT, VACUUM EQUIPMENT, CHANGE MACHINES, AND VENDING MACHINES SHOULD BE EQUIPPED WITH A CENTRAL STATION SILENT AND AUDIBLE ALARM SYSTEM.
9. ALL COIN OPERATED DEVICES SHOULD BE POSED WITH SIGNS THAT INDICATE MACHINES ARE EMPTIED ON A DAILY BASIS, AND THE APPLICANT SHOULD INSTITUTE A POLICY CONSISTENT WITH SUCH SIGNAGE.
10. DOORS WITH GLASS PANEL AND DOOR WITH GLASS PANELS ADJACENT TO THE DOOR FRAME SHOULD BE SECURED WITH BURGLARY-RESISTANT GLAZING OR THE EQUIVALENT, IF DOUBLE-CYLINDER DEADBOLT LOCKS ARE NOT INSTALLED.
11. PARKING LOTS, DRIVEWAYS, CIRCULATIONS AREAS, AISLES, PASSAGEWAYS, RECESSES, AND GROUNDS CONTIGUOUS TO BUILDINGS SHALL BE PROVIDED WITH HIGH INTENSITY DISCHARGE LIGHTING WITH SUFFICIENT WATTAGE TO PROVIDE ADEQUATE ILLUMINATION TO MAKE CLEARLY VISIBLE THE PRESENCE OF ANY PERSON ON OR ABOUT THE PREMISES DURING THE HOURS OF DARKNESS AND PROVIDE A SAFE, SECURE ENVIRONMENT FOR ALL PERSONS, PROPERTY, AND VEHICLES ON SITE. SUCH LIGHTING SHOULD BE EQUIPPED WITH VANDAL RESISTANT COVERS, A LIGHTING LEVEL OF .5 TO 1 FOOT CANDLE MINIMUM, MAINTAINED AT GROUND LEVEL, IS REQUIRED. A COMBINATION OF WALL AND POLE MOUNTED FIXTURES MAY BE USE.
12. ALL EXTERIOR DOORS SHOULD BE PROVIDED WITH A LIGHT SOURCE AND SHOULD BE ADEQUATELY ILLUMINATED AT ALL HOURS TO MAKE CLEARLY VISIBLE THE PRESENCE OF ANY PERSON ON OR ABOUT THE PREMISES AND PROVIDE ADEQUATE ILLUMINATION FOR PERSONS EXITING THE BUILDING.
13. NO ADVERTISEMENT SHOULD BE COVERING ANY OF THE WINDOWS ON THE PREMISES.

*** QSR = QUICK SERVICE RESTAURANT**

REVISION DATES	
6TH CUP SUBMITTAL	10/22/19
7TH CUP SUBMITTAL	10/28/19
8TH CUP SUBMITTAL	00/00/00
9TH CUP SUBMITTAL	00/00/00
10TH CUP SUBMITTAL	00/00/00
ISSUE DATES	
PLAN CHECK APPROVAL	00/00/00
BUILDING PERMIT ISSUE	00/00/00
BID SET PROPOSAL ISSUE	00/00/00
CONSTRUCTION SET ISSUE	00/00/00

SUBMITTAL SET 10/28/19

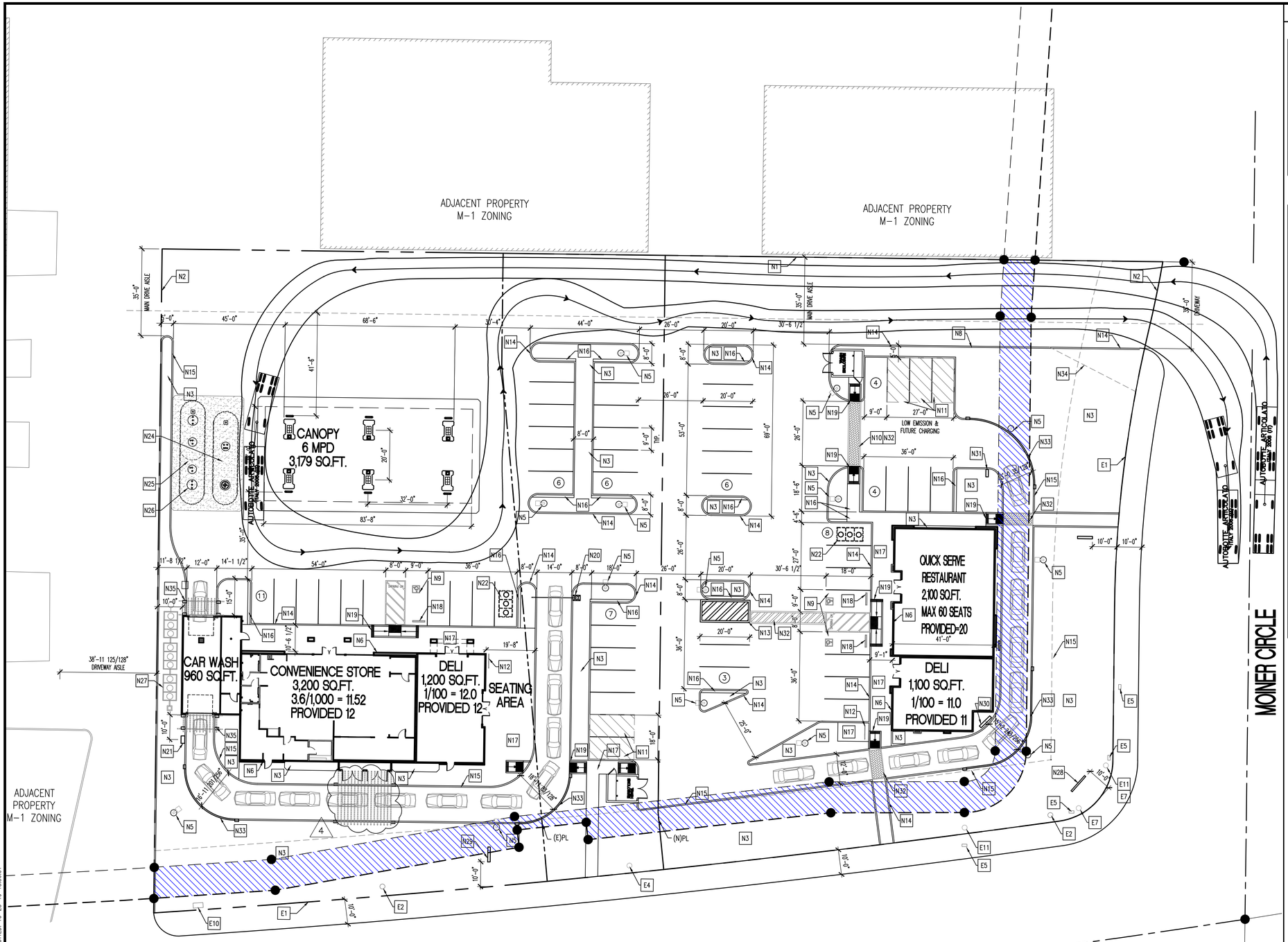
PROJECT NUMBER
0000

SHEET NUMBER
T1-1

P16-0276

RANCHO CORDOVA SUNRISE

CIRCLE K - UNOCAL 76



PRELIMINARY SITE PLAN

GRAPHIC SCALE: 1"=20'-0"

KEYNOTES

EXISTING, DEMO/REMOVED AND RELOCATED

- E1 EXISTING PROPERTY LINE
- E2 EXISTING FIRE HYDRANT – SEE LEGEND ON CIVIL PLANS
- E3 EXISTING UTILITY POLE – SEE LEGEND CIVIL PLANS
- E4 EXISTING STREET LIGHT – SEE LEGEND CIVIL PLANS
- E5 EXISTING TRAFFIC SIGNAL PULLBOX – SEE LEGEND ON CIVIL PLANS
- E6 EXISTING MANHOLE – SEE LEGEND CIVIL PLANS
- E7 EXISTING PEDESTRIAN SIGNAL – SEE LEGEND ON CIVIL PLANS
- E8 EXISTING CURB AND GUTTER – SEE CONSTRUCTION NOTES ON CIVIL PLANS
- E9 EXISTING CURB AND GUTTER DEMO – SEE CONSTRUCTION NOTES ON CIVIL PLANS
- E10 EXISTING UTILITY TRANSFORMER – SEE LEGEND CIVIL PLANS
- E11 EXISTING TRAFFIC SIGNAL – SEE LEGEND ON CIVIL PLANS

NEW / PROPOSED

- N1 PROPOSED PROPERTY LINE / RIGHT OF WAY
- N2 NEW DRIVEWAY – SEE CIVIL PLAN
- N3 LANDSCAPE AREA / PLANTING AREA – SEE LANDSCAPE PLAN
- N4 BIORETENTION BASIN – TBD
- N5 YARD LIGHT– 16' HEIGHT– COLOR: BROWN
- N6 BUILDING PERIMETER PLANTER – SEE LANDSCAPE PLAN
- N7 UTILITY TRANSFORMER – LOCATION TO BE DETERMINED BY UTILITY COMPANY
- N8 TRASH ENCLOSURE PER CITY STANDARD PLAN, SEE SHEET AS2-1
- N9 ACCESSIBLE PARKING STALL WITH RAMP PER CITY STANDARD
- N10 ACCESSIBLE PATH OF TRAVEL
- N11 LOW–EMITTING FUEL EFFICIENT VEHICLE & FUTURE CHARGING PARKING
- N12 RACK FOR 5 BICYCLE PARKING
- N13 LOADING & UNLOADING SPACES / DELIVERY / SERVICE ACCESS LANE
- N14 6" CONCRETE CURB
- N15 RED CURBING "NO PARKING FIRE LANE"
- N16 12" WIDE CONCRETE STEP OUT
- N17 CONCRETE WALKWAY
- N18 WHEEL STOP
- N19 ACCESSIBLE RAMP WITH TRUNCATED DOME
- N20 CARWASH HEIGHT CLEARANCE BAR – PROVIDE BY RYKO
- N21 CARWASH PAY POINT
- N22 UNDERGROUND GREASE INTERCEPTOR TANK – TYP. FOR RESTAURANT
- N23 EMERGENCY PUMP SHUT–OFF SWITCH
- N24 UST 20,000 GAL. UNLEADED GASOLINE
- N25 UST 12,000 GAL. DIESEL
- N26 UST 10,000 GAL. PREMIUM
- N27 CLARIFIER SYSTEM – (1) 24"X24" CATCH BASIN (2) JENSEN 1500 GAL. TANKS & (1) SAMPLE BOX
- N28 MONUMENT SIGNAGE/ TENANT SIGNAGE – TO BE SUBMITTED SEPARATELY AND PERMIT
- N29 GAS STATION MONUMENT SIGN – TO BE SUBMITTED SEPARATELY AND PERMIT
- N30 MENU BOARD – TO BE SUBMITTED SEPARATELY AND PERMIT
- N31 DRIVE–THRU ENTRY AND EXIT DIRECTIONAL SIGN – TO BE SUBMITTED SEPARATELY AND PERMIT
- N32 SIDEWALK CROSSING INTO THE DRIVE–THROUGH AISLE TO BE TEXTURED AND COLORED CONCRETE
- N33 3' LOW SOLID WALL
- N34 SIGHT DISTANCE TRIANGLE
- N35 TRELLIS AT ENTRANCE AND EXIT OF CAR WASH

139 RADIO ROAD
CORONA, CA 92879
P.O. BOX 1958
CORONA, CA 92878-1958
DIRECT (951) 280-3833
FAX (951) 280-3832

Design Methods · Absolute · CORONA CERTIFIED

RANCHO CORDOVA SUNRISE
NEC SUNRISE BLVD. & MOINER CR.
RANCHO CORDOVA, CA

PRELIMINARY
SITE PLAN

REVISION
- 08/29/17 CIRCLE K REVISION
- 09/20/19 COMMENTS
- 10/22/19 COMMENTS
- 10/28/19 COMMENTS

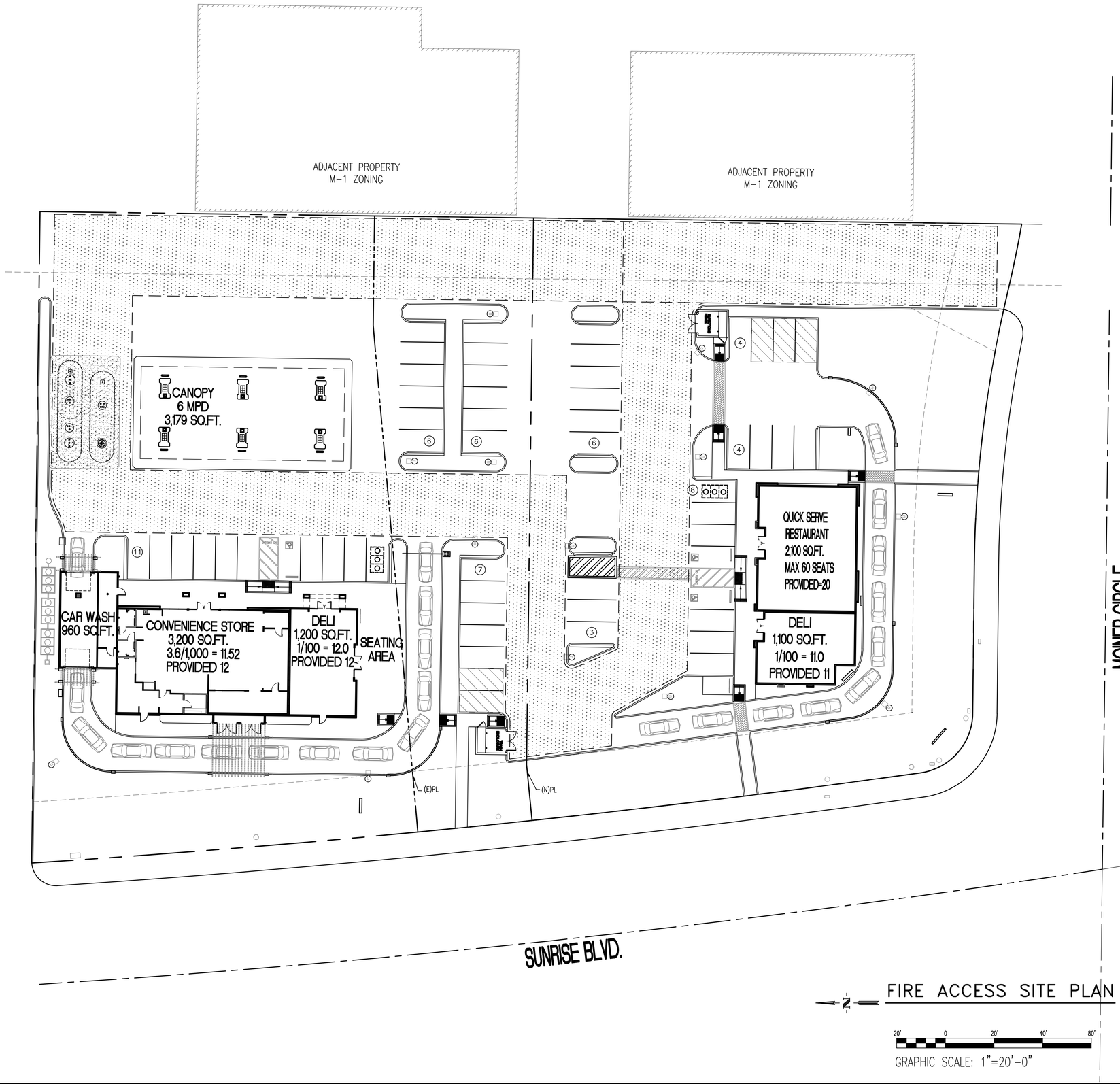
SEAL

DATE	JOB NO
01-02-19	000.000
SCALE	DRAWN BY
AS SHOWN	VA

XXXX

DRAWING NO.
AMS1-1

INFO: P:\RanchoCordova-Sunrise\CAD\AMS1-1.DWG Marisol Santana PLOTTED: 10-28-19 13:56:01



FIRE ACCESS SITE PLAN

20' 0 20' 40' 80'

GRAPHIC SCALE: 1"=20'-0"

KEYNOTE:

FIRE TRUCK ACCESS AND TRASH

FIRE ACCESS ROADWAYS SHALL BE BUILT TO BEAR A MINIMUM OF 80,000 POUNDS AND MEET THE SACRAMENTO COUNTY PUBLIC WORKS STANDARDS FOR ROADWAYS. A REPORT, PREPARED BY A REGISTERED GEOTECHNICAL ENGINEER, VERIFYING THE ABILITY OF THE ROAD TO BEAR THE REQUIRED MINIMUM WEIGHT, SHALL BE SUBMITTED WITH ANY PLAN INDICATING CONSTRUCTION OF ROADWAY. VERIFICATION OF CONSTRUCTED ROADWAY SHALL BE PROVIDED BY A REGISTERED GEOTECHNICAL ENGINEER PRIOR TO FINAL OF THE PROJECT.

139 RADIO ROAD
CORONA, CA 92879

P.O. BOX 1958
CORONA, CA 92878-1958

DIRECT (951) 280-3833
FAX (951) 280-3832

Design Methods · Absolute

FIRE ACCESS SITE PLAN

RANCHO CORDOVA SUNRISE
NEC SUNRISE BLVD. & MOINER CR.
RANCHO CORDOVA, CA

REVISION
- 08/29/17 PER PLAN CHECK
- 09/20/19 COMMENTS
- 10/22/19 COMMENTS
- 10/28/19 COMMENTS
- -
- -
- -

SEAL

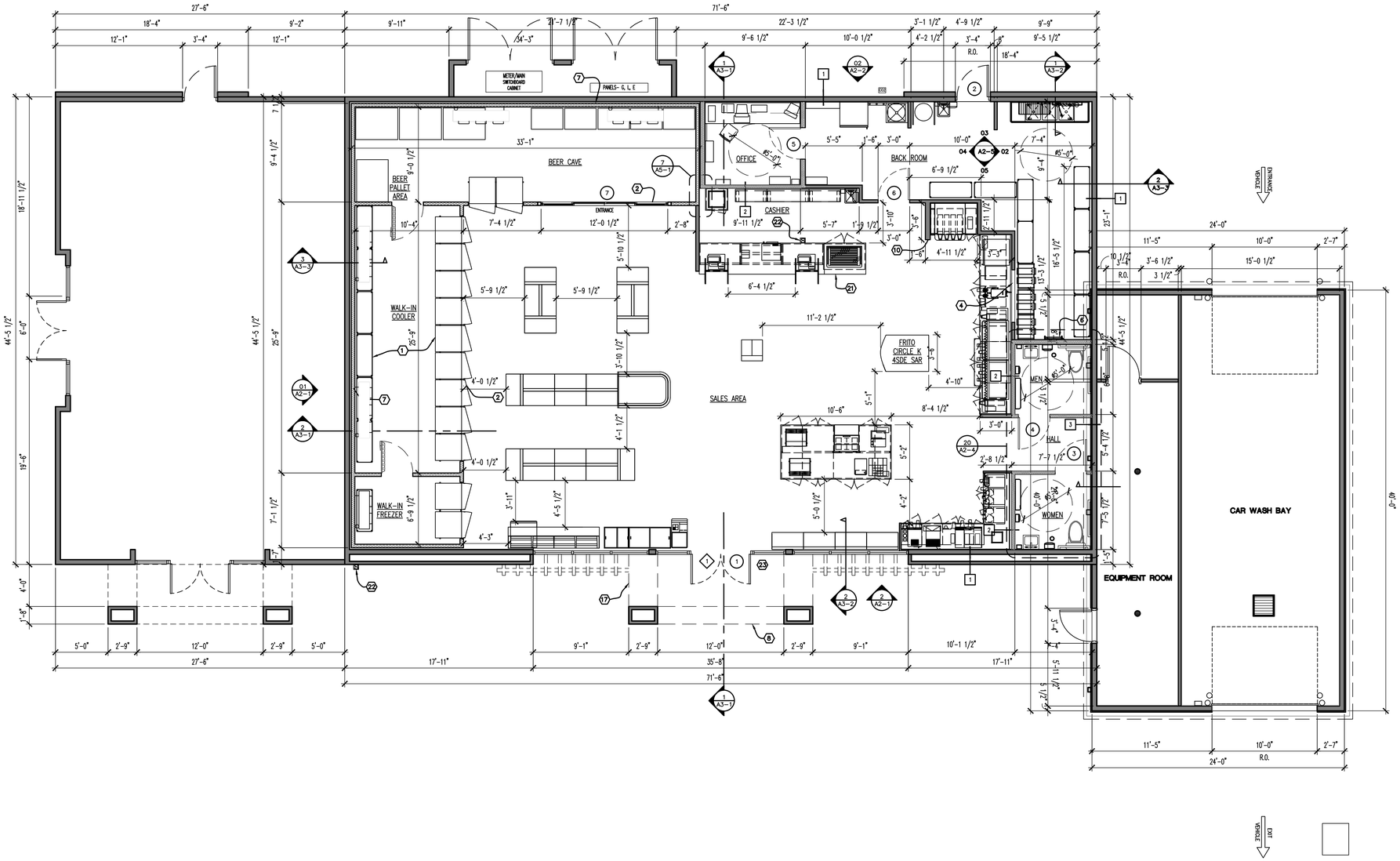
DATE	JOB NO
01-02-19	000.000
SCALE	DRAWN BY
AS SHOWN	VA

XXXX

DRAWING NO.

ASF1-1

INFO: P:\RanchoCordova-Sunrise\CUP\ASF1-1.DWG Marisol Santana PLOTTED: 10-28-19 13:56:07



CONVENIENCE STORE AND CARWASH FLOOR PLAN

SCALE: 3/16"= 1'-0"

1

139 RADIO ROAD
CORONA, CA 92879

P.O. BOX 1958
CORONA, CA 92878-1958

DIRECT (951) 280-3833
FAX (951) 280-3832

Design Methods · Absolute · CORONA CALIFORNIA

CONVENIENCE STORE AND CARWASH FLOOR PLAN

RANCHO CORDOVA SUNRISE
NEC SUNRISE BLVD. & MOINER CR.
RANCHO CORDOVA, CA

REVISION

1	08/29/17 CIRCLE K REVISION
2	09/20/19 COMMENTS
3	10/22/19 COMMENTS
4	10/28/19 COMMENTS
5	-
6	-
7	-

SEAL

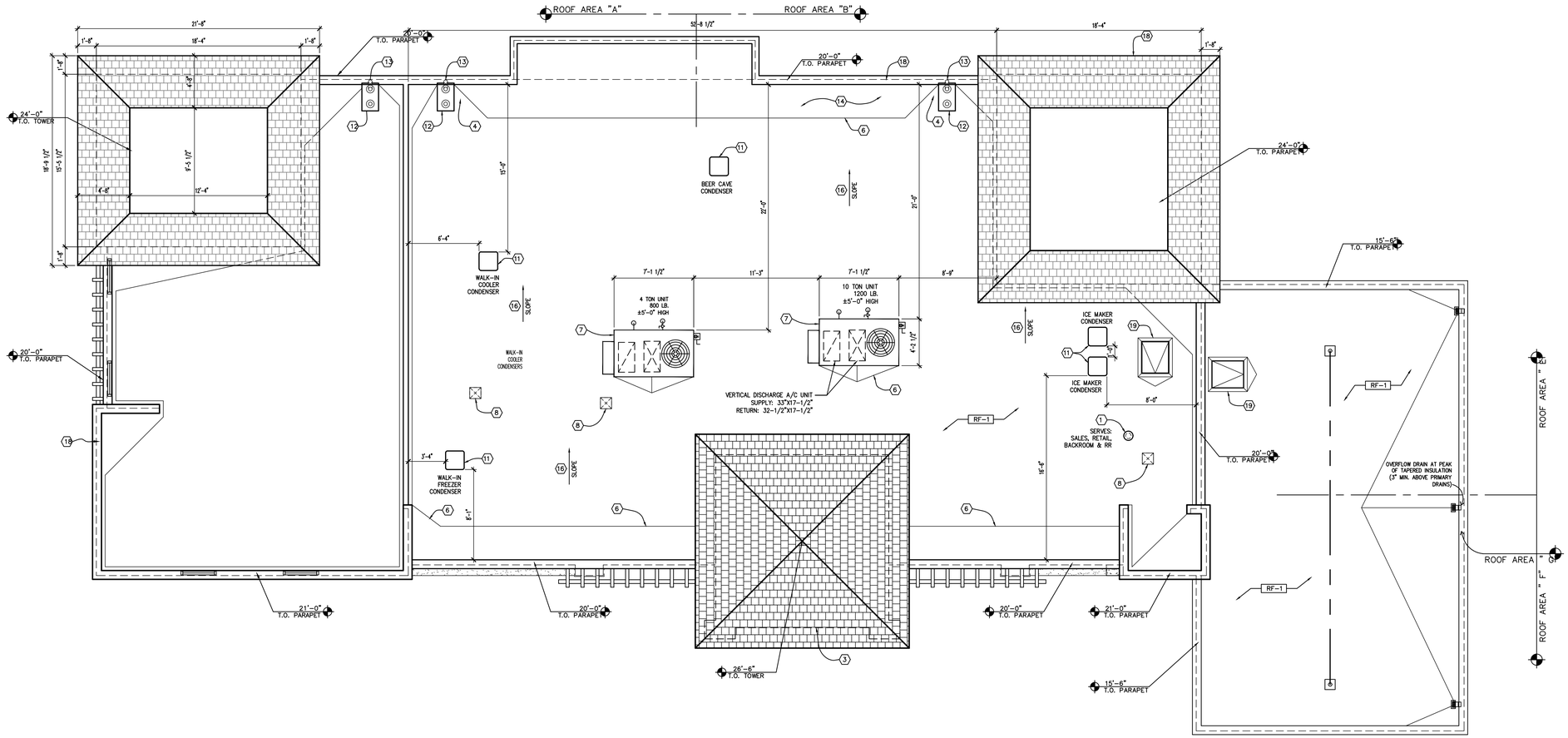
DATE	JOB NO
01-02-19	000.000
SCALE	DRAWN BY
AS SHOWN	VA

XXXX

DRAWING NO.

A1-1

INFO: P:\RanchoCordova-Sunrise\CUP\A1-1.DWG Marisol Santana PLOTTED: 10-28-19 13:55:31



CONVENIENCE STORE AND CARWASH ROOF PLAN

SCALE: 3/16"= 1'-0" | 1

139 RADIO ROAD
CORONA, CA 92879

P.O. BOX 1958
CORONA, CA 92878-1958

DIRECT (951) 280-3833
FAX (951) 280-3832

Design Methods · Absolute

CONVENIENCE STORE AND CARWASH ROOF PLAN

RANCHO CORDOVA SUNRISE
NEC SUNRISE BLVD. & MOINER CR.
RANCHO CORDOVA, CA

REVISION
- 08/29/17 DRC/L.E.V. REVISION
- 09/20/19 COMMENTS
- 10/22/19 COMMENTS
- 10/28/19 COMMENTS

SEAL

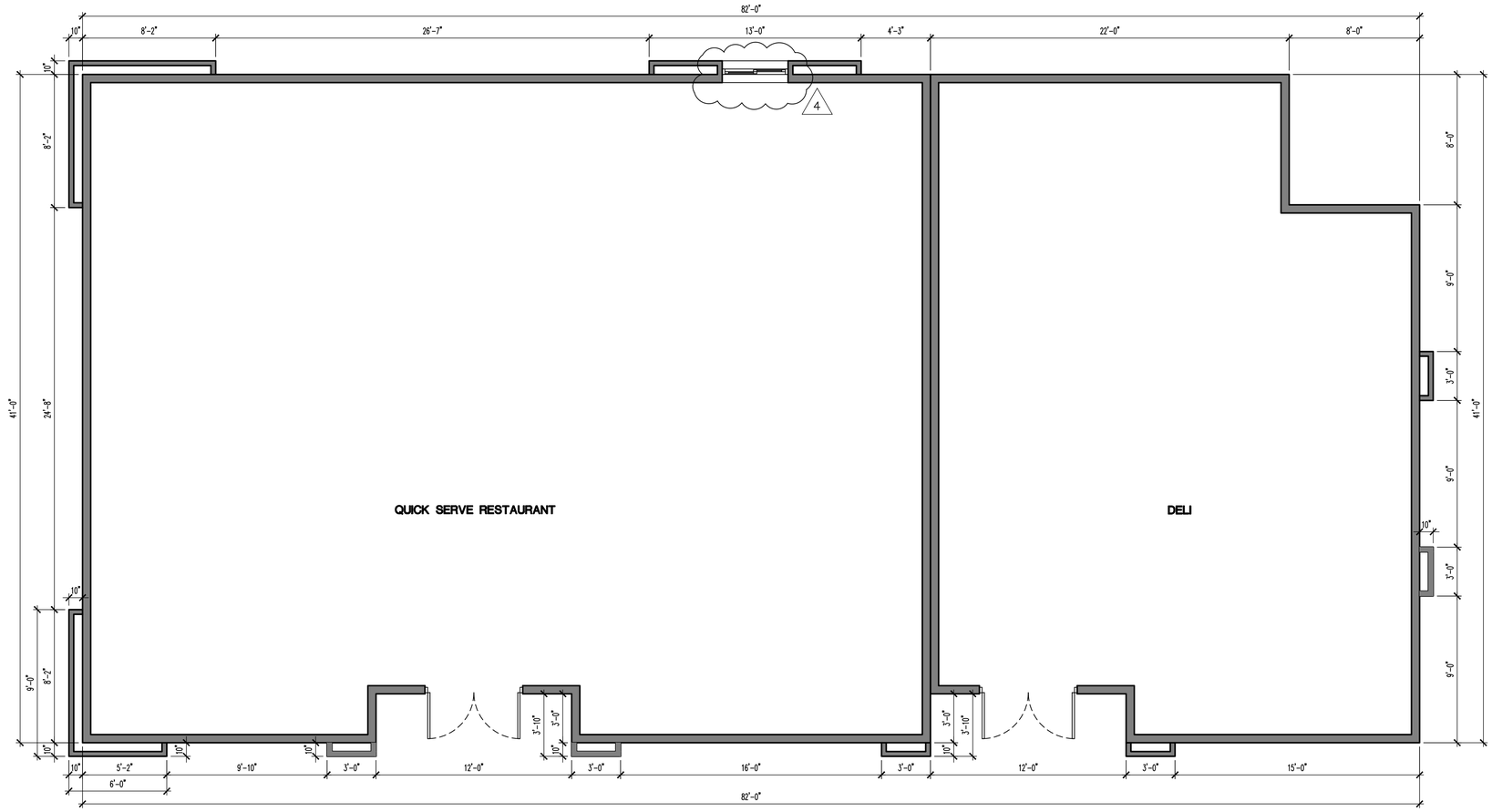
DATE	JOB NO
01-02-19	000.000
SCALE	DRAWN BY
AS SHOWN	VA

XXXX

DRAWING NO.

A1-2

INFO: P:\RanchoCordova-Sunrise\CUP\A1-2.DWG Marisol Santana PLOTTED: 10-28-19 13:55:35



QUICK SERVE RESTAURANT AND DELI FLOOR PLAN

SCALE: 1/4"= 1'-0" | 1

139 RADIO ROAD
CORONA, CA 92879
P.O. BOX 1958
CORONA, CA 92878-1958
DIRECT (951) 280-3833
FAX (951) 280-3832

Design Methods · Absolute · FUNCTIONALITY · EFFICIENCY · CREATIVITY

QUICK SERVE RESTAURANT W/ DRIVE-THRU AND DELI FLOOR PLAN

RANCHO CORDOVA SUNRISE
NEC SUNRISE BLVD. & MOINER CR.
RANCHO CORDOVA, CA

REVISION
1 - 08/29/17 CIRCLE K REVISION
2 - 09/20/19 COMMENTS
3 - 10/22/19 COMMENTS
4 - 10/28/19 COMMENTS
5 -
6 -
7 -
8 -

SEAL

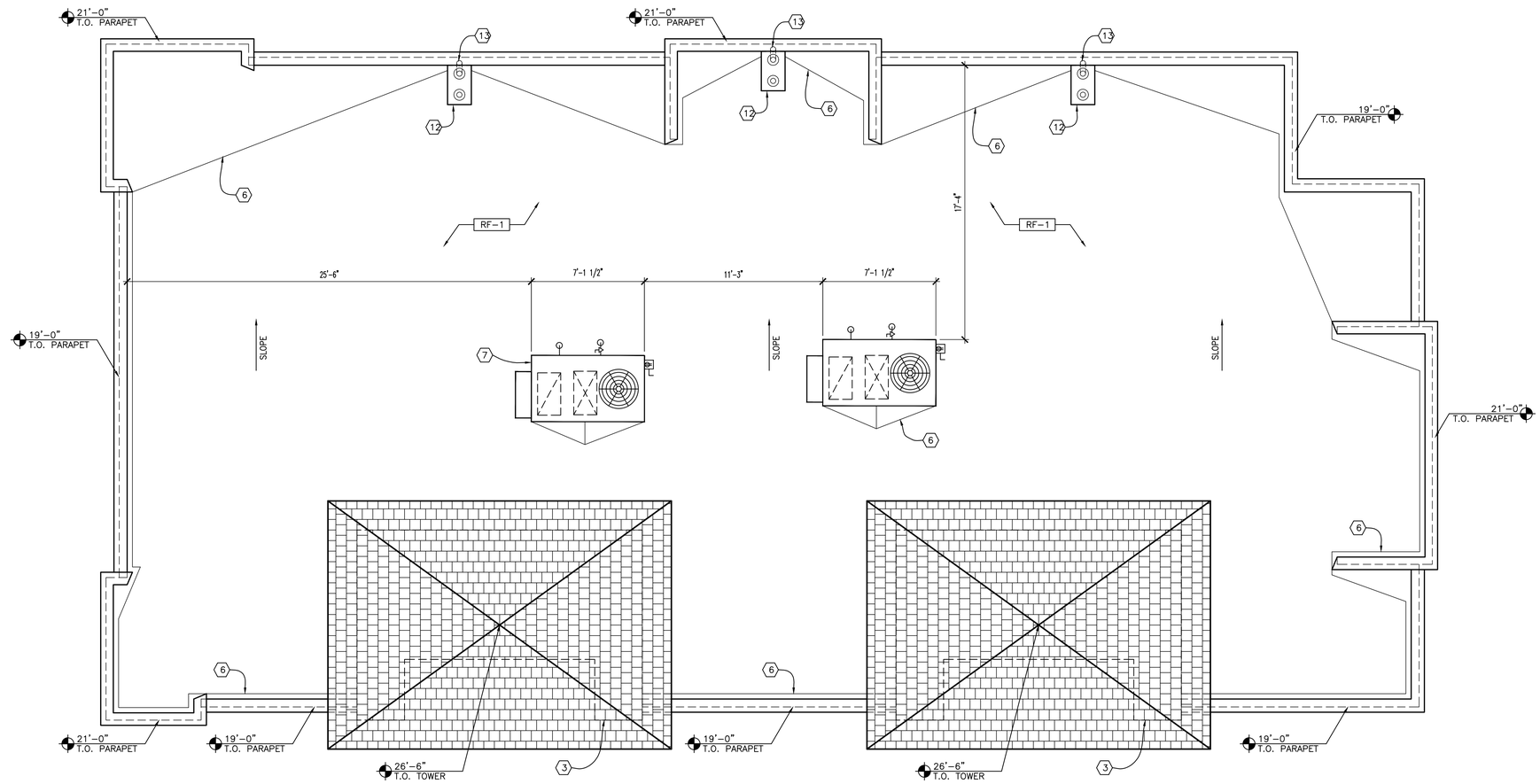
DATE	JOB NO
01-02-19	000.000
SCALE	DRAWN BY
AS SHOWN	VA

XXXX

DRAWING NO.

A1-3

PLOTTED: 10-28-19 14:34:09
INFO: P:\RanchoCordova-Sunrise\CUP\A1-3.DWG Marisol Santana



139 RADIO ROAD
CORONA, CA 92879

P.O. BOX 1958
CORONA, CA 92878-1958

DIRECT (951) 280-3833
FAX (951) 280-3832

Design Methods · Absolute · Efficiency · Energy

QUICK SERVE RESTAURANT W/ DRIVE-THRU AND DELI ROOF PLAN

RANCHO CORDOVA SUNRISE
NEC SUNRISE BLVD. & MOINER CR.
RANCHO CORDOVA, CA

REVISION	
1	08/29/17 CIRCLE K REVISION
2	09/20/19 COMMENTS
3	10/22/19 COMMENTS
4	10/28/19 COMMENTS
5	-
6	-
7	-
8	-

SEAL

DATE	JOB NO
01-02-19	000.000
SCALE	DRAWN BY
AS SHOWN	VA

XXXX

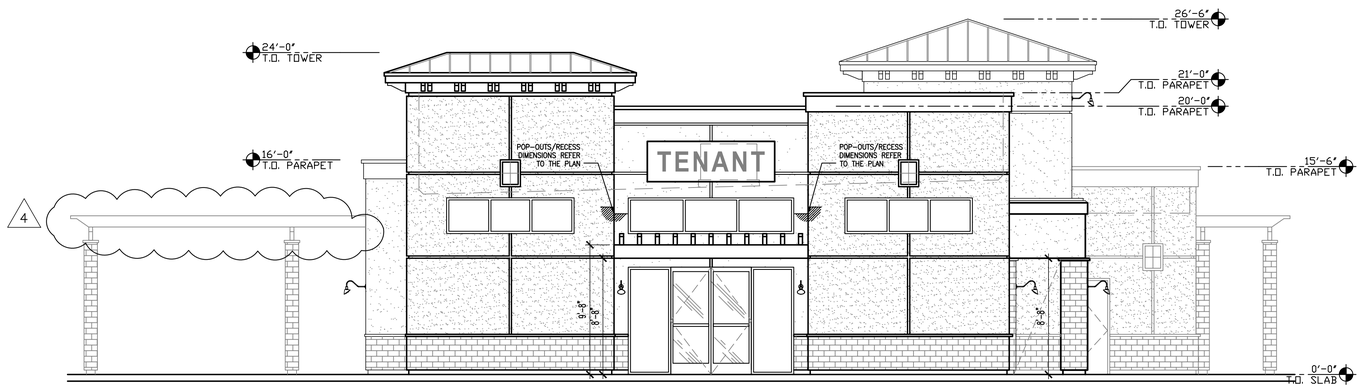
DRAWING NO.

A1-4

QUICK SERVE RESTAURANT AND DELI ROOF PLAN

SCALE: 1/4"= 1'-0" 1

INFO: P:\RanchoCordova-Sunrise\CUP\A1-4.DWG Marisol Santana PLOTTED: 10-28-19 13:55:41



SOUTH ELEVATION

SCALE: 3/16"= 1'-0" | 1

GENERAL NOTES:

A. REVEAL LOCATIONS SHOWN ARE TO BE MATCHED AS CLOSELY AS POSSIBLE. SOME VARIATION DUE TO PRODUCT LIMITATIONS WILL BE ACCEPTABLE.
B. ALL HVAC UNITS TO BE SCREENED BY HIGH PARAPET WALLS ALL AROUND THE BUILDING.

KEYED NOTES:

1. SIGNAGE BY SIGN CONTRACTOR.
2. ALUMINUM STOREFRONT SYSTEM WITH 10" BOTTOM KICK PLATE AT DOORS.
3. EXTERIOR LIGHT. REFER TO LIGHTING PLAN SHEET.
4. ROOF TOP MECHANICAL UNITS, SEE ELEVATIONS.
5. GALVANIZED STEEL COLLECTION BOX.
6. SPANDREL GLASS
7. COPING TO EXTEND DOWN FACE OF WALL.
8. WOOD TRELLIS
9. APPROXIMATE ROOF LINE, SEE ELEVATIONS.
10. 1" REVEALS IN FINISH.
11. FINISH DOOR AND FRAME AS NOTED.
12. 4" BREAK METAL BASE.
13. PRE-MANUFACTURED COPING CAP, SEE DETAIL 2/A5-1.
14. EXTERIOR MOUNTED ELECTRICAL EQUIPMENT. REFER TO ELECTRICAL SHEETS.
15. 10" SURROUND
16. 36"x 36" OPENING IN TOWER WALL (BEYOND)
17. 24" POP OUT TOWER, SEE FLOOR PLAN
18. 4" CONCRETE CURB
19. CONCRETE EXTRUDED CURB AND CONCRETE WALK.
20. 6" ROUND CONCRETE FILLED STEEL BOLLARD
21. 12"COLUMN POP OUTS, SEE FLOOR PLAN
22. 6" & 12" POP OUT, SEE FLOOR PLAN
23. ALL DOWNSPOUTS TO BE LOCATED INSIDE BUILDING WALLS. Per (COA #13) DOWN SPOUT & DRAINS. REFER TO 5/A3-3.
24. EXPOSED TIMBER

EXTERIOR FINISHES

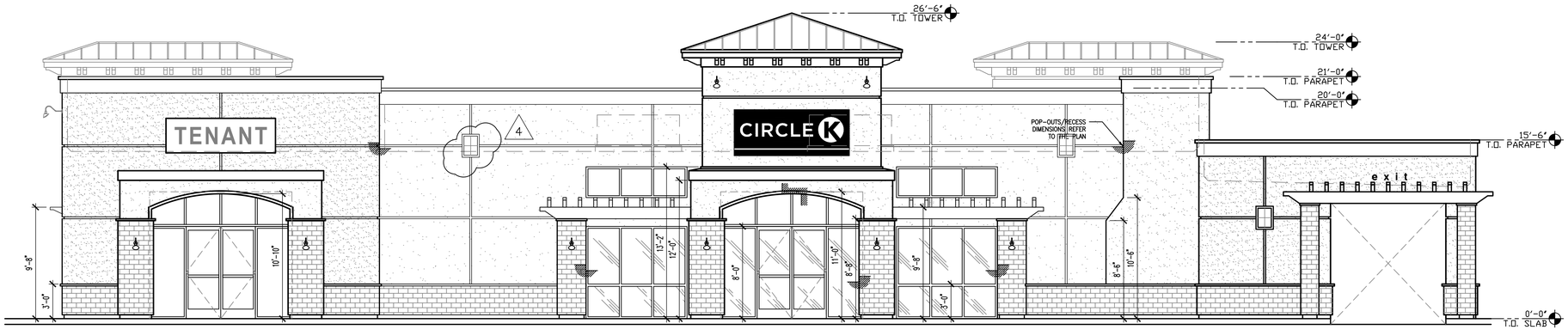
STUCCO — 7/8" STUCCO (PORTLAND CEMENT PLASTER) OVER METAL LATH PROVIDE CONTROL JOINTS AS REQUIRED

STONE — EL DORADO STONE "COUNTRY RUBBLE POLERMO"

ROOF — STANDING SEAM METAL ROOF "CENTRIA SDP 175"

EXTERIOR PAINTS

C-01 — COLOR: DUNN EDWARDS DET466 "MONARCH MIGRATION"
C-02 — COLOR: DUNN EDWARDS DEA163 "RODEO"
C-03 — COLOR: DUNN EDWARDS DEW340 "WHISPER"
C-04 — COLOR: DUNN EDWARDS DE6221 "FLINTSTONE"
C-05 — COLOR: DUNN EDWARDS DE6384 "IRON FIXTURE"
C-06 — STONE COLOR – CAMINO ADOBE "SOLANO" BY EL DORADO STONE



EAST ELEVATION

SCALE: 3/16"=1'-0" | 2

139 RADIO ROAD
CORONA, CA 92879
P.O. BOX 1958
CORONA, CA 92878-1958
DIRECT (951) 280-3833
FAX (951) 280-3832

Design Methods · Absolute

CONVENIENCE STORE AND CARWASH EXT. ELEVATIONS

RANCHO CORDOVA SUNRISE
NEC SUNRISE BLVD. & MOINER CR.
RANCHO CORDOVA, CA

REVISION
- 08/29/17 CIRCLE K REVISION
- 09/20/19 COMMENTS
- 10/22/19 COMMENTS
- 10/28/19 COMMENTS
- -
- -
- -
- -

SEAL

DATE	JOB NO
01-02-19	000.000
SCALE	DRAWN BY
AS SHOWN	VA

XXXX

DRAWING NO.

A2-1

INFO: P:\RanchoCordova-Sunrise\CUP\V2-1.DWG Marisol Santana PLOTTED: 10-28-19 13:55:45

NOTE: FINISHES AND PAINT COLOR - SEE KEYNOTES ON BLACK AND WHITE ELEVATIONS AND MATERIAL BOARD

SOUTH ELEVATION

SCALE: 1/4"= 1'-0" | 1

EAST ELEVATION

SCALE: 1/4"=1'-0" | 2

139 RADIO ROAD
CORONA, CA 92879
P.O. BOX 1958
CORONA, CA 92878-1958
DIRECT (951) 280-3833
FAX (951) 280-3832

Design Methods · Absolute · Efficiency · Energy

CONVENIENCE STORE AND CARWASH EXT. ELEVATIONS

RANCHO CORDOVA SUNRISE
NEC SUNRISE BLVD. & MOINER CR.
RANCHO CORDOVA, CA

REVISION
- 08/29/17 CIRCLE K REVISION
- 09/20/19 COMMENTS
- 10/22/19 COMMENTS
- 10/28/19 COMMENTS

SEAL

DATE	JOB NO
01-02-19	000.000
SCALE AS SHOWN	DRAWN BY VA

XXXX

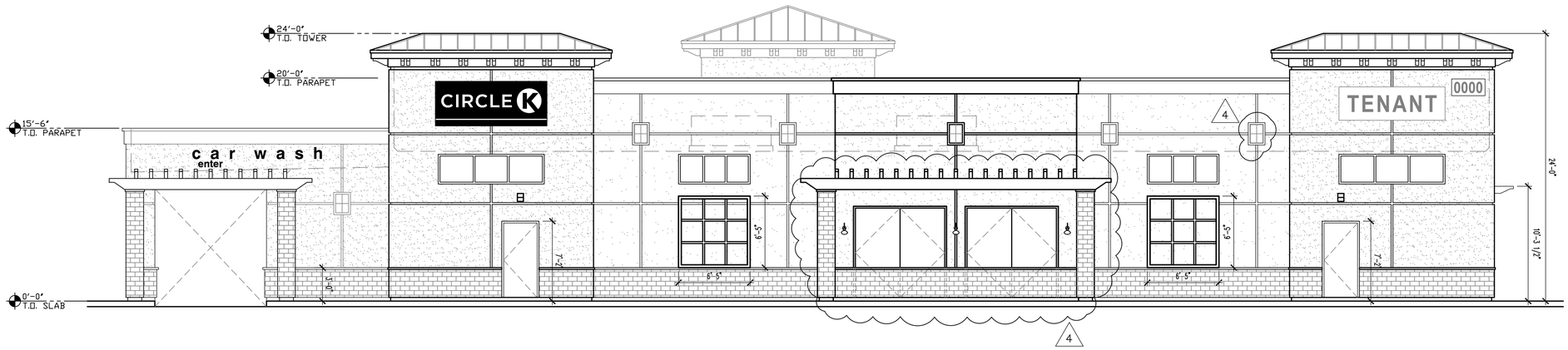
DRAWING NO.

A2-1

INFO: P:\RanchoCordova-Sunrise\CUP\Renderings\Working-Files\A2-1.DWG Marisol Santana PLOTTED: 10-28-19 10:24:20

NORTH ELEVATION

SCALE: 3/16"= 1'-0" | 1



WEST ELEVATION

SCALE: 3/16"=1'-0" | 2

GENERAL NOTES:

A. REVEAL LOCATIONS SHOWN ARE TO BE MATCHED AS CLOSELY AS POSSIBLE. SOME VARIATION DUE TO PRODUCT LIMITATIONS WILL BE ACCEPTABLE.
B. ALL HVAC UNITS TO BE SCREENED BY HIGH PARAPET WALLS ALL AROUND THE BUILDING.

KEYED NOTES:

1. SIGNAGE BY SIGN CONTRACTOR.
2. ALUMINUM STOREFRONT SYSTEM WITH 10" BOTTOM KICK PLATE AT DOORS.
3. EXTERIOR LIGHT. REFER TO LIGHTING PLAN SHEET.
4. ROOF TOP MECHANICAL UNITS, SEE ELEVATIONS.
5. GALVANIZED STEEL COLLECTION BOX.
6. SPANDREL GLASS
7. COPING TO EXTEND DOWN FACE OF WALL.
8. WOOD TRELLIS
9. APPROXIMATE ROOF LINE, SEE ELEVATIONS.
10. 1" REVEALS IN FINISH.
11. FINISH DOOR AND FRAME AS NOTED.
12. 4" BREAK METAL BASE.
13. PRE-MANUFACTURED COPING CAP, SEE DETAIL 2/A5-1.
14. EXTERIOR MOUNTED ELECTRICAL EQUIPMENT. REFER TO ELECTRICAL SHEETS.
15. 10" SURROUND
16. 36"x 36" OPENING IN TOWER WALL (BEYOND)
17. 24" POP OUT TOWER, SEE FLOOR PLAN
18. 4" CONCRETE CURB
19. CONCRETE EXTRUDED CURB AND CONCRETE WALK.
20. 6" ROUND CONCRETE FILLED STEEL BOLLARD
21. 12"COLUMN POP OUTS, SEE FLOOR PLAN
22. 6" & 12" POP OUT, SEE FLOOR PLAN
23. ALL DOWNSPOUTS TO BE LOCATED INSIDE BUILDING WALLS. Per (COA #13) DOWN SPOUT & DRAINS. REFER TO 5/A3-3.
24. EXPOSED TIMBER

EXTERIOR FINISHES

STUCCO — 7/8" STUCCO (PORTLAND CEMENT PLASTER) OVER METAL LATH PROVIDE CONTROL JOINTS AS REQUIRED

STONE — EL DORADO STONE "COUNTRY RUBBLE POLERMO"

ROOF — STANDING SEAM METAL ROOF "CENTRIA SDP 175"

EXTERIOR PAINTS

C-01 COLOR: DUNN EDWARDS DET466 "MONARCH MIGRATION"
C-02 COLOR: DUNN EDWARDS DEA163 "RODEO"
C-03 COLOR: DUNN EDWARDS DEW340 "WHISPER"
C-04 COLOR: DUNN EDWARDS DE6221 "FLINTSTONE"
C-05 COLOR: DUNN EDWARDS DE6384 "IRON FIXTURE"
C-06 STONE COLOR – CAMINO ADOBE "SOLANO" BY EL DORADO STONE

139 RADIO ROAD
CORONA, CA 92879
P.O. BOX 1958
CORONA, CA 92878-1958
DIRECT (951) 280-3833
FAX (951) 280-3832

Design Methods · Absolute · CORONA CALIFORNIA

CONVENIENCE STORE AND CARWASH EXT. ELEVATIONS

RANCHO CORDOVA SUNRISE
NEC SUNRISE BLVD. + MOINER CR.
RANCHO CORDOVA, CA

REVISION
1 - 08/29/17 CIRCLE K REVISION
2 - 09/20/19 COMMENTS
3 - 10/22/19 COMMENTS
4 - 10/28/19 COMMENTS
5 -
6 -
7 -
8 -

SEAL

DATE	JOB NO
01-02-19	000.000
SCALE	DRAWN BY
AS SHOWN	VA

DRAWING NO.
A2-2

INFO: P:\RanchoCordova-Sunrise\CUP\A2-2.DWG Marisol Santana PLOTTED: 10-28-19 13:55:48

NOTE: FINISHES AND PAINT COLOR - SEE KEYNOTES ON BLACK AND WHITE ELEVATIONS AND MATERIAL BOARD

NORTH ELEVATION

SCALE: 1/4"= 1'-0" | 1

WEST ELEVATION

SCALE: 1/4"=1'-0" | 2

139 RADIO ROAD
CORONA, CA 92879
P.O. BOX 1958
CORONA, CA 92878-1958
DIRECT (951) 280-3833
FAX (951) 280-3832

Design Methods · Absolute · Precision Results

CONVENIENCE STORE AND CARWASH EXT. ELEVATIONS

RANCHO CORDOVA SUNRISE
NEC SUNRISE BLVD. + MONER CR.
RANCHO CORDOVA, CA

REVISION
1 - 08/29/17 CIRCLE K REVISION
2 - 09/20/19 COMMENTS
3 - 10/22/19 COMMENTS
4 - 10/28/19 COMMENTS
5 -
6 -
7 -
8 -

SEAL

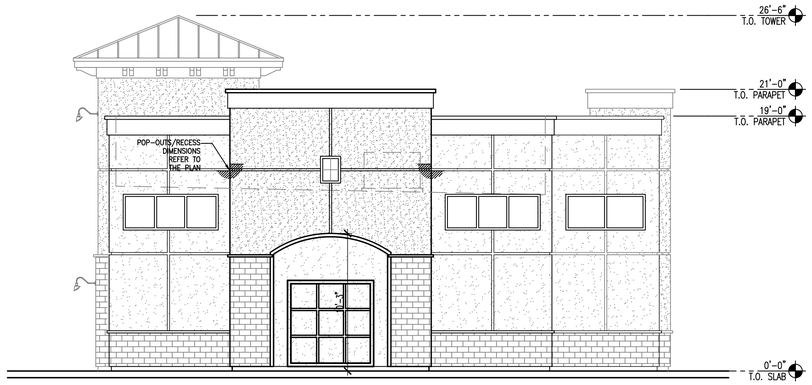
DATE	JOB NO
01-02-19	000.000
SCALE	DRAWN BY
AS SHOWN	VA

XXXX

DRAWING NO.

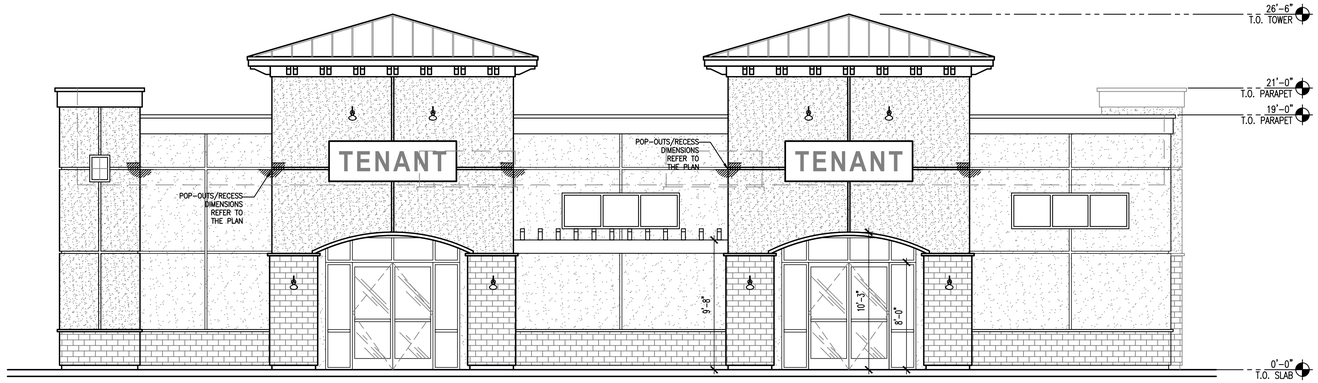
A2-2

INFO: P:\RanchoCordova-Sunrise\CUP\Renderings\Working-Files\A2-2.DWG Marisol Santana PLOTTED: 10-28-19 10:31:41



WEST ELEVATION

SCALE: 1/4" = 1'-0" | 1



NORTH ELEVATION

SCALE: 1/4"=1'-0" | 2

GENERAL NOTES:

A. REVEAL LOCATIONS SHOWN ARE TO BE MATCHED AS CLOSELY AS POSSIBLE. SOME VARIATION DUE TO PRODUCT LIMITATIONS WILL BE ACCEPTABLE.
B. ALL HVAC UNITS TO BE SCREENED BY HIGH PARAPET WALLS ALL AROUND THE BUILDING.

KEYED NOTES:

1. SIGNAGE BY SIGN CONTRACTOR.
2. ALUMINUM STOREFRONT SYSTEM WITH 10" BOTTOM KICK PLATE AT DOORS.
3. EXTERIOR LIGHT. REFER TO LIGHTING PLAN SHEET.
4. ROOF TOP MECHANICAL UNITS, SEE ELEVATIONS.
5. GALVANIZED STEEL COLLECTION BOX.
6. SPANDREL GLASS
7. COPING TO EXTEND DOWN FACE OF WALL.
8. WOOD TRELLIS
9. APPROXIMATE ROOF LINE, SEE ELEVATIONS.
10. 1" REVEALS IN FINISH.
11. FINISH DOOR AND FRAME AS NOTED.
12. 4" BREAK METAL BASE.
13. PRE-MANUFACTURED COPING CAP, SEE DETAIL 2/A5-PRE-MANUFACTURED COPING
14. EXTERIOR MOUNTED ELECTRICAL EQUIPMENT. REFER TO ELECTRICAL SHEETS.
15. 10" SURROUND
16. 36"x 36" OPENING IN TOWER WALL (BEYOND)
17. 24" POP OUT TOWER, SEE FLOOR PLAN
18. 4" CONCRETE CURB
19. CONCRETE EXTRUDED CURB AND CONCRETE WALK.
20. 6" ROUND CONCRETE FILLED STEEL BOLLARD
21. 12"COLUMN POP OUTS, SEE FLOOR PLAN
22. 6" & 12" POP OUT, SEE FLOOR PLAN
23. ALL DOWNSPOUTS TO BE LOCATED INSIDE BUILDING WALLS. Per (COA #13) DOWN SPOUT & DRAINS. REFER TO 5/A3-3.
24. EXPOSED TIMBER

EXTERIOR FINISHES

STUCCO — 7/8" STUCCO (PORTLAND CEMENT PLASTER) OVER METAL LATH PROVIDE CONTROL JOINTS AS REQUIRED

STONE — STONE COLOR – CAMINO ADOBE "SOLANO" BY EL DORADO STONE

ROOF — STANDING SEAM METAL ROOF "CENTRIA SDP 175"

EXTERIOR PAINTS

C-01 — COLOR: DUNN EDWARDS DET466 "MONARCH MIGRATION"
C-02 — COLOR: DUNN EDWARDS DEA163 "RODEO"
C-03 — COLOR: DUNN EDWARDS DEW340 "WHISPER"
C-04 — COLOR: DUNN EDWARDS DE6221 "FLINTSTONE"
C-05 — COLOR: DUNN EDWARDS DE6384 "IRON FIXTURE"
C-06 — STONE COLOR – CAMINO ADOBE "SOLANO" BY EL DORADO STONE

139 RADIO ROAD
CORONA, CA 92879
P.O. BOX 1958
CORONA, CA 92878-1958
DIRECT (951) 280-3833
FAX (951) 280-3832

Design Methods · Absolute · CORONA CALIFORNIA

QUICK SERVE RESTAURANT W DRIVE-THRU AND DELI EXT. ELEVATIONS

RANCHO CORDOVA SUNRISE
NEC SUNRISE BLVD. + MONNER DR.
RANCHO CORDOVA, CA

REVISION
1 - 08/29/17 PER CITY & PG REVISION
2 - 09/20/19 COMMENTS
3 - 10/22/19 COMMENTS
4 - 10/28/19 COMMENTS
5 -
6 -
7 -
8 -

SEAL

DATE	JOB NO
01-02-19	000.000
SCALE	DRAWN BY
AS SHOWN	VA

XXXX

DRAWING NO.

A2-3

INFO: P:\RanchoCordova-Sunrise\CUP\A2-3.DWG Marisol Santana PLOTTED: 10-28-19 13:55:52

NOTE: FINISHES AND PAINT COLOR - SEE KEYNOTES ON BLACK AND WHITE ELEVATIONS AND MATERIAL BOARD

WEST ELEVATION

SCALE: 1/4"= 1'-0" | 1

NORTH ELEVATION

SCALE: 1/4"=1'-0" | 2

139 RADIO ROAD
CORONA, CA 92879

P.O. BOX 1958
CORONA, CA 92878-1958

DIRECT (951) 280-3833
FAX (951) 280-3832

Design Methods · Absolute · CORONA CALIFORNIA

QUICK SERVE RESTAURANT W/
DRIVE-THRU AND DELI EXT. ELEVATIONS

RANCHO CORDOVA SUNRISE
NEC SUNRISE BLVD. + MOINER CR.
RANCHO CORDOVA, CA

REVISION
1 - 08/29/17 CIRCLE K REVISION
2 - 09/20/19 COMMENTS
3 - 10/22/19 COMMENTS
4 - 10/28/19 COMMENTS
5 -
6 -
7 -
8 -

SEAL

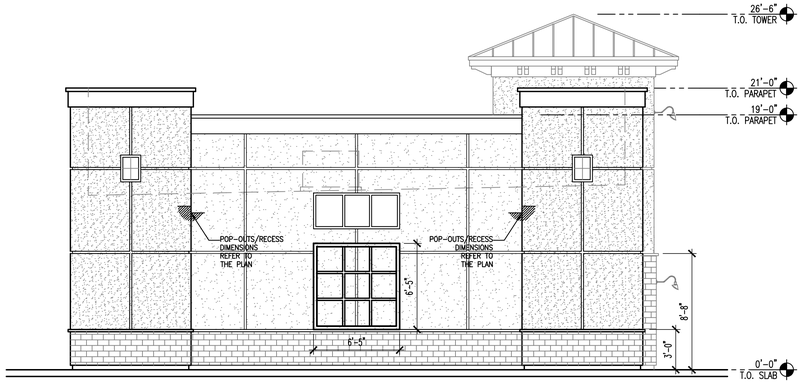
DATE	JOB NO
01-02-19	000.000
SCALE	DRAWN BY
AS SHOWN	VA

XXXX

DRAWING NO.

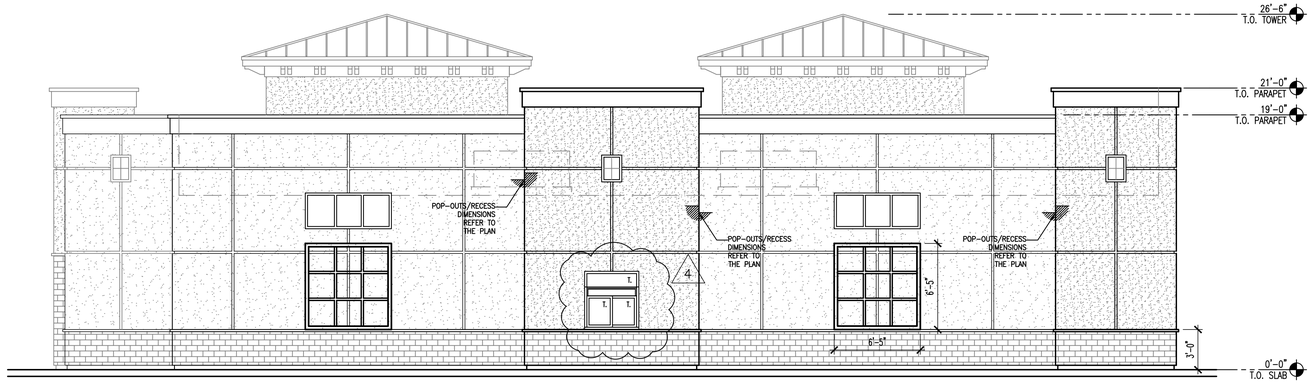
A2-3

INFO: P:\RanchoCordova-Sunrise\CUP\Renderings\Working-Files\A2-3.DWG Marisol Santana PLOTTED: 10-28-19 10:58:09



EAST ELEVATION

SCALE: 1/4"= 1'-0" | 1



SOUTH ELEVATION

SCALE: 1/4"=1'-0" | 2

GENERAL NOTES:

A. REVEAL LOCATIONS SHOWN ARE TO BE MATCHED AS CLOSELY AS POSSIBLE. SOME VARIATION DUE TO PRODUCT LIMITATIONS WILL BE ACCEPTABLE.
B. ALL HVAC UNITS TO BE SCREENED BY HIGH PARAPET WALLS ALL AROUND THE BUILDING.

KEYED NOTES:

1. SIGNAGE BY SIGN CONTRACTOR.
2. ALUMINUM STOREFRONT SYSTEM WITH 10" BOTTOM KICK PLATE AT DOORS.
3. EXTERIOR LIGHT. REFER TO LIGHTING PLAN SHEET.
4. ROOF TOP MECHANICAL UNITS, SEE ELEVATIONS.
5. GALVANIZED STEEL COLLECTION BOX.
6. SPANDREL GLASS
7. COPING TO EXTEND DOWN FACE OF WALL.
8. WOOD TRELLIS
9. APPROXIMATE ROOF LINE, SEE ELEVATIONS.
10. 1" REVEALS IN FINISH.
11. FINISH DOOR AND FRAME AS NOTED.
12. 4" BREAK METAL BASE.
13. PRE-MANUFACTURED COPING CAP, SEE DETAIL 2/A5-PRE-MANUFACTURED COPING
14. EXTERIOR MOUNTED ELECTRICAL EQUIPMENT. REFER TO ELECTRICAL SHEETS.
15. 10" SURROUND
16. 36"x 36" OPENING IN TOWER WALL (BEYOND)
17. 24" POP OUT TOWER, SEE FLOOR PLAN
18. 4" CONCRETE CURB
19. CONCRETE EXTRUDED CURB AND CONCRETE WALK.
20. 6" ROUND CONCRETE FILLED STEEL BOLLARD
21. 12"COLUMN POP OUTS, SEE FLOOR PLAN
22. 6" & 12" POP OUT, SEE FLOOR PLAN
23. ALL DOWNSPOUTS TO BE LOCATED INSIDE BUILDING WALLS. Per (COA #13) DOWN SPOUT & DRAINS. REFER TO 5/A3-3.
24. EXPOSED TIMBER

EXTERIOR FINISHES

STUCCO	7/8" STUCCO (PORTLAND CEMENT PLASTER) OVER METAL LATH PROVIDE CONTROL JOINTS AS REQUIRED
STONE	STONE COLOR – CAMINO ADOBE "SOLANO" BY EL DORADO STONE
ROOF	STANDING SEAM METAL ROOF "CENTRIA SDP 175"

EXTERIOR PAINTS

C-01	COLOR: DUNN EDWARDS DET466 "MONARCH MIGRATION"
C-02	COLOR: DUNN EDWARDS DEA163 "RODEO"
C-03	COLOR: DUNN EDWARDS DEW340 "WHISPER"
C-04	COLOR: DUNN EDWARDS DE6221 "FLINTSTONE"
C-05	COLOR: DUNN EDWARDS DE6384 "IRON FIXTURE"
C-06	STONE COLOR – CAMINO ADOBE "SOLANO" BY EL DORADO STONE

139 RADIO ROAD
CORONA, CA 92879
P.O. BOX 1958
CORONA, CA 92878-1958
DIRECT (951) 280-3833
FAX (951) 280-3832

Design Methods · Architecture · Corona, CA

QUICK SERVE RESTAURANT W DRIVE-THRU AND DELI EXT. ELEVATIONS

RANCHO CORDOVA SUNRISE
NEC SUNRISE BLVD. + MONIER CR.
RANCHO CORDOVA, CA

REVISION
- 08/29/17 PER PLAN CK REVISION
- 09/20/19 COMMENTS
- 10/22/19 COMMENTS
- 10/28/19 COMMENTS
- -
- -
- -
- -

SEAL

DATE	JOB NO
01-02-19	000.000
SCALE	DRAWN BY
AS SHOWN	VA

XXXX

DRAWING NO.

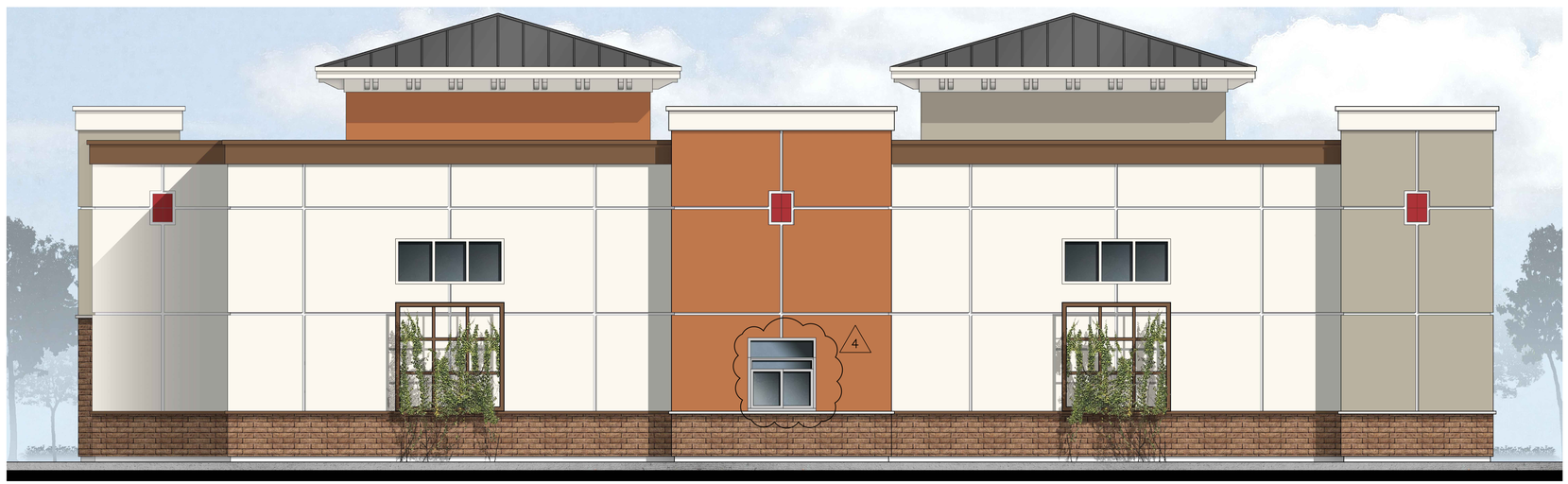
A2-4

INFO: P:\RanchoCordova-Sunrise\CUP\A2-4.DWG Marisol Santana PLOTTED: 10-28-19 14:30:27

NOTE: FINISHES AND PAINT COLOR - SEE KEYNOTES ON BLACK AND WHITE ELEVATIONS AND MATERIAL BOARD

EAST ELEVATION

SCALE: 1/4"= 1'-0" | 1



SOUTH ELEVATION

SCALE: 1/4"=1'-0" | 2

139 RADIO ROAD
CORONA, CA 92879

P.O. BOX 1958
CORONA, CA 92878-1958

DIRECT (951) 280-3833
FAX (951) 280-3832

Design Methods · Absolute · CORONA CALIFORNIA

QUICK SERVE RESTAURANT W/
DRIVE-THRU AND DELI EXT. ELEVATIONS

RANCHO CORDOVA SUNRISE
NEC SUNRISE BLVD. + MOINER CR.
RANCHO CORDOVA, CA

REVISION
1 - 08/29/17 CIRCLE K REVISION
2 - 09/20/19 COMMENTS
3 - 10/22/19 COMMENTS
4 - 10/28/19 COMMENTS
5 -
6 -
7 -

SEAL

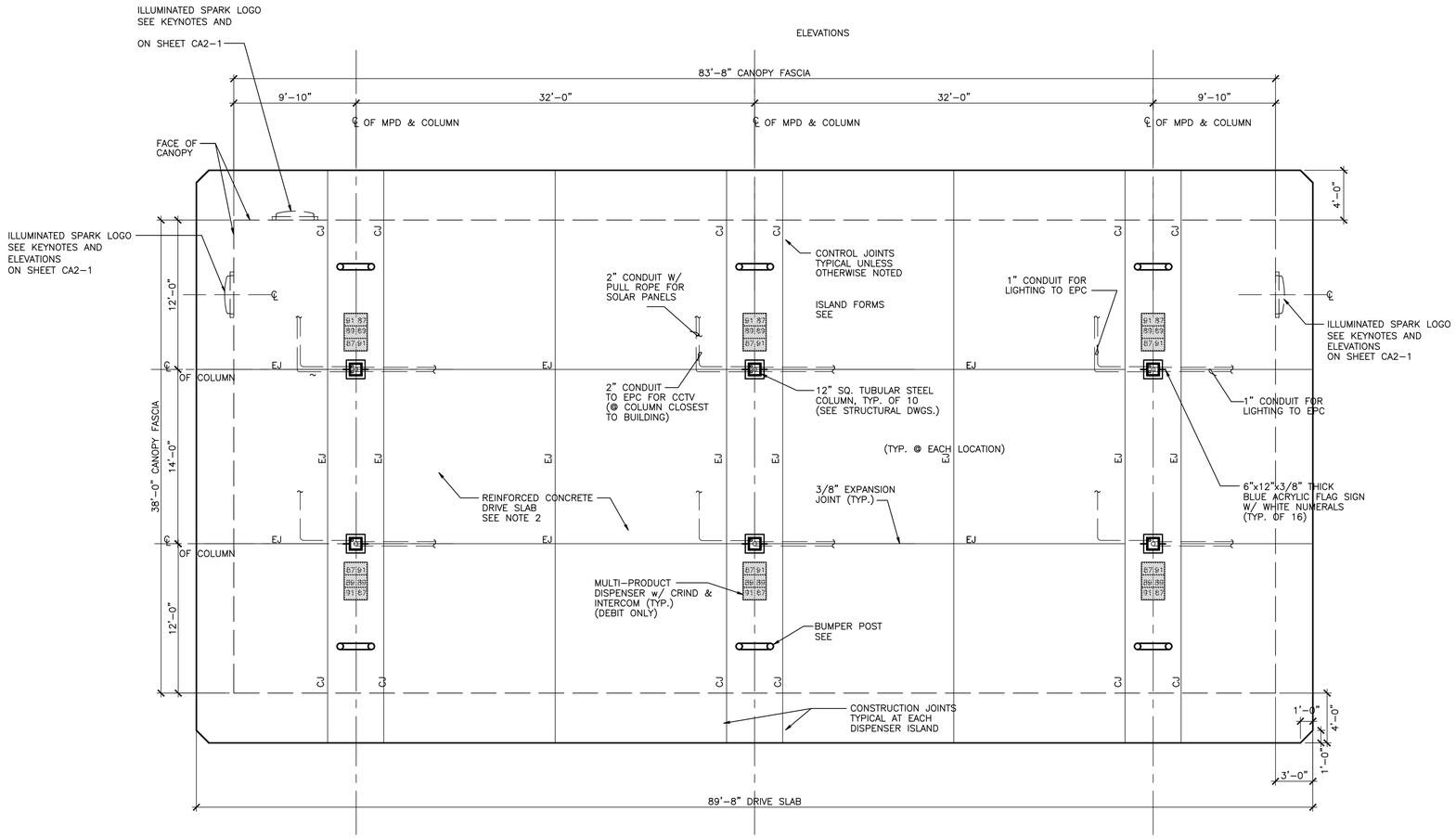
DATE	JOB NO
01-02-19	000.000
SCALE	DRAWN BY
AS SHOWN	VA

XXXX

DRAWING NO.

A2-4

INFO: P:\RanchoCordova-Sunrise\CUP\Renderings\Working-Files\A2-4.DWG Marisol Santana PLOTTED: 10-28-19 14:29:24



01 CANOPY SLAB PLAN
SCALE: 3/16"=1'-0"

Notes:

1. DOWNSPOUTS ARE DESIGNED TO BE TIGHTLINED TO THE SITES UNDERGROUND STORM DRAINAGE SYSTEM.
2. DRIVE SLAB SHALL BE 6" THICK REINFORCED CONCRETE w/ #4 at 18"o.c. EACH WAY OVER 4" CRUSHED ROCK OR AS SPECIFIED IN SOILS REPORT. FINISH SHALL BE A MEDIUM BROOM PERPENDICULAR TO ISLAND LAYOUT w/ EXPANSION AND CONTROL JOINTS AS SHOWN.
3. CANOPY CONTRACTOR SHALL PROVIDE DOWNPOUTS AND CONDUITS FOR LIGHTING, SIGN, CCTV, SOLAR AND SATELITE IN COLUMNS WHERE SPECIFIED. COORDINATE WITH GENTERAL CONTRACTOR FOR EXACT LOCATION OF CONDUITS, AND HAND HOLES PRIOR TO FABRICATION.
4. EACH PAIR OF ISLANDS HEIGHTS SHALL BE THE SAME.
5. ISLAND FORMS SHALL BE PAINTED BLACK.
6. PAYMENT ISLAND CASHIER (P.I.C.) UNITS ARE BASED ON GEN III FRONT LOAD DOUBLE SIDED UNITS. CASH ACCEPTING UNITS ONLY.
7. SEE SHEET CA1-2 AND ELECTRICAL DRAWINGS FOR ADDITIONAL NOTES AND IN COLUMN ELECTRICAL CONDUIT INFORMATION.
8. GRADE BREAKS AT CONCRETE DRIVE SLAB SHALL OCCUR WITHIN DRIPLINE OF CANOPY.

139 RADIO ROAD
CORONA, CA 92879
P.O. BOX 1958
CORONA, CA 92878-1958
DIRECT (951) 280-3833
FAX (951) 280-3832

Design Methods · Absolute

6 MPD CANOPY SLAB PLAN

RANCHO CORDOVA SUNRISE
NEC SUNRISE BLVD. & MOINER CR.
RANCHO CORDOVA, CA

REVISION
- 08/29/17 CIRCLE K REVISION
- 09/20/19 COMMENTS
- 10/22/19 COMMENTS
- 10/28/19 COMMENTS

SEAL

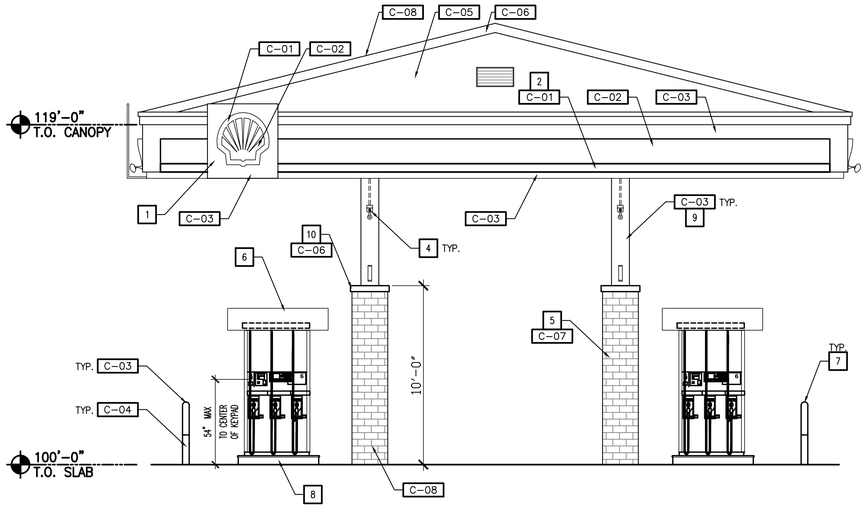
DATE	JOB NO
01-02-19	000.000
SCALE	DRAWN BY
AS SHOWN	VA

XXXX

DRAWING NO.

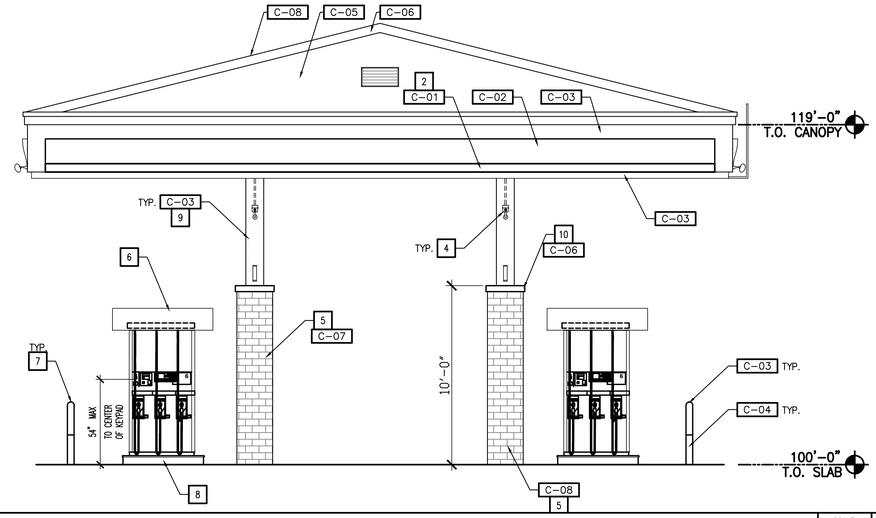
CA1-1

INFO: P:\RanchoCordova-Sunrise\CA\PY\CA1-1.DWG Marisol Santana PLOTTED: 10-28-19 13:56:11



NORTH ELEVATION

SCALE: 1/4" = 1'-0" | 1



SOUTH ELEVATION

SCALE: 1/4" = 1'-0" | 2

GENERAL NOTES

A. SURFACE COLORS FOR MOST ELEMENTS MUST HAVE SATIN FINISH INSTEAD OF HIGH GLOSS.

B. CONTACT REPRESENTATIVE TO OBTAIN CONTROL CHIPS FOR PRECISE COLOR MATCHING.

C. THE CANOPY CEILING DECK SURFACE IS TO BE PAINTED WHITE.

KEY NOTES

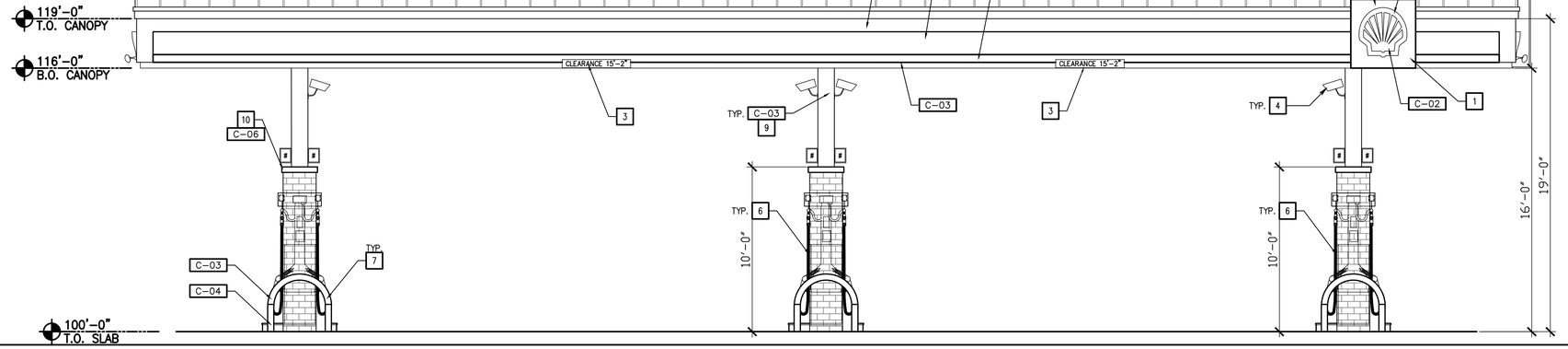
1. ILLUMINATED CANOPY LOGO
2. TRANSLUCENT RED LIGHTING TUBE BAR – ILLUMINATED HALO
3. CANOPY SIGN TO INDICATE 16'-0" CLEARANCE, CENTERED BETWEEN COLUMNS OF EACH DRIVEWAY.
4. CCTV VIDEO CAMERAS, LOCATIONS TO BE DETERMINED BY SECURITY CONTRACTOR.
5. EVERY CANOPY COLUMN TO INCLUDE HEALTH AND SAFETY WARNING DECAL WITH ADA NOTICE.
6. GASOLINE DISPENSER ON RAISED PUMP ISLAND.
7. BOLLARD
8. ISLAND FORM
9. CANOPY COLUMN
10. CANOPY COLUMN CAP FACIA

EXTERIOR PAINTS

- C-01 SHELL RED SATIN FINISH
- C-02 SHELL YELLOW SATIN FINISH
- C-03 SHELL WHITE SATIN FINISH
- C-04 GRAY SATIN FINISH
- C-05 COLOR: DUNN EDWARDS DEW340 "WHISPER"
- C-06 COLOR: DUNN EDWARDS DEA163 "RODEO"
- C-07 STONE COLOR – CAMINO ADOBE "SOLANO" BY EL DORADO STONE
- C-08 STANDING SEAM METAL ROOF "CENTRIA SDP 175" 3

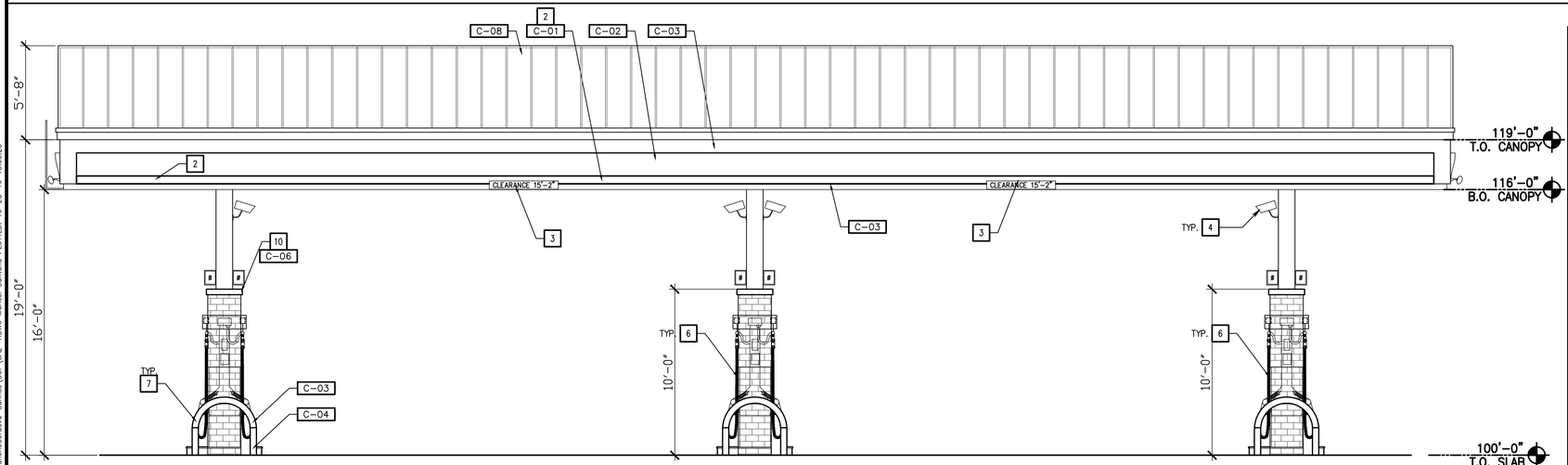
139 RADIO ROAD
CORONA, CA 92879
P.O. BOX 1958
CORONA, CA 92878-1958
DIRECT (951) 280-3833
FAX (951) 280-3832

Design Methods · Albuquerque · Corona



EAST ELEVATION

SCALE: 1/4" = 1'-0" | 3



WEST ELEVATION

SCALE: 1/4" = 1'-0" | 4

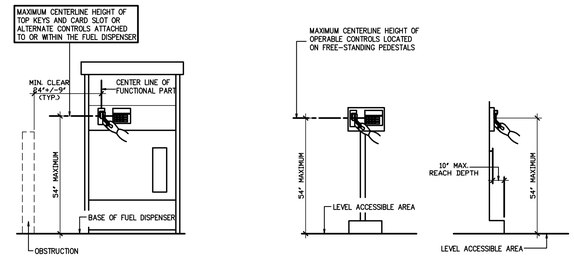


FIGURE 11C-1
CARD READERS MOUNTED IN FUEL DISPENSERS

FIGURE 11C-2
CARD READERS LOCATED ON FREE-STANDING PEDESTALS

DISPENCER ADA CREDIT CARD MACHINE DETAILS

SCALE: 1/4" = 1'-0" | 5

REVISION
1 - 08/29/17 CIRCLE K REVISION
2 - 09/20/19 COMMENTS
3 - 10/22/19 COMMENTS
4 - 10/28/19 COMMENTS
5 -
6 -
7 -
8 -

SEAL

6 MPD CANOPY ELEVATIONS

RANCHO CORDOVA SUNRISE
NEC SUNRISE BLVD. & MOINER CR.
RANCHO CORDOVA, CA

DATE	JOB NO
01-02-19	000.000
SCALE	DRAWN BY
AS SHOWN	VA

XXXX

DRAWING NO.

CA2-1

INFO: P:\RanchoCordova-SunriseX,CUP\CA2-1.DWG Marisol Santana PLOTTED: 10-28-19 13:55:23

NORTH ELEVATION

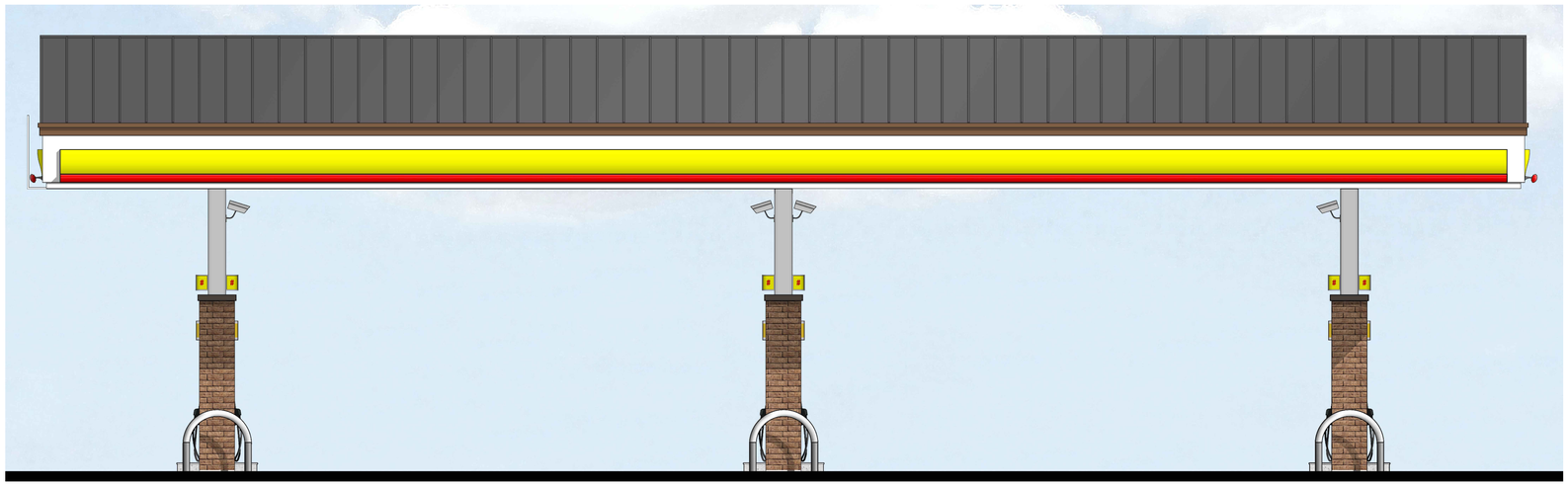
SCALE: 1/4" = 1'-0" | 1

SOUTH ELEVATION

SCALE: 1/4" = 1'-0" | 1

EAST ELEVATION

SCALE: 1/4" = 1'-0" | 2



WEST ELEVATION

SCALE: 1/4" = 1'-0" | 3

139 RADIO ROAD
CORONA, CA 92879

P.O. BOX 1958
CORONA, CA 92878-1958

DIRECT (951) 280-3833
FAX (951) 280-3832

Design Methods · Absolute

6 MPD CANOPY ELEVATIONS

RANCHO CORDOVA SUNRISE
NEC SUNRISE BLVD. & MOINER CR.
RANCHO CORDOVA, CA

REVISION
1 - 08/29/17 CIRCLE K REVISION
2 - 09/30/19 COMMENTS
3 - 10/22/19 COMMENTS
4 - 10/28/19 COMMENTS
5 -
6 -
7 -
8 -

SEAL

DATE	JOB NO
01-02-19	000.000
SCALE	DRAWN BY
AS SHOWN	VA

XXXX

DRAWING NO.

CA2-1

INFO: P:\Rancho Cordova-Sunrise\CUP\Renderings\Working-Files\CA2-1.DWG Marisol Santana PLOTTED: 10-28-19 13:53:58

PERSPECTIVE

SCALE: –

1

139 RADIO ROAD
CORONA, CA 92879

P.O. BOX 1958
CORONA, CA 92878-1958

DIRECT (951) 280-3833
FAX (951) 280-3832

Design Methods · Absolute

PERSPECTIVE

RANCHO CORDOVA SUNRISE
NEC SUNRISE BLVD. & MOINER CR.
RANCHO CORDOVA, CA

REVISION

1	08/29/17 CIRCLE K REVISION
2	09/20/19 COMMENTS
3	10/22/19 COMMENTS
4	10/28/19 COMMENTS
5	–
6	–
7	–
8	–

SEAL

DATE	JOB NO
01-02-19	000.000
SCALE	DRAWN BY
AS SHOWN	–

XXXX

DRAWING NO.

PERS1

INFO: P:\RanchoCordova-Sunrise\CUP\Renderings\Working-Files\PERS1.DWG Marisol Santana PLOTTED: 10-28-19 13:51:37

PERSPECTIVE

SCALE:	1
–	

139 RADIO ROAD
CORONA, CA 92879
P.O. BOX 1958
CORONA, CA 92878-1958
DIRECT (951) 280-3833
FAX (951) 280-3832

Design Methods · Absolute

PERSPECTIVE

RANCHO CORDOVA SUNRISE
NEC SUNRISE BLVD. & MOINER CR.
RANCHO CORDOVA, CA

REVISION
1 – 08/29/17 CIRCLE K REVISION
2 – 09/20/19 COMMENTS
3 – 10/22/19 COMMENTS
4 – 10/28/19 COMMENTS
5 –
6 –
7 –
8 –

SEAL

DATE	JOB NO
01–02–19	000.000
SCALE	DRAWN BY
AS SHOWN	–

XXXX

DRAWING NO.

PERS2

INFO: P:\RanchoCordova–Sunrise\CUP\Renderings\Working–Files\PERS2.DWG Marisol Santana PLOTTED: 10–28–19 13:52:03

MATERIAL BOARD

NE C SUNRISE BLVD. & MONIER CR.
RANCHO CORDOVA, CA

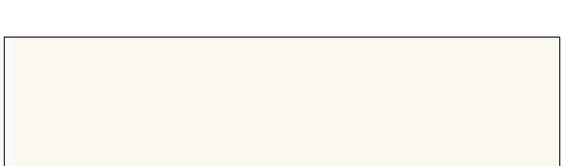
STUCCO: "7/8" CEMENT PLASTER
TEXTURE: (FINE SAND FINISH)

S-FLEX: STUC-O-FLEX ELASTOMERIC ACRYLIC
FINISH - TEXTURE: FINE SAND FINISH

ALUM: "CLEAR ANODIZED ALUMINIUM"

C-01: DUN EDWARDS DET466, "MONARCH MIGRATION"

C-02 "DUNN EDWARDS DEA163 "RODEO"



C-03: DUNN EDWARDS DEW340 WHISPER

C-04: DUNN EDWARDS DE6221 FLINTSTONE

C-05: STANDING SEAM METAL ROOF - COLOR:
DUNN EDWARDS DE6384 IRON FIXTURE

C-06: EL DORADO STONE "CAMINO ADOBE
SOLANO"

RANCHO CORDOVA
SUNRISE

P.O. BOX 1958
CORONA, CA 92878-1958
DIRECT (951) 280-3833
FAX (951) 280-3832

ATTACHMENT 2
Exhibit A to the Resolution

PRELIMINARY GRADING AND UTILITY PLAN FOR:

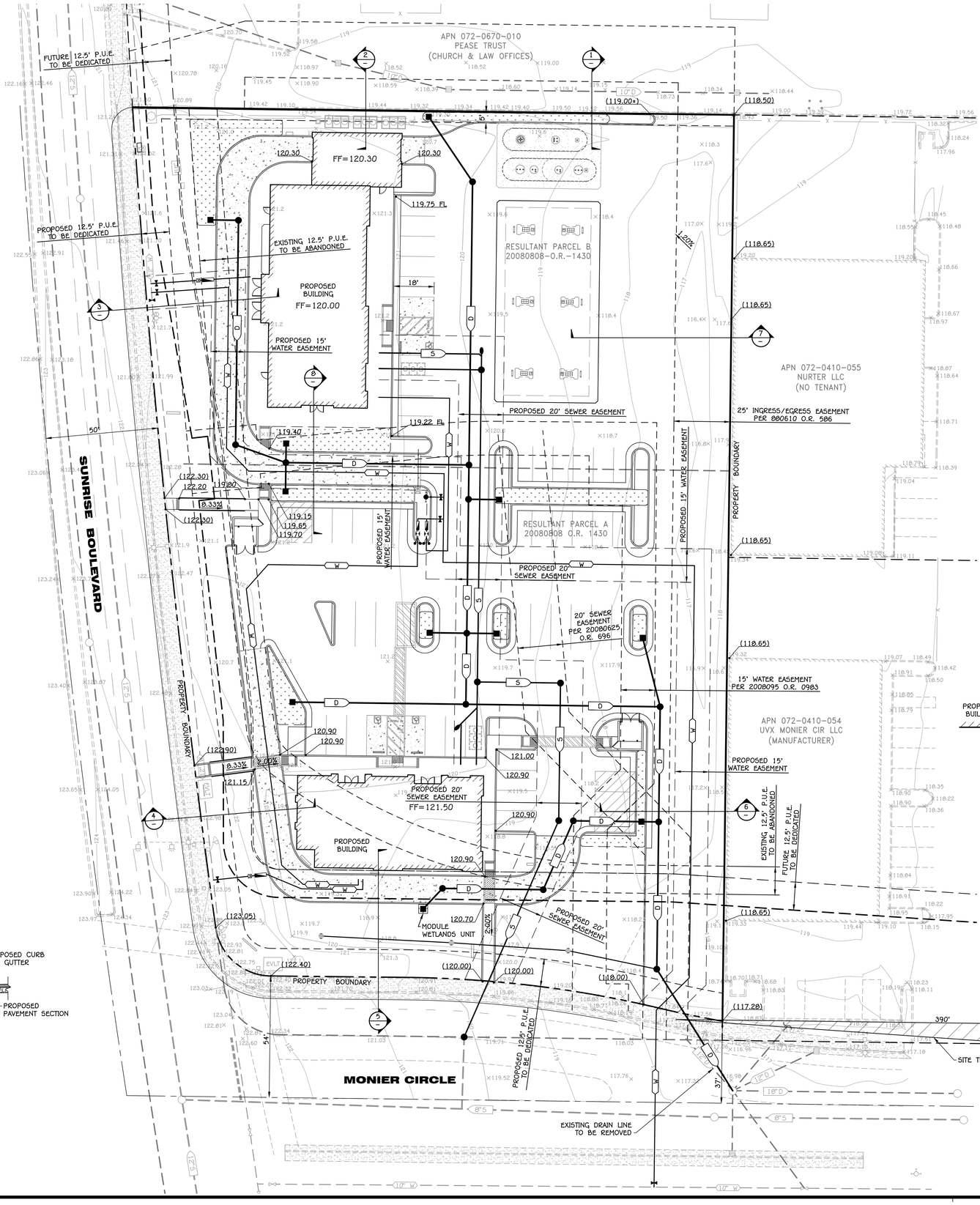
SUNRISE PALMS

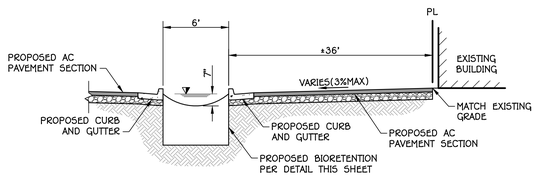
3251, 3261 SUNRISE BLVD

CITY OF RANCHO CORDOVA CALIFORNIA

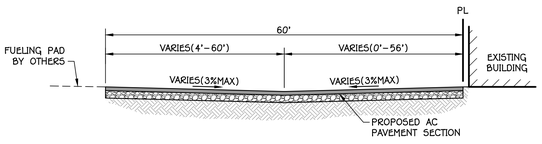
LEGEND

DESCRIPTIONS	(P) PROPOSED	(E) EXISTING
STORM DRAIN	12" D	12" D
SANITARY SEWER	6" S	6" S
WATER MAIN	8" W	8" W
FIRE SERVICE	8" FS	8" FS
CENTERLINE		
RIGHT OF WAY LINE		
BOUNDARY LINE		
ELECTRICAL LINE		E E
GAS LINE		G G
TELEPHONE LINE		T T
JOINT TRENCH		J/T
SIDEWALK WITH CURB AND GUTTER		
VARIABLE CURB FACE		
MANHOLE		
DRAIN INLET		
SEWER CLEANOUT		
METERED WATER SERVICE		
POST INDICATOR VALVE		
FIRE HYDRANT		
FIRE DEPT. CONNECTION		
BLOWOFF VALVE		
GATE VALVE		
BUTTERFLY VALVE		
REDUCED PRESSURE BACKFLOW PREVENTOR		
DOUBLE DETECTOR CHECK VALVE		
TYPE 'A' STREET LIGHT		
TYPE 'B' STREET LIGHT		
TRANSFORMER		
PULLBOX		
PEDESTAL & SERVICE CAN		
UTILITY SERVICE PEDESTAL		
UTILITY POLE		
GUY WIRE		
4 SIDED STREET SIGN		
SIGN		
GRADE BREAK	GB	
DIRECTION OF FLOW		
SWALE		
ELEVATION	123.45	(123.45)
2:1 SLOPE UNLESS NOTED OTHERWISE		
RETAINING WALL		

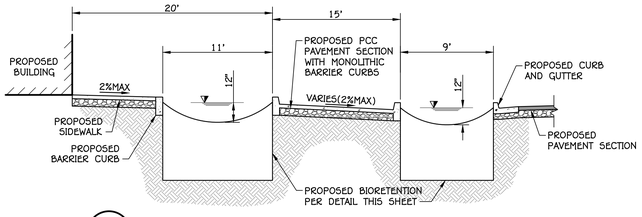




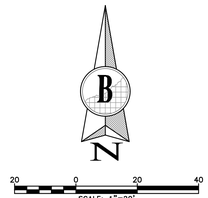
6 TYPICAL SECTION N.T.S.

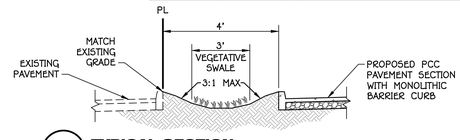


7 TYPICAL SECTION N.T.S.

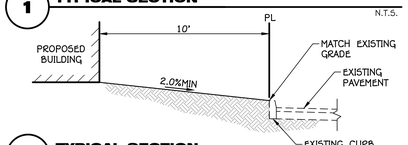


8 TYPICAL SECTION N.T.S.

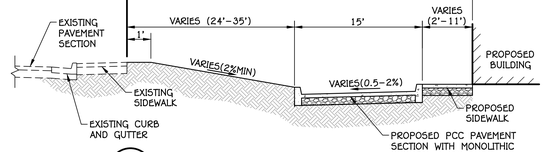




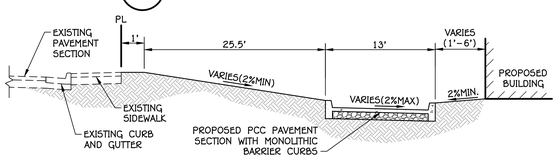
1 TYPICAL SECTION N.T.S.



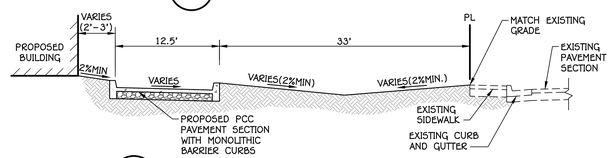
2 TYPICAL SECTION N.T.S.



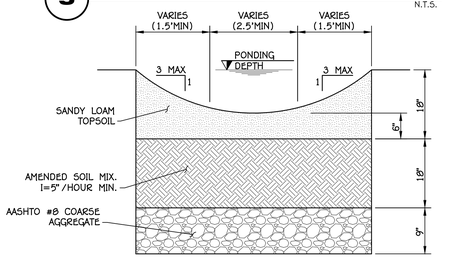
3 TYPICAL SECTION N.T.S.



4 TYPICAL SECTION N.T.S.



5 TYPICAL SECTION N.T.S.



BIO-RETENTION DETAIL NTS

PRELIMINARY GRADING AND UTILITY PLAN FOR:

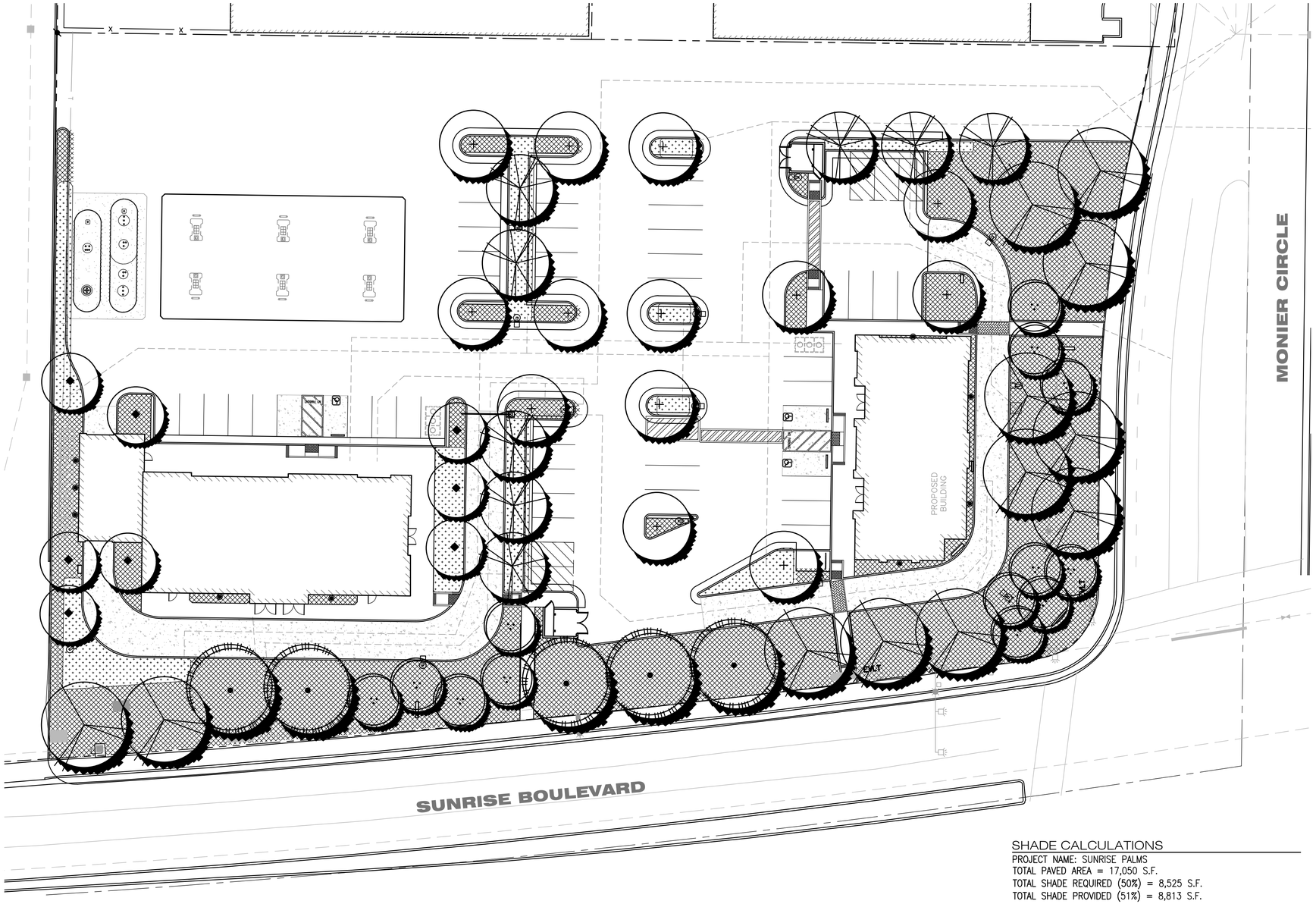
SUNRISE PALMS

OCTOBER, 2019

BURRELL CONSULTING GROUP, INC.
1001 Enterprise Way, Suite 100 Roseville, CA 95678 (916) 783-8898

BURRELL CONSULTING GROUP, INC.(BCG) EXPRESSLY RESERVES ITS COMMON LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE DRAWINGS. THESE DRAWINGS ARE NOT TO BE CHANGED OR COPIED IN ANY FORM OR MANNER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY, WITHOUT FIRST OBTAINING THE EXPRESS WRITTEN PERMISSION AND CONSENT OF BCG. IN THE EVENT OF UNAUTHORIZED REUSE OF THESE DRAWINGS BY THIRD PARTIES OR BY OTHERS, THE PARTY RESPONSIBLE FOR SUCH REUSE SHALL ASSUME ANY AND ALL LIABILITY ARISING FROM SUCH REUSE AND SHALL INDEMNIFY AND HOLD HARMLESS BCG FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM. BCG RESERVES ITS RIGHTS TO REPRODUCE AND CONSTRUCT THE PROJECT DESCRIBED IN THESE DRAWINGS ON OTHER LAND WITHOUT ANY ADDITIONAL COMPENSATION TO BCG.

S:\Proj\1594\Dwg\Planning\Exhibits\PGUP\1594-PGUP.dwg, 11/12/19 12:04:08pm, jorino



PRELIMINARY PLANT LIST AND LEGEND

TREES

SYMBOL	BOTANICAL NAME COMMON NAME	MIN. SIZE	WATER USE	D/E	QUANTITY	DESIGN USE
	ACER RUBRUM 'RED POINTE' RED POINT RED MAPLE	15 G	MED	D	8	ACCENT
	LAGERSTROEMIA INDICA 'CATAWBA' PURPLE CRAPE MYRTLE	15 G	LOW	D	13	ACCENT / ENTRY
	LIRIODENDRON TULIPIFERA TULIP TREE	15 G	LOW	D	13	DRIVE AISLES
	PISTACIA CHINENSIS 'KEITH DAVEY' CHINESE PISTACHE	15 G	LOW	D	8	SHADE
	QUERCUS SUBER CORK OAK	15 G	LOW	E	5	STREET
	ULMUS HYBRID 'FRONTIER' FRONTIER ELM	15 G	LOW	D	12	SHADE / STREET

SHRUBS, GROUNDCOVER & VINES

SYMBOL	BOTANICAL NAME COMMON NAME	SIZE	WATER USE	REMARKS
	BACKGROUND / SCREEN SHRUBS – EVERGREEN, LARGE SHRUBS TO 6'–0" USED FOR REDUCING BUILDING MASS OR SCREENING UNDESIRABLE VIEWS.			
	ABELIA X 'ED GOUCHER' GLOSSY ABELIA	5 G	MED	--
	ARBUTUS UNEDO STRAWBERRY TREE	15 G	LOW	--
	LOROPETULUM CHINENSIS 'RAZZLEBERRI' CHINESE FRINGE FLOWER	5 G	MED	--
	PHOTINIA FRASERI PHOTINIA	5 G	MED	--
	PODOCARPUS MACROPHYLLUS 'MAKI' SHRUBBY YEW PINE	5 G	MED	--
	RHAPHIOLEPIS INDICA 'JACK EVANS' INDIA HAWTHORN	5 G	LOW	--
	FACER/FILLER SHRUBS EVERGREEN OR DECIDUOUS SHRUBS TO 4'–0". USED FOR "TERRACING" OF PLANT MATERIAL. SEASONAL COLOR AND SOFTENING OF BUILDING EDGES AND FOUNDATION SHRUBS.			
	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER' FEATHER REED GRASS	5 G	MED	--
	CISTUS HYBRIDUS WHITE ROCKROSE	5 G	LOW	--
	DIANELLA CAERULEA BLUE FLAX LILY	5 G	LOW	--
	GARDENIA JASMINOIDES 'GROWN JEWEL' CROWN JEWEL GARDENIA	5 G	MED	--
	HELICTOTRICHON SEMPERVIRENS BLUE OAT GRASS	5 G	LOW	--
	MUHLENBERGIA RIGENS DEER GRASS	5 G	LOW	--
	NANDINA DOMESTICA 'COMPACTA' HEAVENLY BAMBOO	5 G	LOW	--
	RHAPHIOLEPIS INDICA 'SPP. INDIA HAWTHORN	5 G	LOW	--
	VIBURNUM DAVIDII DAVID'S VIBURNUM	5 G	MED	--
	GROUND COVER MATERIAL – SMALL SCALE DUE TO PROJECT TYPE, EVERGREEN OR PERENNIAL SHRUBS TO 24" HIGH. USED AS A FILLER BETWEEN SITE WORK EDGES AND FACER SHRUBS.			
	ARCTOSTAPHYLOS U. URSI MANZANITA	1 G	LOW	36" O.C.
	BERGENIA CRASSIFOLIA WINTER BLOOMING BERGENIA	1 G	MED	36" O.C.
	FESTUCA GLAUCA BLUE FESCUE	1 G	MED	24" O.C.
	HOSTA 'LIBERTY' VARIEGATED HOSTA	1 G	MED	24" O.C.
	ROSA FLOWER CARPET (WHITE AND RED) FLOWER CARPET ROSE	1 G	MED	36" O.C.
	SOLLYA HETEROPHYLLA AUSTRALIAN BLUEBELL CREEPER	1 G	MED	18" O.C.
	"NO MOW" OR "MOW FREE" FESCUE NATIVE FESCUE BLEND	SOD	MED	--
	BIOFILTRATION SOD	SOD	MED	--
	VINES – USED TO PROVIDE SOFTENING ON BLOCK WALLS AND BUILDINGS.			
	FICUS PUMILA CREEPING FIG	1G	MED	--
	PANDOREA JASMINOIDES PINK BOWER VINE	1G	MED	--
	TRACHELOSPERMUM JASMINOIDES STAR JASMINE	1G	MED	--

SHADE CALCULATIONS

PROJECT NAME: SUNRISE PALMS
TOTAL PAVED AREA = 17,050 S.F.
TOTAL SHADE REQUIRED (50%) = 8,525 S.F.
TOTAL SHADE PROVIDED (51%) = 8,813 S.F.

DIA.	QTY.	S.F.	TOTAL S.F.
35' TREES (LIRT, PISC)			
100%	2	962	1,924
75%	0	722	0
50%	11	481	5,291
25%	6	240	1,440
20' TREES (ACER)			
100%	0	314	0
75%	0	236	0
50%	0	157	0
25%	2	79	158
TOTAL SHADE PROVIDED:			8,813 S.F.

GENERAL PLANTING NOTES

1. ALL PLANTING AREAS SHALL BE IRRIGATED WITH AN AUTOMATIC IRRIGATION SYSTEM THAT WILL BE COMPLIANT WITH THE STATE'S WATER EFFICIENT LANDSCAPE ORDINANCE.
2. ALL SHRUB AND GROUNDCOVER AREAS SHALL RECEIVE A 3" LAYER OF BARK CHIP MULCH TOP DRESSING.
3. ALL GROUND MOUNTED HVAC UNITS, GAS & ELECTRICAL METERS, AND EQUIPMENT ETC. SHALL RECEIVE SHRUB SCREENING IN SHRUB AND GROUNDCOVER AREAS AROUND BUILDINGS.
4. TRASH ENCLOSURES SHALL BE SCREENED WITH TREES AND EVERGREEN SHRUB PLANTING.

RANCHO CORDOVA SUNRISE
RANCHO CORDOVA, CA

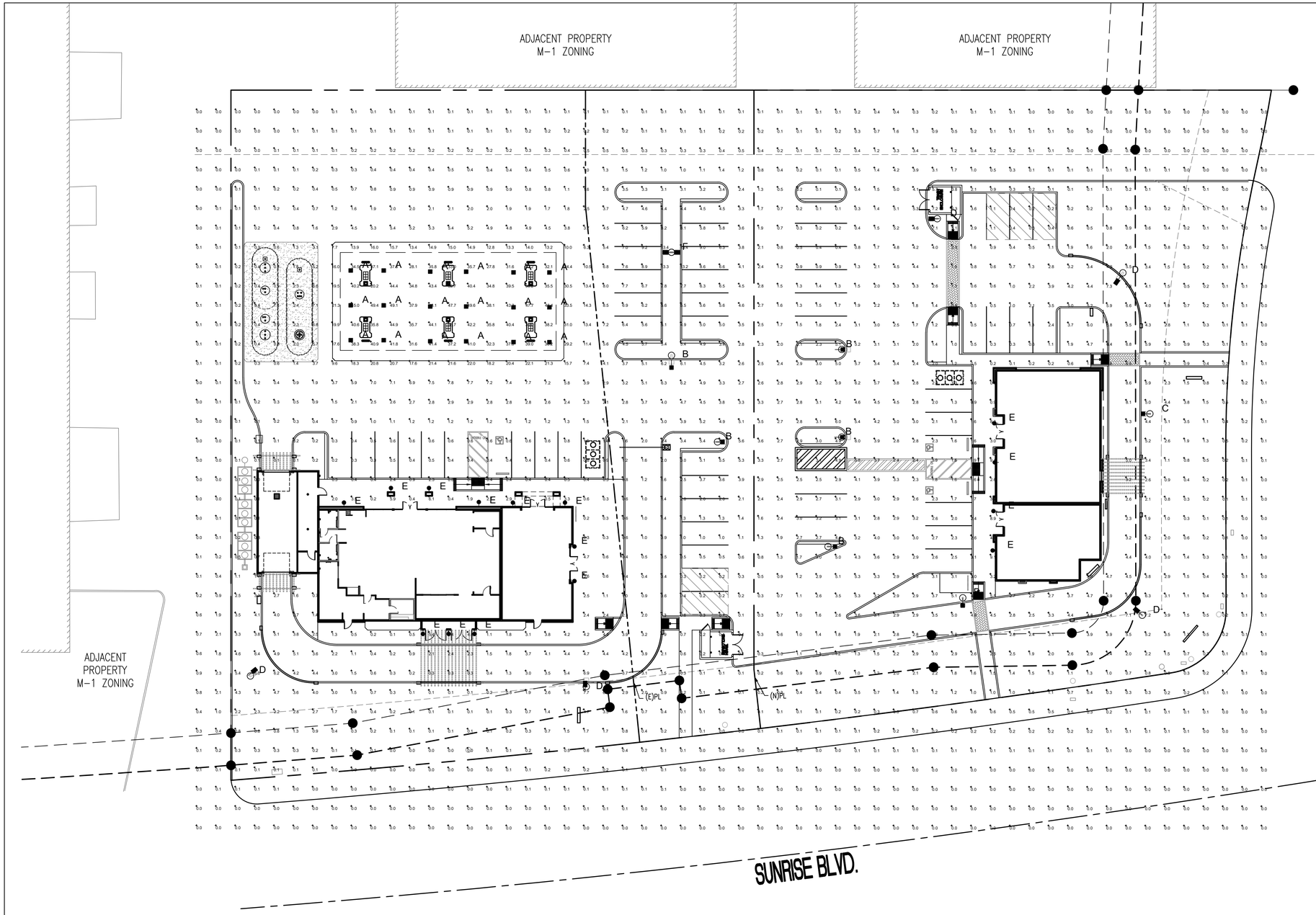
PRELIMINARY PLANTING PLAN

SCALE: 1" = 20'
0 20' 40'

SHEET
PL1

FUHRMAN LEAMY LAND GROUP
DESIGN • SERVICE • SOLUTIONS
2140 PROFESSIONAL DRIVE, SUITE 115 ROSEVILLE, CA 95661

DATE: 11.08.2019
PROJECT: BEG.18092



Luminaire Schedule									
Symbol	Qty	Label	Arrangement	Description	LLD	UDF	LLF	Arr. Lum. Lumens	Arr. Watts
	18	A	SINGLE	CRUS-SC-LED-HO-50 MTD @ 15'	1.000	1.000	1.000	18633	132.4
	6	B	SINGLE	SLM-LED-18L-SIL-5W-50-70CRI-SINGLE-16'POLE+2' BASE	1.000	1.000	1.000	18327	148.5
	1	C	SINGLE	SLM-LED-18L-SIL-3-50-70CRI-SINGLE-16' POLE+2' BASE	1.000	1.000	1.000	19756	148.5
	5	D	SINGLE	SLM-LED-18L-SIL-FT-50-70CRI-SINGLE-16'POLE+2' BASE	1.000	1.000	1.000	19664	148.5
	19	E	SINGLE	AD150-10-CW-LED	1.000	1.000	1.000	905	11.4
	1	F	D180	SLM-LED-18L-SIL-FT-50-70CRI-D180-16'POLE+2' BASE	1.000	1.000	1.000	39328	297

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
ALL CALC POINTS	Illuminance	Fc	2.94	49.6	0.0	N.A.	N.A.
C-STORE LOT	Illuminance	Fc	3.21	21.3	0.1	32.10	213.00
CANOPY	Illuminance	Fc	31.90	49.6	10.0	3.19	4.96
QUICK SERVE LOT	Illuminance	Fc	2.73	8.6	0.1	27.30	86.00

Based on the information provided, all dimensions and luminaire locations shown represent recommended positions. The engineer and/or architect must determine the applicability of the layout to existing or future field conditions.

This lighting plan represents illumination levels calculated from laboratory data taken under controlled conditions in accordance with The Illuminating Engineering Society (IES) approved methods. Actual performance of any manufacturer's luminaires may vary due to changes in electrical voltage, tolerance in lamps/LED's and other variable field conditions. Calculations do not include obstructions such as buildings, curbs, landscaping, or any other architectural elements unless noted. Fixture nomenclature noted does not include mounting hardware or poles. This drawing is for photometric evaluation purposes only and should not be used as a construction document or as a final document for ordering product.

Drawing scaled or converted from PDF file or scanned / submitted image. Dimensions are approximate.

10000 ALLIANCE RD. CINCINNATI, OHIO 45242 USA
(513) 793-3200 * FAX (513) 793-3333

LIGHTING PROPOSAL			LO-145688-2
C-STORE SUNRISE BLVD & MOINER CR RANCHO CORDOVA,CA			
BY:MWE	DATE: 12/26/18	REV:11-05-19	SHEET 1 OF 1
SCALE: 1"=30'		0 30	

		Category	Timing/ Implementation	Enforcement/ Monitoring	Verification (date & Signature)
General Conditions					
1.	The approved entitlement is for the following; • A Conditional Use Permit to allow for a service station, convenience store, drive-through sales and services, and sale of alcoholic beverages for the convenience store within the Light Industrial zoning district. • An Administrative Use Permit to allow for restaurant use within the project tenant spaces. • Major Design Review for two buildings and a fuel canopy that includes; a 3,200 sqft convenience store, 6 island pumps, a drive-through self-service car wash, and a 1,200 sqft tenant space. The second building includes a 2,100 sqft drive-through restaurant and a 1,100 sqft tenant space. The site is located at 3251 and 3261 Sunrise Boulevard (northeast corner of Sunrise Boulevard and Monier Circle). The project is described in the City Council staff report dated January 6, 2020, and **Exhibit A** with the conditions herein, for Project No. DD9841.	Project Description	On-Going	Planning	
2.	The Applicant shall hold harmless the City, its Council Members, officers, agents, employees, and representatives from liability for any award, damages, costs and fees incurred by the City and/or awarded to any plaintiff in an action challenging the validity of this permit or any environmental or other documentation related to approval of this permit. Applicant further agrees to provide a defense for the City in any such action.	General	On-Going	Planning	
3.	Any future alteration to the buildings, change in use, intensification of the site, or modification to the parking and landscaped area must be reviewed by the City to ensure compliance with all local, state, and federal regulations. Minor modifications that are found to be in substantial conformance with the approved plans such as colors, plant materials, or minor lot line adjustments, may be approved administratively. Major modifications shall be approved by the	General	On-Going	Planning/ Building /Public Works	

		Category	Timing/ Implementation	Enforcement/ Monitoring	Verification (date & Signature)
	applicable decision making body**.**				
4.	Applicant/Developer shall not carry a negative account balance with the City for the processing of the project. If a negative account balance occurs, it will be the developer's responsibility to pay the balance due, in order to avoid delays in the processing of future permits or recordation of maps. Please email the Finance Department at billings@cityofranchocordova.org for the status of your account with the City.	General	On-Going	Finance	
5.	The Permit is valid for a period of three (3) years from the date of City Council approval unless an extension is granted by the Community Development Director.	Expiration	On-Going	Planning	
6.	The drive-through self-service car wash operational hours shall be 7 a.m. to 10 p.m.	Car wash operational hours	On-Going	Planning	
7.	Signage is not approved with this permit. All signage shall comply with the City of Rancho Cordova Zoning Code.	Signage	On-Going	Planning	
8.	Noise sources associated with construction, repair, remodeling, demolition, paving and/or grading of any real property must adhere to the development standards outlined within the City's Noise Element, RCMC 6.68 and RCMC 16.18.1407(F).	Construction	On-Going	Planning/ Building/Code Enforcement	
9.	The applicant shall comply with Zoning Ordinance 23.910.020, standards for convenience store and submit a security plan to the police department.	Convenience store security plan	On-Going	Planning/ Police Dept	
10.	Applicant shall be responsible for all damage to City streets associated with construction of the project and shall repair any damage as soon as possible.	Construction	On-Going	Public Works	

		Category	Timing/ Implementation	Enforcement/ Monitoring	Verification (date & Signature)
11.	The removal and replanting of landscape not listed on the approved plan set must be consistent with RCMC 23.716.080 through 23.716.090 and reviewed by the Planning Department prior to the removal. All landscape care, maintenance, and tree pruning must adhere to RCMC 23.716.100 through 23.716.110.	Landscaping	On-Going	Planning	
Prior to Approval of Improvement Plans					
12.	All storm drain facilities within private roads shall be privately maintained and shall be clearly labeled as “private” in the improvement plans, unless considered through drainage by the Department of Public Works	Drainage	Prior to Improvement Plan Approval	Public Works	
13.	Offsite drainage improvements and easements shall be provided pursuant to the City of Rancho Cordova’s Floodplain Management Ordinance, and the City of Rancho Cordova’s Improvement Standards.	Drainage	Prior to Improvement Plan Approval	Public Works	
14.	**Drainage Study:** Applicant shall prepare and submit a project specific drainage study that includes but is not limited to: a pre- and post-project drainage analysis of the project and project impacts, identification of offsite project impacts or required offsite improvements, and identification of proposed connections to the City’s Storm Drainage System with adequate supporting calculations. The drainage study shall conform to the requirements of the Sacramento City/County Drainage Manual (Volume 2), County of Sacramento Improvement Standards (Section 9), and all other applicable City standards. The drainage study must be developed and stamped by a Professional Engineer	Drainage	Prior to Improvement Plan Approval	Public Works	
15.	**Stormwater Quality- Post Construction** The improvement plans shall incorporate all applicable post construction stormwater quality measures; including source control, low impact development, and full capture trash control measures into the site improvement plans in conformance with the most recent version of the *Stormwater Quality Design Manual for the Sacramento Region*. The applicant shall prepare and submit a	Drainage	Prior to Improvement Plan Approval	Public Works	

		Category	Timing/ Implementation	Enforcement/ Monitoring	Verification (date & Signature)
	Post-Construction Stormwater Quality Control Plan that includes details and sizing calculations of all the proposed post construction stormwater quality measures. In addition, a maintenance covenant is required for **ALL** proposed post construction stormwater quality measures, as detailed in Appendix B of the *Stormwater Quality Design Manual for the Sacramento Region.*				
16.	The SWPPP in place for the site shall include a contingency plan for the implementation of a process to remove fine clay sediments prior to discharge to The City of Rancho Cordova's storm drain system and/or Waters of the State (e.g., creeks, rivers) to the satisfaction of the City of Rancho Cordova. A polymer treatment system or comparable process shall be designed in the erosion and sediment control plan of the improvement plans. This system shall be implemented by qualified professionals with training and proven experience in this field. Such treatment shall be accomplished in a manner that does not pose a toxic threat to fish and other aquatic organisms in receiving waters.	Drainage	Prior to Improvement Plan Approval	Public Works	
17.	Provide a permanent concrete stamp, or other permanently applied message to the satisfaction of the City not including paint, which reads "No Dumping-Flows to Creek" or other approved message at each storm drain inlet.	Infrastructure	Prior to Improvement Plan Approval	Public Works	
18.	All landscape strips, medians, etc. that contain trees shall be designed to include continuous root barriers.	Landscaping	Prior to Improvement Plan Approval	Public Works	
19.	Number, size, and location of driveways are subject to approval by the Public Works Department.	Infrastructure	Prior to Approval of Improvement Plans	Public Works	
20.	Applicant shall photo-document the condition of adjacent streets, sidewalks and infrastructure to the satisfaction of the Public Works Department.	Infrastructure	Prior to Approval of Improvement Plans	Public Works	

		Category	Timing/ Implementation	Enforcement/ Monitoring	Verification (date & Signature)
21.	Enter into a frontage agreement and bond for construction of public improvements per the approved Public Works plans to the satisfaction of the Public Works Department.	Improvement Bond	Prior to Approval of Improvement Plans	Public Works	
22.	A final landscape plan shall be submitted in conjunction with improvement plan and or building permit submittal and approved by the planning and public works departments prior to issuance of permits and/or any installation of landscape materials RCMC 23.716.020. The final landscape planting and irrigation plan shall be prepared by a registered licensed landscape architect and include the following items per RCMC 22.180.060: • Planting plan to scale that indicate slope • Irrigation Plan • Soils Test • Water Use Calculations • Irrigation Schedule • Permeability test for LID facilities' location • Soil media specifications (LID features)	Landscaping	Prior to Approval of Improvement Plans	Public Works	
23.	The applicant must determine if the project is required to obtain coverage under the State's *National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Industrial Activity* (Industrial General Permit). Applicant shall notify the City if an Industrial General Permit is required and include the applicable Standard Industrial Classification (SIC) code(s), which describe the business activities that will be occurring at the facility.	Drainage	Prior to Approval of Improvement Plans	Public Works	
24.	**DRAINAGE SYSTEM DESIGN**: The applicant shall submit and obtain City approval of plans and specifications for the construction of public drainage improvements and all grading. The proposed drainage system shall be designed in accordance with the approved drainage study to accommodate runoff from the ultimate development and shall meet the City of Rancho Cordova's	Drainage	Prior to Approval of Improvement Plans	Public Works	

		Category	Timing/ Implementation	Enforcement/ Monitoring	Verification (date & Signature)
	Improvement Standards, Construction Specifications, and Floodplain Management Ordinances in effect at the time of improvement plans approval.				
25.	All development within the City must comply with the City of Rancho Cordova's Floodplain Management Ordinance. All new structures shall be protected from the 100-year (1 percent) flood event. Certified pad elevations (certified by a registered Civil Engineer or licensed Land Surveyor) shall be set at least one and two tenths foot (1.2') above all sources of 100-year flooding (see Section 9-1 of improvement standards). The overland release path must be shown on the improvement plans and the hydraulic computation must be provided to estimate the flow depths along the overland release paths. The calculations must be in conformance with Section 9-15 Improvement Standards.	Flood Management	Prior to Approval of Improvement Plans	Public Works	
26.	The applicant shall coordinate with Sacramento Area Sewer District on the following conditions: a. To obtain sewer service for this project, construction of SASD sewer infrastructure will be required to the satisfaction of SASD. Current SASD Standards and Specifications apply to any offsite or onsite public sewer construction or modification. These improvements must be shown on the plans. Field modifications to new or existing precast manhole bases are not allowed. b. SASD Design Standards requires each building on each lot with a sewage source to have a separate connection to the SASD's sewer system. If there is more than one building in any single parcel and the parcel is not proposed or split, then each building on that parcel shall have a separate connection to a private onsite sewer line or a separate connection to the SASD public sewer line. c. Private sewer service laterals will not be permitted to connect directly to the 12 inch diameter trunk line. d. Sewer easements will be required to service the parcel. All	Sewer	Prior to Approval of Improvement Plans	SASD and Public Works	

		Category	Timing/ Implementation	Enforcement/ Monitoring	Verification (date & Signature)
	public sewer easements will be dedicated to SASD in a form approved by the District Engineer. All public sewer easements will be at least 20 feet in width and requires continuous access for installation and maintenance. SASD will only provide maintenance in public right-of-ways and SASD dedicated sewer easements.				
27.	The applicant shall comply with the Fire conditions as follows; a. Show the design for a fire access roadway of not less than 20-feet of unobstructed width, 13-feet, 6-inches of vertical clearance, and turning radii of 25 feet inside and 50 feet outside dimension on the improvement plans. The access roadway shall extend to within 150 feet of all portions of the exterior walls of the first story of any proposed building. The use of turf-block or grass-crete or similar alternate road surfaces is not approved for installation in fire apparatus access roadways. b. Show the design for an approved fire apparatus turnaround which shall conform to Sacramento Metro Fire Districts, Fire Prevention Standard #3. c. Show the design for a minimum of 2 remote fire access roadways that are spaces a distance apart that is no less than ½ the diagonal measurement of the overall project site. d. Show on the plans how Fire Lanes will be marked. Fire Lane identification shall be provided along the required fire access roadway. Fire Lane identification shall be in accordance with the Sacramento Metro Fire Districts Fire Prevention Standard #3 and the California Vehicle Code. Vehicle parking is prohibited on any street less than 28 feet in width. Vehicle parking is permitted on both sides of streets 36 feet or more in width. Roadway widths shall be measured between the gutter-line or edge of pavement on opposite sides of the road. Identification of fire apparatus access roadways may be required on private roads.	Fire	Prior to Approval of Improvement Plans	Sac Metro Fire District/ Public Works	

		Category	Timing/ Implementation	Enforcement/ Monitoring	Verification (date & Signature)
	e. Provide a note on the plan that reads, "Fire access roadways shall be built to bear a minimum of 80,000 pounds and meet the Sacramento County Public Works Standards for roadways. A report, prepared by a registered geotechnical engineer, verifying the ability of the road to bear the required minimum weight, shall be submitted with any plan indicating construction of roadway. Verification of constructed roadway shall be provided by a registered geotechnical engineer prior to final of the project." Required Private streets and fire apparatus access roads shall be installed to the "first lift," (Up to the last one inch of pavement) identified, and verified by SMFD prior to any construction, (including foundations) or on-site storage of combustible materials. f. Show the location of the required fire hydrants for this project on the improvement plans. Approved fire hydrants capable of providing the required fire flow for the protection of any and all structures shall be located along the fire apparatus access roadway. The required fire hydrants shall be installed and operational prior to any construction, (including foundations) or on-site storage of combustible materials. The minimum required fire flow for the protection of commercial developments is 1,500 gallons per minute (gpm) at a pressure of 20 pounds per square inch (psi) for a two-hour duration.				
28.	Prior to any construction activity, a pre-construction determinate survey shall be required for work that will commence during the migratory bird nesting season (February 1 through August 31). This survey is to determine if there is active onsite nesting by birds protected under the Migratory Bird Treaty Act (MBTA) would be affected by construction activities. If all construction activity would occur outside this time, the survey is not required. If nesting activity is observed, consultation with the City of Rancho Cordova Planning	Survey	At Improvement Plans/ grading permit issuance.	Planning	

		Category	Timing/ Implementation	Enforcement/ Monitoring	Verification (date & Signature)
	Department and the California Department of Fish and Wildlife shall be conducted in order to determine the appropriate mitigation, if any, required to minimize impacts to nesting birds. No activity may occur within 100 feet of any nesting activity or as otherwise required following consultation with the California Department of Fish and Wildlife.				
Prior to Issuance of Building Permits					
29.	The pad building located along Monier Circle shall include a trellis structure over the drive-through service window. The trellis structure shall be consistent with the trellis structure over the car wash drive through.	Building Trellis Structure	Prior to Issuance of Building Permits	Planning	
30.	Transportation Impact Fees shall be updated, or other provisions for collection of fair share contributions shall be established, to incorporate any offsite mitigation measures within the City of Rancho Cordova that are identified for the project that are not part of the current Transportation Impact Fee program and Transportation Impact Fees shall be paid.	Funding	Prior to Issuance of Building Permits	Public Works	
31.	Property Owner/Applicant shall participate in or provide a funding mechanism for maintenance services for the fair share of existing and all new public improvements associated with the project including, but not limited to, streets, bridges/culverts, traffic signals, traffic signs, striping and legends, ITS operations, street lights and safety lighting, public frontage and median and landscape improvements, and trails. This may be accomplished through annexation to the City's Community Facilities District No. 2014-2 (Street, Lighting and Landscape Maintenance), or other financial mechanism as may be proposed and provided by the Property Owner for the same purpose of providing a financial mechanism to fund the operation and maintenance of the Project's public improvements. Costs associated with the annexation shall be borne by the Property Owner/Applicant through payment of the annexation costs of the CFD annexation in the amount of $5,000 per	Funding	The annexation shall occur prior issuance of a building permit	Public Works	

		Category	Timing/ Implementation	Enforcement/ Monitoring	Verification (date & Signature)
	annexation. Contact Elizabeth Sparkman at (916) 851-8714 with regard to the process to satisfy this condition of approval.				
32.	Property Owner/Applicant shall participate in or provide a funding mechanism for maintenance services for the project's stormwater drainage and flood protection system. This may be accomplished through annexation to the City's Stormwater Utility Fee District, or other financial mechanism as may be proposed and provided by the Property Owner for the same purpose of providing a funding mechanism to fund the operation and maintenance of the Project's stormwater drainage and flood protection system. Costs associated with the annexation shall be borne by the Property Owner/Applicant through payment of the annexation costs in the amount of $7,000 per annexation. Contact Elizabeth Sparkman at (916) 851-8714 with regard to the process to satisfy this condition of approval.	Funding	The annexation shall occur prior issuance of a building permit	Public Works	
33.	Property Owner/Applicant shall participate in the provision of funding to provide transit-related services by voting to approve a special tax. The tax shall be the annual amount (with appropriate annual inflation adjustment) as established at the time of voting by the City Council. The election to provide for the tax shall be completed prior to the issuance of building permits. The property owner shall be responsible for paying all costs associated with holding the election. The tax shall be due at the time specified in the ordinance imposing the tax. In addition, the Owner of the property shall hold a deed assessment in the form of Conditions, Covenants & Restrictions against the property, or other form as shall be approved by the City, which assessment will take effect in the event the special tax described in this Condition of Approval is reduced or repealed. Contact: Elizabeth Sparkman at (916) 851-8714 as there may be a 1-2 month lead time to satisfy this condition.	Funding	The annexation shall occur prior issuance of a building permit	Public Works	
34.	Applicant shall complete improvement plans to the satisfaction of the Public Works Department. Improvement plans shall include, but shall not be limited to:	Infrastructure	Prior to Issuance of Building	Public Works	

		Category	Timing/ Implementation	Enforcement/ Monitoring	Verification (date & Signature)
	• All onsite civil improvements. • Civil plan shall include an ADA access plan • All facilities, including but not limited to, sidewalk, driveways, etc. shall be upgraded to meet current ADA requirements and City Standards. • Sidewalk on Sunrise Boulevard frontage from 5 panels north of the curb return extending to the north property line, does not conform to ADA guidelines. Remove and replace all sidewalk per City Standard. Any obstructions to the sidewalk shall be relocated behind back of walk. • Replace the damaged sidewalk in the second and third panels north of the curb ramp on Sunrise boulevard to the satisfaction of The Public Works Department. Sidewalk panels shall be replaced to the nearest joint. • Utility laterals • Public improvement plans shall clearly delineate all transitions to existing improvements. • All improvements to be designed and constructed to the satisfaction of the Public Works Department. • Developer shall petition the City of Rancho Cordova to abandon the exiting PUE. Developer is responsible for all coordination necessary with utilities for abandonment. Dedicate the new PUE per the approved site plan exhibit.		Permits		
35.	All trash enclosures and refuse areas shall comply with zoning code regulations and all service provider standards regarding amount, design, and access based upon the project's estimated need and waste pickup schedules. Trash enclosures should try to incorporate the same architectural treatments, materials and colors as the main building in order to properly screen them from view. The gate to the trash enclosure shall be an opaque metal gate.	Architectural	Prior to Issuance of Building Permits	Planning	
36.	Bicycle Parking shall be installed in accordance with RCMC 23.719.115. All parking shall be located near main entrances and not impede onsite automobile and pedestrian access. The final	Bicycle Parking	Prior to Issuance of Building	Planning	

		Category	Timing/ Implementation	Enforcement/ Monitoring	Verification (date & Signature)
	design and location will be reviewed and approved by the Planning Department.		Permits		
37.	A final landscape plan shall be submitted to the Planning Department in conjunction with building permit submittal and approved by the Planning and Public Works Departments prior to issuance of permits and/or any installation of landscape materials RCMC 23.716.020. The final landscape planting and irrigation plan shall be prepared by a registered licensed landscape architect and include the following items per RCMC 22.180.060: • Planting plan to scale that indicate slope • Irrigation Plan • Soils Test • Water Use Calculations • Irrigation Schedule	Landscaping	Prior to Issuance of Building Permits	Planning	
38.	Designer shall certify that installed landscaping conforms to City water conservation landscape requirements.	Landscape	Prior to Issuance of Building Permit	Public Works	
39.	The applicant shall submit necessary application and plans to Sacramento County Water Agency. Public water service is required to each building. All water lines shall be located within a public right-of-way or within easements dedicated to SCWA. The applicant is required to provide efficient cooling systems, re-circulating pumps for fountains and ponds, and water recycling systems for vehicle washing as a condition of service.	Water	Prior to Issuance of Building Permit	SCWA	
40.	The applicant shall comply with SMUD conditions as follows; a. SMUD has existing overhead 12kV facilities that will need to remain. SMUD also has existing overhead 69kV facilities running N/S on W/S Sunrise Boulevard and running E/W on N/S International Drive that will need to remain. The applicant shall be responsible for maintaining all CalOSHA and State of California Public Utilities Commission General Order No. 95 safety clearances during construction and upon	Infrastructure	Prior to Issuance of Building Permits	SMUD / Public Works	

		Category	Timing/ Implementation	Enforcement/ Monitoring	Verification (date & Signature)
	building completion. If the required clearances cannot be maintained, the applicant shall be responsible for the cost of relocation. b. SMUD reserves the right to use any portion of its easements on or adjacent to the subject property that it reasonably needs and shall not be responsible for any damages to the developed property within said easement that unreasonably interferes with those needs. c. The Applicant shall not place any building foundations within 5-feet of any SMUD trench to maintain adequate trench integrity. The Applicant shall verify specific clearance requirements for other utilities (e.g., Gas, Telephone, etc.). d. Any necessary future SMUD facilities located on the Applicant's property shall require a dedicated SMUD easement. This will be determined prior to SMUD performing work on the Applicant's property. e. The applicant shall provide separate SMUD service points to each parcel to the satisfaction of SMUD. f. In the event the applicant requires relocation or removal of existing SMUD facilities on or adjacent to the subject property, the applicant shall coordinate with SMUD. The applicant shall be responsible of the cost of relocation and/or removal. g. The applicant shall dedicate any private drive, ingress and egress easement, (and 10 feet adjacent thereto) as a public utility easement for (overhead and) underground facilities and appurtenances. All access roads shall meet minimum SMUD requirements for access roads.				
Prior to Final inspection/Certificate of Occupancy					
41.	Install improvements per the approved Public Works plans and to the satisfaction of the Public Works Department.	Improvements	Prior to Final Building Inspection of	Public Works	

		Category	Timing/ Implementation	Enforcement/ Monitoring	Verification (date & Signature)
			the first unit		
42.	The applicant shall meet the following: Civil Site Plans and Architectural Plans shall be submitted and approved prior to Final Building Permit being issued. Fire Sprinkler and Fire Alarm plans shall be submitted prior to Final Building Permit being issued. Please note: The Sacramento Metro Fire District does not allow deferred submittals for Fire Sprinkler and/or Fire Alarm plans.	Fire	Prior to Final Building Inspection	Fire	
43.	Upon completion of the installation of the landscaping, the designer shall certify that the landscape complies with all city water conserving landscape requirements. Certification shall be accomplished by completion of a certificate of compliance on a form approved by the Director of the City Public Works Department. Failure to submit a complete and accurate certificate of compliance will delay final approval of the project and/or discontinue water service per RCMC 22.180.090. Upon receipt of the certificate of compliance and site inspection from City staff, the landscaping performance bond will be released.	Landscape	Prior to final building inspection	Public Works	
44.	Approved numbers or addresses shall be placed on all new or existing buildings in such a position as to be easily read from the street or road fronting the property. The minimum size of the numbers shall not be less than six (6) inches and shall be mounted immediately adjacent to a light source and shall also contrast with their background.	Fire	Prior to Final Inspection/ Certificate of Occupancy	Fire	
45.	As-built reproducible grading and improvement plans (1 full size and 1 half size hard copy), as well as a compact disc containing said plans in AutoCAD and pdf format, and a GIS shape file, or equivalent to the satisfaction of the City Engineer shall be submitted and approved by the Public Works Department.	Plans	Prior to final building inspection	Public Works	

CALIFORNIA DEPARTMENT OF
Alcoholic Beverage Control

Results for: Active Off-Sale Retail License

County: SACRAMENTO County
Census Tract: 87.05

Report Date: Monday, December 02, 2019

Show 10 entries

Search:

License Number	Status	License Type	Orig. Iss. Date	Expir. Date	Primary Owner	Premises Addr.	Busi Nan
352336	ACTIVE	20	09/29/1999	08/31/2020	PERDUN ENTERPRISES INC	3099 SUNRISE BLVD, RANCHO CORDOVA, CA 95742 Census Tract: 0087.05	ARC
380959	ACTIVE	21	11/14/2001	06/30/2020	COSTCO WHOLESALE CORPORATION	11260 WHITE ROCK RD, RANCHO CORDOVA, CA 95742 Census Tract: 0087.05	COS WH(438

License Number	Status	License Type	Orig. Iss. Date	Expir. Date	Primary Owner	Premises Addr.	Busi Nan
592939	ACTIVE	20	07/11/2018	06/30/2020	DELUXE MD, INC.	11430 SUNRISE GOLD CIRCLE, STE 11, RANCHO CORDOVA, CA 95742-6563 Census Tract: 0087.05	DEL
593065	ACTIVE	20	06/21/2018	05/31/2020	SIP AND SAVOR	11354 WHITE ROCK RD, STE 135, RANCHO CORDOVA, CA 95742-6622 Census Tract: 0087.05	SIP / SAV

Showing 1 to 4 of 4 entries

Previous 1 Next

DOWNLOAD REPORT (CSV)

J & T Investments, Inc.

Jack Kofdarali, President
139 Radio Rd.
Corona, California 92879
(951) 280-3833 Ext. 1
(951) 280-3832 Fax
Jack@jmtmgmt.com

September 9, 2019

June Cowles
Project Planner
City of Rancho Cordova
2729 Prospect Park Drive
Rancho Cordova, CA 95670

RE: Application Requesting a Finding of Convenience and Necessity for the Sale of Alcoholic Beverages for Sunrise Palms Conditional Use Permit and Minor Design (DD9841) for the Premises located at: 3251 and 3261 Sunrise Blvd., Rancho Cordova, CA 95670

Dear Ms Cowles:

J&T Investments Inc. is the proposed Operator for the above, respectfully request from the City of Rancho Cordova to grant us approval for Public Convenience and Necessity finding for the convenience market/fueling station required for our ABC application for Type-20 ABC License, below please find our justification:

OVERVIEW AND PROJECT DESCRIPTION

The project at the Sunrise/Monier Project is a neighborhood / convenience development comprised of many complementary uses including, but not limited to restaurants, personal services, convenience market and fueling station. The development will serve the local area residents, and also serve visitors traveling Sunrise Blvd and International Drive.

According to the Rancho Cordova code a PC&N is needed for the off-premise sale of beer and wine at a convenience store.

BASIS FOR SUPPORTING OFF-SITE BEER AND WINES SALES AS AN INTERGAL PART OF THE PROPOSED PROJECT

1. **The Convenience Market Concept:** We propose a convenience market that provides a large diversity of food and sundry items. The intent is to provide a broad array of products for the consumer's convenience. The store will have expanded inventory with over 1,500 items including milk to magazines, cheeses to chips, prepared foods and

baked goods, along with soft drinks and other non-alcoholic beverages. There is even a coffee bar within the site. The new store features expanded food services including hot and cold sandwiches, fresh fruit, 24 head soda fountain and a larger condiment table as opposed to the limited variety of food products offered by our immediate competitors, Flyers and Extra Mile. The store also features a modernized image with better lighting and upgraded décor.

The sale of beer and wine will be one important part of this convenience market concept. Indeed, although beer and wine is expected to comprise a very small percent of the site's shelf-space, only a small portion of our Service Station's sales (between 5% and 10%), it is nevertheless necessary in order to provide the public a complete range of products. Thus, beer and wine is a key element of the Convenience Market.

By providing a whole host of products, ***including beer and wine***, readily available to the consumer at this store, the public convenience of the area will certainly be served. Without it, the customer is required to make two or more trips (i.e., one to get food, and a second to get alcoholic beverages).

2. **Preventing New Alcoholic Beverage Retailers is Contrary to Good Public Policy**

Many communities have adopted policies that discourage and even prevent new retailers of Alcoholic Beverages from establishing new outlets within the jurisdiction. These polices are based on the perception that additional locations will aggravate existing problems associated with alcohol retailers. The fact that is overlooked by these polices is that by preventing new retailers from opening, the community has in essence granted a monopoly to the existing retailers, thereby removing the competitive impetus for existing retailers to address problems and improve their operating facilities and practices. The approval of new retailers with operating conditions that address community concerns will reduce problems associated with alcohol retailers by forcing existing retailers to either clean up or perish.

3. **Security and Control**

We are committed to taking all feasible steps to address law enforcement concerns about the site. In addition, we have an extensive employee-training program and it is a more responsible retailer of alcoholic beverages than other establishments – including those in the areas near the site. We certainly have the resources to be a responsible retailer of all types of goods and especially of alcoholic beverages. Imposing appropriate conditions on approval can ameliorate any concerns that do exist.

The facility is designed to provide a safe environment for patrons and employees. To that end, the following design elements are incorporated into our security plan. Additional security measures include: adequate lighting levels both on the interior and exterior of the store, 24-hour employee supervision of the facility, closed circuit video monitoring system-with cameras located strategically throughout the property, and careful window sign and landscaping placement to avoid obstruction of visibility into and out of the facility.

We understand the importance of maintaining the appearance of a facility to both expanding our customer base and preventing criminal activity. In order to reinforce our resolution to maintain our facilities, we voluntarily propose the following conditions:

1. Any graffiti painted or marked upon the premises shall be removed or painted over within 72 hours of discovery thereof.
2. All improvements on the property will be continuously maintained, including repairs to structures and replacement of dead or diseased plant material.
3. Signs and curb painting shall be utilized on site to encourage parking in designated parking spaces.
4. Litter shall be removed daily from the premises, including adjacent public sidewalks and all parking areas under the control of the licensee.
5. All areas under control of the licensee shall be swept or cleaned, either mechanically or manually, on a weekly basis to control debris.
6. No major mechanical auto repair or auto body repair shall take place on the premises.
7. No new or used tires, auto parts or merchandise shall be permitted on the premises outside the service station building.

8. To place at least one 13-gallon trash receptacle inside business and one 32-gallon trash receptacle outside business for use by customers.

We are a responsible retailer of alcoholic beverages. Moreover, the sale of alcoholic beverages is not our primary purpose. In accordance with our marketing standards and state law, we will adhere to the following standards:

1. No display of any alcohol-related advertising at the fuel islands.

2. No illuminated (i.e. neon) alcohol advertising will be located in the windows or on the storefront.

3. No beer or wine will be sold from ice tubs.

4. Employees on duty between the hours of 10 p.m. and 2:00 a.m. who sell beer and wine shall be at least 21 years of age.

5. Alcoholic beverage sales shall be limited to beer and wine only with no distilled spirits sold.

6. No beer and wine will be displayed within five feet of the cash register or the front door.

7. The sale and delivery of alcoholic beverages shall be made only to persons who are within the licensed premises, and not through a pass-out window or a slide out tray to the exterior of the premises.

8. No alcoholic beverages shall be sold to any person while such person is in a motor vehicle.

9. The sale of products, other than alcoholic beverages, measured by gross receipts on an annual basis shall not exceed the annual sales of alcoholic beverage products, measured by gross receipts.

We are committed to a mini market that allows for safe family-oriented shopping. This is achieved by placing large windows along the front of the building so that passing motorists and police have a direct view into the facility. We will:

1. Post a sign in the window to identity that the cash register contains $50.00 or less in cash and the drop safe is not accessible to employees.

2. Ensure no more than 33 percent of the square footage of the windows and clear doors of an off-sale premises shall bare advertising or signs of any sort, and all advertising and signage shall be placed and maintained in a manner that ensures that law enforcement personnel have a clear and unobstructed view of the interior of the premises, including the area in which the cash registers are maintained, from the exterior public sidewalk or entrance.

3. A video camera shall be mounted inside the premises in such a position as to be visible to patrons, yet not accessible by reach.

4. Post and maintain a professional quality sign stating, “No loitering is allowed on or in front of these premises.”

5. Post and maintain a professional quality sign stating, “No open alcoholic beverage containers are allowed on these premises.”

6. No benches, newspaper racks, or any other objects that tend to encourage loitering shall be maintained on the premises.

7. Post in English and the predominant language of the facility’s clientele a notice that California state law prohibits the sale of alcoholic beverages to persons who are under the age of twenty-one (21) years and no such sales will be made.

8. The possession of alcoholic beverages in open containers or the consumption of alcoholic beverages is prohibited on the premises.

9. The parking lot of the premises shall be equipped with lighting of sufficient power to illuminate and make easily discernible the appearance and conduct of all persons on or about the parking lot. Additionally, the position of such lighting shall not disturb the normal privacy and use of any neighboring residences.

In addition, we recognize the seriousness of loitering, delinquency, crime and underage drinking. Therefore, our markets have developed stringent operational standards and training programs to teach techniques for the lawful selling of alcoholic beverages. Also, we require all employees selling alcoholic beverages to execute an ABC “Clerk’s Affidavit” (ABC-299), which contains a review of ABC laws.

Through many years of operating convenience stores, we have developed our own standards of operation. As part of those standards, we voluntarily suggest that the following conditions to be placed on the alcoholic beverage license:

1. There shall be no cups, glasses, or similar receptacles commonly used for the drinking of beverages, sold, furnished or given away at the petitioner's premises in quantities of less than twenty-four in their original multi-container package.

2. All ice shall be sold at or about prevailing prices in the area and in quantities of not less than 5 pounds per sale and shall not be given away.

3. No malt beverage products shall be sold, regardless of individual container size, in quantities of less than six per sale, except that malt-based cooler may be carried and sold in factory-packaged 4-packs.

4. Wine shall not be sold in bottles or containers smaller than 750 ml and wine coolers and beer coolers must be sold in the manufacturer pre-packaged multi-unit quantities.

5. Alcoholic beverages offered for sale at the licensed premises shall be displayed and available for convenient inspection and purchase within the premises by the general public.

6. There shall be no coin operated games or video machines maintained on the premises.

7. No wine shall be sold with an alcoholic beverage content of greater than 15% by volume except for "Dinner wines" which have been aged two or more years and maintained in corked bottles.

4. **The site will not result in an adverse impact on public health, safety, or welfare:** Presently, the site does not negatively impact public health, safety, or welfare. In fact, by providing new safe and convenient location to make quick purchases, public health, safety, and welfare have been advanced by this site. The addition of selling beer and wine will not change this.

But beyond this, it should be noted that we have a very extensive training program for its employees to help ensure that it is a responsible retailer of alcoholic beverages. There are both oral and written aspects to our training program to ensure that employees understand and

implement the procedures imposed by We to comply with ABC laws and regulations. Indeed, we will likely be a more responsible retailer of beer and wine than any other retailer in the area.

We realize that a healthy community translates to healthy business, and is willing to accept the City imposition of these conditions when a license is issued in order to ensure that the public health, safety, and welfare are protected. They include, but are not limited to, voluntary prohibition of single can sales, prohibition of certain advertisements, and prohibitions of certain fortified beers and individual wine containers.

In short, we are committed to protecting the public health, safety, and welfare of the community, and will take appropriate steps to do so. The sale of beer and wine on the site will ***not*** threaten these important concerns.

5. Community Service and Investment

We are committed to improving the communities they operate within. This location will support the city of Rancho Cordova in several ways. Initially, revenues from the construction of this project, including all applicable city permits and fees, will filter into the city. Once this project is completed and operating, we estimate sales tax revenues will provide up to an additional $600,000 annually. Moreover, investment of over $7,000,000 in the site will increase the property tax base. Finally, with our reputation as a low-price fuel leader, gas price competition in the area will increase, thereby benefiting the residents of the community.

6. Operations

J&T Investments through its Operations Team will be responsible for the operation of the convenience market, we take great pride in our training programs and the results we achieve. We are including as part of this request, information about our company, leadership team and training programs.

Each location employs approximately (15) employees including the manager, assistant manager and hourly staff. Each staff member is trained during their (3) day orientation which includes the following areas:

1. Expectations
2. Responsibilities
3. Hazmat training
4. Injury and Illness prevention
5. Cleanliness and housekeeping
6. Tobacco and Alcohol training
7. Food Service
8. Merchandising
9. Customer Service
10. Cash register
11. We Care – We Card program / Age comparison documentation
12. C-store video surveillance (please see attached mock diagram of the surveillance views for your reference).

Each (6) months we conduct refresher training with the managers and cashiers at all locations with our Operations Supervisor. We employ an outside secret shopper that visits our locations to make sure employees adhere to company policies and procedures. Any employee who violates company policy in terms of customer service or a violation with regards to alcohol and tobacco sales, is immediately terminated. Our standard shift schedules are listed below:

- 6:00am – 2:00pm (Manager on duty)

- 2:00pm – 11:00pm (Asst. Manager on duty)
- 11:00pm – 6:00am (2 employees on duty over 21 years of age)

Our Operations Supervisor has (24) hour live feed of all of our locations on his laptop and consistently enforces policies and procedures.

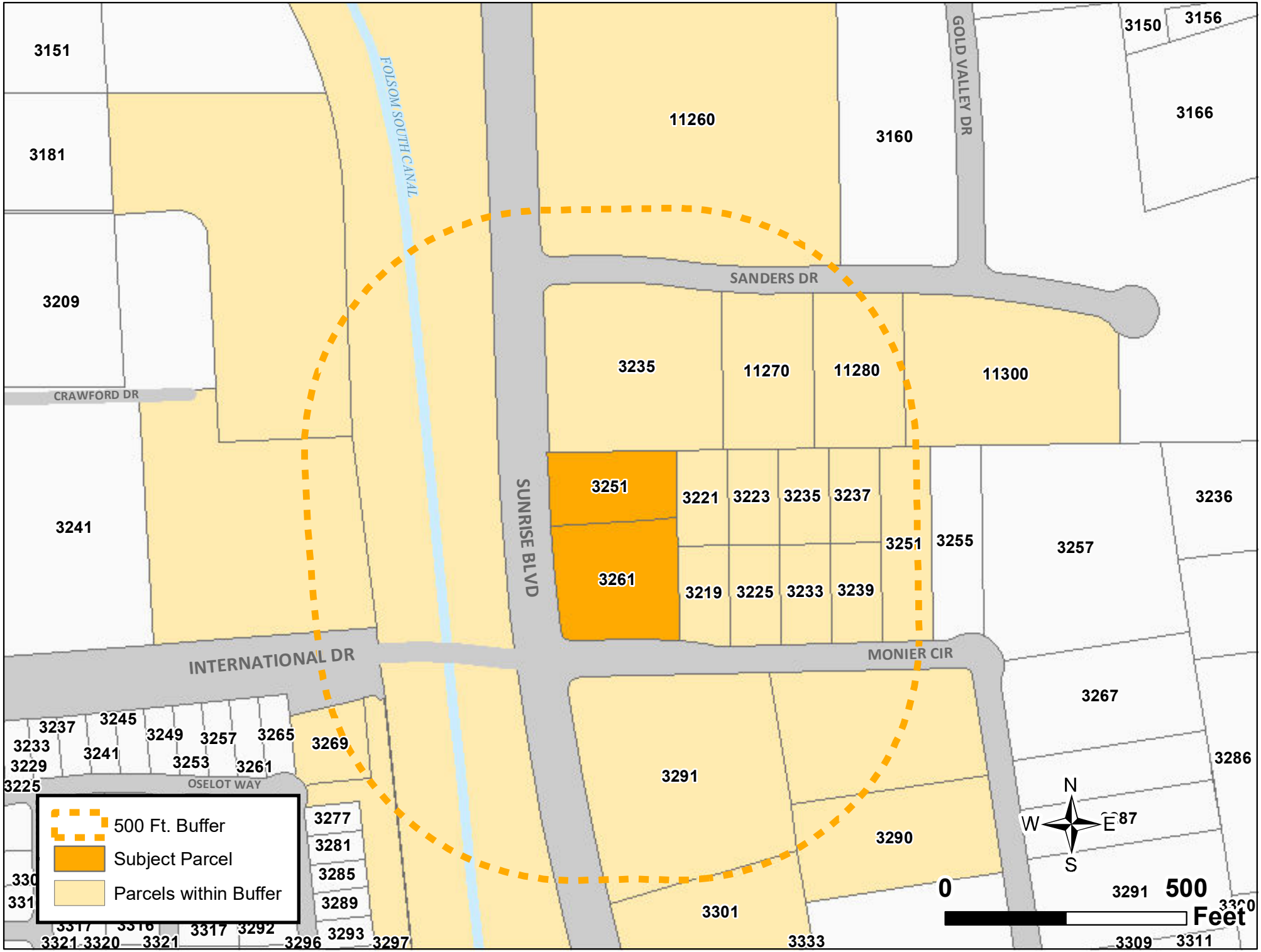
CONCLUSION

Our organization has been a responsible retailer of alcoholic beverages in California. Permitting the sale of beer and wine at the site will not change this, but will 'round-out' our Convenience Market concept at this site, providing customers the added convenience to make quick, efficient, and safe purchases of beer and wine. Based on the foregoing, we respectfully request that the City of Rancho Cordova support the issuance of an off-sale beer and wine license for this site.

Thank you for your attention to this matter.

Sincerely,

Hagop "Jack" Kofdarali
President
J&T Investments, Inc.


3151
3181
3209
3241
3150
3156
3166
11260
3160
GOLD VALLEY DR
FOLSOM SOUTH CANAL
SANDERS DR
3235
11270
11280
11300
CRAWFORD DR
3251
3261
3221
3223
3235
3237
3219
3225
3233
3239
3251
3255
3257
3236
SUNRISE BLVD
INTERNATIONAL DR
MONIER CIR
3267
3286
3291
3290
3301
3333
3309
3311
3237
3245
3233
3241
3249
3257
3265
3229
3253
3261
3225
OSELOT WAY
3269
3277
3281
3285
3289
3293
3297
3296
3292
3317
3321
3320
3321
330
331
500 Ft. Buffer
Subject Parcel
Parcels within Buffer
N
W
E
S
0
500
Feet

UNITED STATES OF AMERICA
1 NO ADDRESS
SACRAMENTO CA 95826

SEROS FAMILY TRUST
10111 SAVONA DR
SACRAMENTO CA 95829

RECALDE J CARLOS/RUTH
10410 N CAVE CREEK RD 1218
PHOENIX AZ 85020

CURRENT TENANT
11260 WHITE ROCK RD
RANCHO CORDOVA CA 95742

CURRENT TENANT
11270 SANDERS DR
RANCHO CORDOVA CA 95742

CURRENT TENANT
11270 SANDERS DR # E
RANCHO CORDOVA CA 95742

CURRENT TENANT
11270 SANDERS DR # A
RANCHO CORDOVA CA 95742

CURRENT TENANT
11270 SANDERS DR # D
RANCHO CORDOVA CA 95742

CURRENT TENANT
11270 SANDERS DR # E
RANCHO CORDOVA CA 95742

CURRENT TENANT
11270 SANDERS DR # F
RANCHO CORDOVA CA 95742

CURRENT TENANT
11270 SANDERS DR STE B
RANCHO CORDOVA CA 95742

CURRENT TENANT
11270 SANDERS DR STE C
RANCHO CORDOVA CA 95742

CURRENT TENANT
11280 SANDERS DR
RANCHO CORDOVA CA 95742

CURRENT TENANT
11280 SANDERS DR # A
RANCHO CORDOVA CA 95742

CURRENT TENANT
11280 SANDERS DR # B
RANCHO CORDOVA CA 95742

CURRENT TENANT
11280 SANDERS DR # C
RANCHO CORDOVA CA 95742

CURRENT TENANT
11300 SANDERS DR
RANCHO CORDOVA CA 95742

CURRENT TENANT
11300 SANDERS DR # 1
RANCHO CORDOVA CA 95742

CURRENT TENANT
11300 SANDERS DR # 10
RANCHO CORDOVA CA 95742

CURRENT TENANT
11300 SANDERS DR # 11
RANCHO CORDOVA CA 95742

CURRENT TENANT
11300 SANDERS DR # 12
RANCHO CORDOVA CA 95742

CURRENT TENANT
11300 SANDERS DR # 13
RANCHO CORDOVA CA 95742

CURRENT TENANT
11300 SANDERS DR # 14
RANCHO CORDOVA CA 95742

CURRENT TENANT
11300 SANDERS DR # 16
RANCHO CORDOVA CA 95742

CURRENT TENANT
11300 SANDERS DR # 17
RANCHO CORDOVA CA 95742

CURRENT TENANT
11300 SANDERS DR # 18
RANCHO CORDOVA CA 95742

CURRENT TENANT
11300 SANDERS DR # 19
RANCHO CORDOVA CA 95742

CURRENT TENANT
11300 SANDERS DR # 20
RANCHO CORDOVA CA 95742

CURRENT TENANT
11300 SANDERS DR # 21
RANCHO CORDOVA CA 95742

CURRENT TENANT
11300 SANDERS DR # 22
RANCHO CORDOVA CA 95742

CURRENT TENANT
11300 SANDERS DR # 24
RANCHO CORDOVA CA 95742

CURRENT TENANT
11300 SANDERS DR # 25
RANCHO CORDOVA CA 95742

CURRENT TENANT
11300 SANDERS DR # 26
RANCHO CORDOVA CA 95742

CURRENT TENANT
11300 SANDERS DR # 29
RANCHO CORDOVA CA 95742

CURRENT TENANT
11300 SANDERS DR # 30
RANCHO CORDOVA CA 95742

CURRENT TENANT
11300 SANDERS DR # 310
RANCHO CORDOVA CA 95742

CURRENT TENANT
11300 SANDERS DR # 7
RANCHO CORDOVA CA 95742

CURRENT TENANT
11300 SANDERS DR # 9
RANCHO CORDOVA CA 95742

MJK AUTO SALES INC
12229 HABITAT WAY
RANCHO CORDOVA CA 95742

CONRAD ETHAN
1300 NATIONAL DR STE 100
SACRAMENTO CA 95834

PARCEL 4 LLC
1410 ROCKY RIDGE DR STE 170
ROSEVILLE CA 95661

TJ HOLDINGS LP
1545 RIVER PARK DR 375
SACRAMENTO CA 95815

ISTORAGE JV SUNRISE MONIER LLC
1801 WEWATTA ST 1000
DENVER CO 80202

PEASE TRUST
185 CADILLAC DR
SACRAMENTO CA 95825

CORDOVA REC/PARK DISTRICT
2729 PROSPECT PARK DR STE 230
RANCHO CORDOVA CA 95670

UVX MONIER CIR LLC
3219 MONIER CIR
RANCHO CORDOVA CA 95742

NURTER LLC
322 W 22ND ST
UPLAND CA 91784

CURRENT TENANT
3221 MONIER CIR
RANCHO CORDOVA CA 95742

VAN HILL ANITA/JAMES
3223 MONIER CIR
RANCHO CORDOVA CA 95742

CRANDYHA LLC
3225 MONIER CIR
RANCHO CORDOVA CA 95742

CURRENT TENANT
3225 MONIER CIR STE 100
RANCHO CORDOVA CA 95742

CURRENT TENANT
3225 MONIER CIR STE 200
RANCHO CORDOVA CA 95742

CURRENT TENANT
3233 MONIER CIR
RANCHO CORDOVA CA 95742

EBDC PROPERTIES LLC
3233 MONIER CIR # A
RANCHO CORDOVA CA 95742

CURRENT TENANT
3234 MONIER CIR
RANCHO CORDOVA CA 95742

MARILAO TROY J
3234 MONIER CIR # A
RANCHO CORDOVA CA 95742

DE SENING MARIA ROJAS
3234 MONIER CIR # D
RANCHO CORDOVA CA 95742

CURRENT TENANT
3234 MONIER CIR # E
RANCHO CORDOVA CA 95742

CURRENT TENANT
3234 MONIER CIR # F
RANCHO CORDOVA CA 95742

SINGH JASPREET/BALJIT
3235 MONIER CIR
RANCHO CORDOVA CA 95742

CURRENT TENANT
3235 MONIER CIR # 1
RANCHO CORDOVA CA 95742

CURRENT TENANT
3235 MONIER CIR # 2
RANCHO CORDOVA CA 95742

CURRENT TENANT
3235 MONIER CIR # 3
RANCHO CORDOVA CA 95742

CURRENT TENANT
3235 MONIER CIR # 4
RANCHO CORDOVA CA 95742

CURRENT TENANT
3235 MONIER CIR # 5
RANCHO CORDOVA CA 95742

CURRENT TENANT
3235 SUNRISE BLVD
RANCHO CORDOVA CA 95742

CURRENT TENANT
3235 SUNRISE BLVD # 1
RANCHO CORDOVA CA 95742

CURRENT TENANT
3235 SUNRISE BLVD # 2
RANCHO CORDOVA CA 95742

CURRENT TENANT
3235 SUNRISE BLVD # 3
RANCHO CORDOVA CA 95742

CURRENT TENANT
3235 SUNRISE BLVD # 4
RANCHO CORDOVA CA 95742

CURRENT TENANT
3235 SUNRISE BLVD # 5
RANCHO CORDOVA CA 95742

CURRENT TENANT
3235 SUNRISE BLVD # 6
RANCHO CORDOVA CA 95742

CURRENT TENANT
3237 MONIER CIR
RANCHO CORDOVA CA 95742

CURRENT TENANT
3237 MONIER CIR STE 1
RANCHO CORDOVA CA 95742

CURRENT TENANT
3237 MONIER CIR STE 3
RANCHO CORDOVA CA 95742

CURRENT TENANT
3237 MONIER CIR STE 5
RANCHO CORDOVA CA 95742

CURRENT TENANT
3239 MONIER CIR
RANCHO CORDOVA CA 95742

CURRENT TENANT
3239 MONIER CIR STE 1
RANCHO CORDOVA CA 95742

CURRENT TENANT
3239 MONIER CIR STE 2
RANCHO CORDOVA CA 95742

CURRENT TENANT
3239 MONIER CIR STE 3
RANCHO CORDOVA CA 95742

CURRENT TENANT
3239 MONIER CIR STE 4
RANCHO CORDOVA CA 95742

CURRENT TENANT
3239 MONIER CIR STE 5
RANCHO CORDOVA CA 95742

CURRENT TENANT
3250 MONIER CIR
RANCHO CORDOVA CA 95742

CURRENT TENANT
3250 MONIER CIR # A
RANCHO CORDOVA CA 95742

URBANIK JEFFREY
3250 MONIER CIR # B
RANCHO CORDOVA CA 95742

THEIS DEVELOPMENT LLC
3250 MONIER CIR # C
RANCHO CORDOVA CA 95742

CURRENT TENANT
3250 MONIER CIR # D
RANCHO CORDOVA CA 95742

ABC3000 LLC
3250 MONIER CIR # E
RANCHO CORDOVA CA 95742

ABC3000 LLC
3250 MONIER CIR # F
RANCHO CORDOVA CA 95742

ABC3000 LLC
3250 MONIER CIR # G
RANCHO CORDOVA CA 95742

CURRENT TENANT
3250 MONIER CIR # H
RANCHO CORDOVA CA 95742

CURRENT TENANT
3250 MONIER CIR # I
RANCHO CORDOVA CA 95742

CURRENT TENANT
3250 MONIER CIR # J
RANCHO CORDOVA CA 95742

SPECKERT LIVING TRUST
3250 MONIER CIR # K
RANCHO CORDOVA CA 95742

RUSSELL ADVENTURES LLC
3251 MONIER CIR
RANCHO CORDOVA CA 95742

CURRENT TENANT
3251 MONIER CIR STE A
RANCHO CORDOVA CA 95742

CURRENT TENANT
3251 SUNRISE BLVD
RANCHO CORDOVA CA 95742

CURRENT TENANT
3261 SUNRISE BLVD
RANCHO CORDOVA CA 95742

CURRENT TENANT
3269 OSELOT WAY
RANCHO CORDOVA CA 95670

CURRENT TENANT
3290 MONIER CIR
RANCHO CORDOVA CA 95742

CURRENT TENANT
3290 MONIER CIR # A
RANCHO CORDOVA CA 95742

CURRENT TENANT
3290 MONIER CIR # B
RANCHO CORDOVA CA 95742

CURRENT TENANT
3290 MONIER CIR STE 100
RANCHO CORDOVA CA 95742

CURRENT TENANT
3290 MONIER CIR STE 150
RANCHO CORDOVA CA 95742

CURRENT TENANT
3291 SUNRISE BLVD
RANCHO CORDOVA CA 95742

CURRENT TENANT
3301 SUNRISE BLVD
RANCHO CORDOVA CA 95742

CURRENT TENANT
3301 SUNRISE BLVD # L
RANCHO CORDOVA CA 95742

CURRENT TENANT
3301 SUNRISE BLVD # A
RANCHO CORDOVA CA 95742

CURRENT TENANT
3301 SUNRISE BLVD # B
RANCHO CORDOVA CA 95742

CURRENT TENANT
3301 SUNRISE BLVD # C
RANCHO CORDOVA CA 95742

CURRENT TENANT
3301 SUNRISE BLVD # D
RANCHO CORDOVA CA 95742

CURRENT TENANT
3301 SUNRISE BLVD # E
RANCHO CORDOVA CA 95742

CURRENT TENANT
3301 SUNRISE BLVD # G
RANCHO CORDOVA CA 95742

CURRENT TENANT
3301 SUNRISE BLVD # H
RANCHO CORDOVA CA 95742

CURRENT TENANT
3301 SUNRISE BLVD # I
RANCHO CORDOVA CA 95742

CURRENT TENANT
3301 SUNRISE BLVD # J
RANCHO CORDOVA CA 95742

CURRENT TENANT
3301 SUNRISE BLVD # K
RANCHO CORDOVA CA 95742

WINTERLING DEBRA L/PETER M
3450 PALMER DR 4-251
CAMERON PARK CA 95682

SIMON BUILDING LLC
3591 PARK DR
EL DORADO HILL CA 95762

GRADUATE N/C MACHINING
3634 EDINGTON DR
RANCHO CORDOVA CA 95742

NOLASCO 2007 FAMILY TRUST
4429 WHISPERING OAK CIR
GRANITE BAY CA 95746

JOHN C/KATHLEEN D BRISTOW
REVOCABLE TRUST/ETAL
4732 ISABELLA AVE
FAIR OAKS CA 95628

TERESA A MCTERNAN SEPARATE
PROPERTY TRUST
476 EBI WAY
FOLSOM CA 95630

STEVEN D FENTON REVOCABLE TRUST
5209 WHITNEY AVE
CARMICHAEL CA 95608

HANDEN FAMILY 2015 REVOCABLE
TRUST
555 SHORELINE POINTE
EL DORADO HILL CA 95762

SOUTHERN CALIFORNIA WATER
COMPANY
630 E FOOTHILL BLVD
SAN DIMAS CA 91773

PRICE COMPANY
999 LAKE DR
ISSAQUAH WA 98027

SACRAMENTO SANITATION DISTRICT
10060 GOETHE ROAD
SACRAMENTO CA 95827

SACRAMENTO REGIONAL COUNTY
SANITATION DISTRICT
10060 GOETHE ROAD
SACRAMENTO CA 95827

SACRAMENTO COUNTY WATER
AGENCY
10151 FLORIN ROAD
SACRAMENTO CA 95829

PG&E
2730 GATEWAY OAKS DRIVE
SACRAMENTO CA 95833

PG&E
343 SACRAMENTO STREET
AUBURN CA 95603

SMUD
6301 S STREET MS B304
SACRAMENTO CA 95817

SMUD
6301 S STREET MS B304
SACRAMENTO CA 95817

SMUD
6301 S STREET MS B404
SACRAMENTO CA 95817

SACRAMENTO METROPOLITAN FIRE
10545 ARMSTRONG AVE STE 310
MATHER CA 95655

FOLSOM CORDOVA UNIFIED SCHOOL
DISTRICT
1965 BIRKMONT DRIVE
RANCHO CORDOVA CA 95742

SACRAMENTO COUNTY WATER
AGENCY
827 7TH STREET RM 301
SACRAMENTO CA 95814

CITY OF RANCHO CORDOVA
2729 PROSPECT PARK DR
RANCHO CORDOVA CA 95670

MEMORANDUM

DATE: January 6, 2020

TO: Honorable Mayor and Council Members

FROM: Darcy Goulart, Planning Manager

SUBJECT: **AN ORDINANCE AMENDING THE RANCHO CORDOVA MUNICIPAL CODE RELATED TO TITLE 22 (LAND DEVELOPMENT), CHAPTER 22.40 PARK AND RECREATION DEDICATION AND FEES**

RECOMMENDATION

Introduce and waive the first reading of the Ordinance that will incorporate new factors for age-restricted single-family and multi-family dwelling units.

RESULT OF RECOMMENDED ACTION

The Ordinance would come back for a second reading and adoption at the next regular City Council meeting. Approval of the Ordinance would amend Title 22 Land Development, Chapter 22.40 Park and Recreation Dedication and Fees.

BACKGROUND

Title 22, Chapter 22.40 Park and Recreation Dedication and Fees outlines the parkland dedication requirements for various residential uses, but does not have a factor for age-restricted residential uses. The proposed amendments would incorporate new factors for age-restricted single-family and multi-family dwelling units.

ANALYSIS

Attachment 3 includes all draft amendments to Title 22 Land Development. Draft amendments are shown with track changes with new draft language underlined and language proposed for removal with strikethroughs. Only those chapters and/or sections with proposed changes are included in the attached documents as excerpts from the Rancho Cordova Municipal Code. A summary of the changes is provided below. As a note, Attachment 2 includes all the amendments in a non-track change format. This is provided as an exhibit to the Ordinance.

Title 22 Land Development, Chapter 22.40 Park and Recreation Dedication and Fees

Section 22.40.035 Calculating area of land dedications

This section is being amended to include definitions and numerical factors, as well as persons

per household for calculating park land dedication for age-restricted communities. These ratios are based upon the City's desire to uphold a higher standard of parks and park amenities to ensure that the City will always have adequate park facilities for its residents. Generally, age-restricted developments have a lower person's per household ratio and these proposed calculations take that into consideration.

ENVIRONMENTAL ANALYSIS

The California Environmental Quality Act (CEQA) requires analysis of agency approvals of discretionary "projects." A "project," under CEQA, is defined as "the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment." (CEQA Guidelines, § 15378.) As reflected in State CEQA Guideline 15061 (b) (3), an activity is not subject to CEQA, "[where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment…" The proposed amendments are not a "project" within the meaning of CEQA because the amendments seek to further regulate or clarify uses that are already present in the City or provide consistency with State law and no significant expansion of these activities can reasonably be anticipated to occur. Because no expansion of uses or activities is reasonably anticipated, no possibility exists that the ordinance will result in a significant effect on the environment. Thus, the proposed ordinance is not subject to the requirements of CEQA. However, in the event that adoption of the ordinance is considered a CEQA project, it would nonetheless qualify for categorical exemptions as set forth below.

CEQA Guidelines Section 15061(b)(3) states that a project is exempt from CEQA "where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment." The approval of the code amendments set forth in the proposed ordinance does not approve any physical development project, and it would not result in a direct or indirect physical changes in the environment. The proposed changes are merely to incorporate park dedication calculations for age-restricted housing and reflect best management practices. Any specific development projects that may result from these changes will be subject to environmental review. The proposed amendments are consistent with the City's General Plan. For these reasons, the proposed amendments would not have the potential to result in individually or cumulatively significant effects on the environment and these Municipal Code amendments are exempt from review under CEQA and no further environmental review is necessary.

FISCAL IMPACT AND FUNDING SOURCE

There is no anticipated fiscal impact of the proposed action on City finances.

ATTACHMENT(S)

1. Attachment 1 - Ordinance
2. Attachment 2_Exhibit A to Ordinnace XX-2020
3. Attachment 3_DRAFT AMENDMENTS TRACK CHANGES

CITY OF RANCHO CORDOVA

ORDINANCE NO. XX-2020

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF RANCHO CORDOVA, STATE OF CALIFORNIA, TITLE 22 (LAND DEVELOPMENT), CHAPTER 22.40 PARK OF THE RANCHO CORDOVA MUNICIPAL CODE

THE CITY COUNCIL OF THE CITY OF RANCHO CORDOVA DOES ORDAIN AS FOLLOWS:

Section 1. Purpose and Declarations.

WHEREAS, the City conducts periodic updates of the provisions of the Municipal Code to ensure compliance with current laws, changes in local policy, consistency with adopted plans and programs, clarify ambiguities, address changing market conditions, reflect best practices, and to address issues or concerns with current regulations; and

WHEREAS, certain amendments to the Title 22 (Land Development), Chapter 22.40 Park and Recreation Dedication and Fees is to incorporate dedication calculations for age-restricted housing; and

WHEREAS, on January 6, 2020 the City Council held a properly noticed public hearing for this Ordinance and considered all oral and written testimony.

Section 2: Findings. The City Council hereby finds:

A. **CEQA Compliance.** CEQA requires analysis of agency approvals of discretionary "projects." A "project," under CEQA, is defined as "the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment." (CEQA Guidelines, § 15378.) As reflected in State CEQA Guideline 15061 (b) (3), an activity is not subject to CEQA, "[where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment…" The proposed amendments are not a "project" within the meaning of CEQA because the amendments seek to further regulate or clarify uses that are already present in the City or provide consistency with State law and no significant expansion of these activities can reasonably be anticipated to occur. Because no expansion of uses or activities is reasonably anticipated, no possibility exists that the ordinance will result in a significant effect on the environment. Thus, the proposed ordinance is not subject to the requirements of CEQA. However, in the event that adoption of the ordinance is considered a CEQA project, it would nonetheless qualify for categorical exemptions as set forth below.

CEQA Guidelines Section 15061(b)(3) states that a project is exempt from CEQA "where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment." The approval of the code amendments set forth in the proposed ordinance does not approve any physical development project, and it would not result in a direct or indirect physical changes in the environment. The proposed changes are merely to incorporate park dedication calculations for age-restricted housing. Any specific development projects that may result from these changes will be subject to environmental review. The proposed amendments are consistent with the City's General Plan. For these reasons, the proposed amendments would not have the potential to result in individually or cumulatively

significant effects on the environment and these Municipal Code amendments are exempt from review under CEQA and no further environmental review is necessary.

B. **The proposed amendment is consistent with the General Plan.** The attached Municipal Code Amendments ("Amendment") are consistent with the General Plan. The amendments would incorporate provisions for park dedication on age-restricted housing development. The amendments would not have any conflicts with existing General Plan goals and policies.

C. **The proposed amendment would not be detrimental to the public interest, health, safety, convenience, or welfare of the City.** The attached amendment is focused on reflecting best practices. None of these proposed amendments will be detrimental to the public interest, health, safety, convenience, or welfare of the City as they ensure adequate park land dedication for age-restricted housing developments and provide clarification on definitions.

D. **The proposed amendments are internally consistent with other applicable provisions of this zoning code.** The Amendments have been reviewed for consistency with the entirety of the Municipal Code and is consistent with other applicable provisions of the Municipal Code.

Section 3. Amendments to Title 22 Land Development

The City Council hereby adopts the amendments to Chapter 22.40 Park and Recreation Dedication and Fees of Title 22 of the Rancho Cordova Municipal Code (Land Development), as shown and incorporated in **Exhibit A** to this ordinance.

Section 4. Severability

If any provision of this Ordinance or the application thereof to any person or circumstance, is held invalid, the remainder of the Ordinance, including the application of such part or provision to other persons or circumstances shall not be affected thereby and shall continue in full force and effect. To this end, provisions of this Ordinance are severable. The City Council hereby declares that it would have passed each section, subsection, subdivision, paragraph, sentence, clause or phrase hereof irrespective of the fact that any one or more sections, subsections, subdivisions, paragraphs, sentences, clauses, or phrases be held unconstitutional, invalid or unenforceable.

Section 5. Effective Date

Within fifteen (15) days after adoption, a Summary of this Ordinance shall be published once in the Grapevine Independent, or the Sacramento Bee, a newspaper of general circulation printed and published in Sacramento County and circulated in the City of Rancho Cordova, in accordance with Government Code Section 36933. This Ordinance shall take effect and be enforced thirty (30) days after its inception.

PASSED AND ADOPTED by the City Council of the City of Rancho Cordova on the ____ day of _____, 2020 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

David M. Sander, Mayor

ATTEST:

Stacy Leitner, CMC
City Clerk

Rancho Cordova

Municipal Code Amendments

Note to Reader: Section placeholders to indicate the sections between changed subsections remain the same are indicated with three stars (***).

Title 22 Land Development

Chapter 22.40 Park and Recreation Dedication and Fees

Chapter 22.40
PARK AND RECREATION DEDICATION AND FEES

***

22.40.035 Calculating area of land dedication.

***

B. Definitions. For purposes of this section, the following definitions shall apply:

"Dwelling unit" means one or more rooms in a building or structure or portion thereof designed exclusively for residential occupancy by one family for living or sleeping purposes and having kitchen and bath facilities, including mobile homes.

"Single-family dwelling" means a dwelling unit comprised of a detached building designed for occupancy by one family.

"Small-family dwelling" means a residential building or structure designed and used for or proposed for residential occupancy by two to six families and having a kitchen and bath facilities for each family, including two-family, group and row dwelling units.

"Multiple-family dwelling" means a residential building or structure designed and used for or proposed for residential occupancy by seven or more families and having a kitchen and bath facilities for each family.

"Mobile home" means a dwelling unit used for or proposed for residential occupancy in vehicles which require a permit to be moved on a highway, other than a motor vehicle designed or used for human habitation and for being drawn by another vehicle.

"Age-restricted single-family dwelling" means a dwelling unit comprised of a detached building designed for occupancy by one or more persons fifty-five (55) years of age or older.

"Age-restricted multi-family dwelling" means a residential building or structure for occupancy by persons fifty-five (55) years of age or older, designed and used for or proposed for residential occupancy by seven or more families and having a kitchen and bath facilities for each family.

C. The factors .01475, .0101, .0077,.0086, .01 and .0052 are constants determined from an analysis of population trends and studies of Rancho Cordova in accordance with Section 66477(a)(2) of the Government Code, which, when multiplied by the number of dwelling units permitted in the subject area, will produce five acres per 1,000 population to be devoted to neighborhood or community park facilities. This limit has been determined in accordance with Section 66477(a)(2) of the Government Code. The planning director may reestablish such factors annually.

Fs = .01475 relating to single-family dwelling units (2.95 persons/dwelling)

Fm = .0101 relating to small-family dwelling units (2.03 persons/dwelling)

Fa = .0077 relating to multiple-family dwelling units (1.54 persons/dwelling)

Fmh = .0086 relating to mobile home dwelling units (1.72 persons/dwelling)

Fars = .01 relating to age-restricted single-family dwelling units (2.0 person/dwelling)

Fara = .0052 relating to age-restricted multifamily residential units (1.04 persons/dwelling)

***

Rancho Cordova

Municipal Code Amendments

Note to Reader: Section placeholders to indicate the sections between changed subsections remain the same are indicated with three stars (***).

Title 22 Land Development

Chapter 22.40 Park and Recreation Dedication and Fees

Chapter 22.40
PARK AND RECREATION DEDICATION AND FEES

***

22.40.035 Calculating area of land dedication.

***

B. Definitions. For purposes of this section, the following definitions shall apply:

"Dwelling unit" means one or more rooms in a building or structure or portion thereof designed exclusively for residential occupancy by one family for living or sleeping purposes and having kitchen and bath facilities, including mobile homes.

"Single-family dwelling" means a dwelling unit comprised of a detached building designed for occupancy by one family.

"Small-family dwelling" means a residential building or structure designed and used for or proposed for residential occupancy by two to six families and having a kitchen and bath facilities for each family, including two-family, group and row dwelling units.

"Multiple-family dwelling" means a residential building or structure designed and used for or proposed for residential occupancy by seven or more families and having a kitchen and bath facilities for each family.

"Mobile home" means a dwelling unit used for or proposed for residential occupancy in vehicles which require a permit to be moved on a highway, other than a motor vehicle designed or used for human habitation and for being drawn by another vehicle.

"Age-restricted single-family dwelling" means a dwelling unit comprised of a detached building designed for occupancy by one or more persons fifty-five (55) years of age or older.

"Age-restricted multi-family dwelling" means a residential building or structure for occupancy by persons fifty-five (55) years of age or older, designed and used for or proposed for residential occupancy by seven or more families and having a kitchen and bath facilities for each family.

C. The factors .01475, .0101, .0077, ~~and~~ .0086, .01 and .0052 are constants determined from an analysis of population trends and studies of Rancho Cordova in accordance with Section 66477(a)(2) of the Government Code, which, when multiplied by the number of dwelling units permitted in the subject area, will produce five acres per 1,000 population to be devoted to neighborhood or community park facilities. This limit has been determined in accordance with Section 66477(a)(2) of the Government Code. The planning director may reestablish such factors annually.

Fs = .01475 relating to single-family dwelling units (2.95 persons/dwelling)

Fm = .0101 relating to small-family dwelling units (2.03 persons/dwelling)

Fa = .0077 relating to multiple-family dwelling units (1.54 persons/dwelling)

Fmh = .0086 relating to mobile home dwelling units (1.72 persons/dwelling)

Fars = .01 relating to age-restricted single-family dwelling units (2.0 person/dwelling)

Fara = .0052 relating to age-restricted multifamily residential units (1.04 persons/dwelling)

***

MEMORANDUM

DATE: January 6, 2020

TO: Honorable Mayor and Council Members

FROM: June Cowles, Senior Planner

SUBJECT: **THE RANCH SPECIAL PLANNING AREA– PROJECT NO. DD9725 – GENERAL PLAN AMENDMENT, REZONE TO THE RANCH SPECIAL PLANNING AREA, DEVELOPMENT AGREEMENT, AFFORDABLE HOUSING PLAN, LARGE LOT AND SMALL LOT TENTATIVE SUBDIVISION MAP**

RECOMMENDATION

Recommend the City Council approve The Ranch Special Planning Area, a project that proposes mixed use development on approximately 530 acres east of Rancho Cordova Parkway and south of Douglas Boulevard:

- Adopt the Resolution Certifying The Ranch Environmental Impact Report and Adopting Environmental Findings, a Statement of Overriding Considerations, and a Mitigation Monitoring and Reporting Plan for the Ranch Special Planning Area.
- Adopt the Resolution approving a General Plan Amendment, and Large Lot and Small Lot Tentative Subdivision Maps with attached Conditions of Approval.
- Introduce and waive the first reading of the Ordinance Approving the Rezone for The Ranch Property from Agricultural 80 to The Ranch Special Planning Area which would establish a land plan, zoning standards, and design guidelines, as well as preliminary phasing plans.
- Introduce and waive the first reading of the Ordinance Approving the Development Agreement and Appendices for The Ranch project.
- Adopt the Resolution Approving The Ranch Affordable Housing Plan.

RESULT OF RECOMMENDED ACTION

Adoption of the above-referenced resolutions and ordinances would permit development of The Ranch project and allow the applicant to submit for final maps and necessary improvement plans and building permits to begin construction of the proposed project and associated infrastructure.

BACKGROUND

Adoption of the above-referenced resolutions and ordinances would permit development of The Ranch project and allow the applicant to submit for Final Maps and necessary improvement plans and building permits to begin construction of the proposed project and associated infrastructure.

PROJECT SITE LOCATION
The Ranch Special Planning area includes 530 acres and is located south of Douglas Boulevard and Sunridge Park subdivision and east of Rancho Cordova Parkway, north of the approved Suncreek Specific Plan, and west of Grantline 208 and Arista Del Sol subdivisions. **Figure 1: Project Site Location**.

Figure 1: Project Site Location

BACKGROUND
The Ranch project is located within the Sunrise Douglas Community Plan area. However, the project area was not included in the approved Sunridge Specific Plan nor was it included in the approved Suncreek Specific Plan. The project area within the General Plan is stated as "Suncreek Preserve Planning Area" and includes the following uses;

- A mix of low, medium, and high-density residential units
- Community parks
- Commercial center
- Preserve and creek/drainage corridors
- Connection to the City's open space and trail system

EXISTING SITE CONDITIONS

The 530 acre project site includes the existing features: **Figure 2: Existing Site Conditions**

- Areas of extensive flatlands with wetlands, vernal pools, and seasonal drainage courses scattered throughout the site
- A tributary of Morrison Creek traverses the project site.
- 200 plus acres of a nature preserve to be dedicated
- A 275 foot-wide utility easement occupied by a 230 kV Pacific Gas and Electric (PG&E) transmission line, one 230-kV Sacramento Municipal Utility District (SMUD) transmission line and one 69 k SMUD sub-transmission line.

Figure 2: Existing Site Conditions

PROJECT DESCRIPTION

The Ranch Special Planning Area (SPA) establishes the land plan (zoning map) and zoning regulations for development within the 530 acre project area. Consistent with State law, a Special Planning Area can establish zoning regulations that are different from and unique to the project area. The Ranch SPA includes information about project objectives, relationship to other City documents, setting and surroundings, land use, development standards, circulation,

environmental resources, public utilities, design guidelines and on-site infrastructure phasing plan. Attachment 12, The Ranch Special Planning Area handbook**.** The project includes the following steps:

- The Special Planning Area Plan establishes zoning and a land use plan that reflect/implement the General Plan vision for the project area
- The Special Planning Area advances the City's circulation system
- The South Sacramento Habitat Conservation Plan is a regional effort that will provide development and infrastructure project with a streamlined, predictable federal and state permitting process by creating a Preserve system to protect habitat, open space, and agricultural lands.
- The action on the project protects the integrity of significant investment in the technical studies and project analysis associated with the project EIR
- The EIR will create the foundation and expedite all future environmental review

As outlined in the Special Planning Area, the Ranch project would include 1,690 residential units. Acreage and unit count for general land use categories are summarized below.

Table 1: The Ranch Acreage and Unit Count

Land Use Category	Gross Acres	Dwelling Units	Overall Density
Single Family Residential	114.8	732	6.42
Active Adult Single Family Residential	129.7	705	5.4
Multi-Family Residential	7.14	215	30
Active Adult Multi-Family	1.26	38	30
Commercial	5.73		
Public Parks	14.36		
Private Parks	8.99		
Nature Protected Area	199.48		
Drainage Basin (Protected Area	10.76		
Water Detention	5.62		
Open Space (Public)	14.06		
Landscape Lot (Public)	*5.7		
Landscape Lot (Private)	*5.6		
Private Drive	*1.10		
Private Right-of-way	*32.3		
Public Right-of-way	*21.5		
Major Right-of-way	*18.10		
Total	**530.1**	**1,690**	

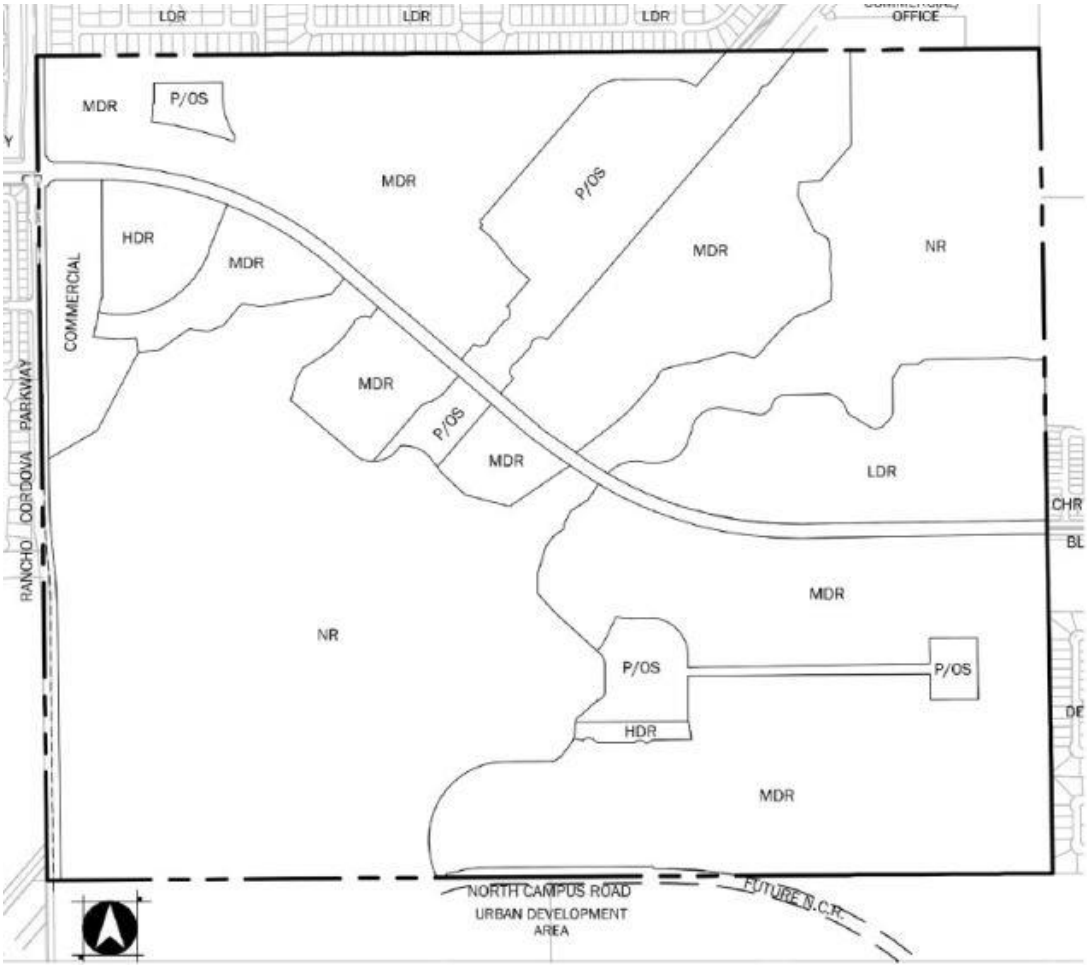
* Net Acreage excludes Private and Public landscape lots, Private drives, and Private and Public Right of Ways

ANALYSIS
The project contains the following items that will be analyzed individually as follows: General Plan Amendment, Rezone, Development Agreement, Affordable Housing Plan, and Large Lot and Small Lot Tentative Subdivision Map, and California Environmental Quality Act Environmental Impact Report.

GENERAL PLAN AMENDMENT:
The proposed General Plan designations for The Ranch , **Figure 3: Proposed General Plan Land Use Map**, are the following:

- Low Density Residential (LDR) 2.1-6.0 du/ac
- Medium Density Residential (MDR) 6.1-18 du/ac
- High Density Residential (HDR) 27.0-50.0 du/ac
- Commercial
- Parks/Open Space (P/OS)
- Natural Resources (NR)

Figure 3: Proposed General Plan Land Use Map



The Ranch is envisioned to be a planned community that illustrates the City's "building blocks" as described in the General Plan. The Ranch is consistent with the City of Rancho Cordova General Plan goals as stated in The Ranch Special Planning Area handbook with supporting evidence (Attachment 12 The Ranch Special Planning Area handbook) and as follows:
Title

- Goal LU.2: Establishes growth patterns based on smart growth principles and City building blocks concept.
- Goal LU.6: Ensure development of the Planning Areas consistent with the City's vision.
- Goal UD.1: Development in keeping with the building block concepts of neighborhoods, villages, and districts.
- Goal UD.3: Create unique project identities that contribute to the overall character of the district and city.
- Goal ED.2: Encourage expansion of retail and services to meet local and regional demands and generate tax revenues for the City.
- Goal H.1: Balanced employment and housing
- Goal H.3: Encourage housing opportunities.
- Goal C.1: Develop a roadway system that accommodates future land uses at the City's desired level of service, provides multiple options for travel routes, protects residential areas from excessive traffic, coexists with other travel modes, and contributes to the quality of the City's residential, commercial, office and industrial areas.
- Goal C.2: Establish an extensive, complete, smooth, interconnected, and continuous pedestrian and bicycle network that is a safe and attractive option for local or regional trips or recreation and that connects to the City's neighborhoods, parks and schools, employment areas, and retail centers
- Goal C.3: Establish a viable transit system that connects all parts of the City and links with regional destinations.
- Goal OSPT.1: Create a premier system of public parks and recreation programs that meet the needs of all residents.
- Goal OSPT.2: Establish a system of open space areas that connect all parts of the community and provide opportunities for passive and neighborhood-based recreation.
- Goal OSPT.3: Create a system of pedestrian and bicycle trails that maximize usage while providing places for walking and bicycling without conflicts with motor vehicles.
- Goal ISF.2: Ensure the development of quality infrastructure to meet community needs at the time they are needed.
- Goal NR.2: Preserve the City's rich and diverse natural wetlands.
- Goal NR.3: Preserve and maintain creek corridors and wetland preserves with useable buffer zones throughout the new development areas as feasible.
- Goal E.1: Reduce greenhouse gas and air pollutant emissions through sustainable features that reduce energy demands, air pollutant emissions, and greenhouse gas emissions compared with conventional development.

In order to amend the General Plan to modify the Land Use Map (Attachment 7) the following findings shall be made:

A. Finding: The proposed amendment is internally consistent with the General Plan.
Evidence: The proposed project area with the proposed land use designations as shown in **Figure 3: Proposed General Land Use Map** are consistent with the General Plan "Suncreek Preserve Planning Area" conceptual plan. In addition, the project is consistent with several of the General Plan goals as stated above and in The Ranch Special Planning Area handbook (Attachment 12 The Ranch Special Planning Area)

B. Finding: The proposed amendment would not be detrimental to the public interest, health, safety, convenience, or welfare of the City.
Evidence: The proposed Ranch SPA will not be detrimental to the public interest, health, safety, convenience, or welfare of the City as the project is expected to result in an improved jobs/housing ratio than what currently exists and includes the designation of public uses including parks and other public or quasi-public uses. The Ranch SPA integrates sustainable development practices at each level of community planning and implementation. It includes retail opportunities for the planned community and the surrounding areas of the City as well as a variety of residential densities resulting in a range of housing opportunities for a range of income levels.

C. Finding: In the case of amendments to the General Plan map, the site is physically suitable (including absence of physical constraints, access, compatibility with adjoining land uses, and provisions of utilities) for the requested/anticipated land use developments.
Evidence: The site is physically suitable for the proposed density of development. The proposed plan is consistent with the General Plan conceptual plan "Suncreek Preserve Planning Area" as the land uses designations show in the **Figure 3: Proposed General Plan Land Use Map**. Natural Resource areas have been avoided to the extent possible. The proposed circulation plan enhances and expands roadway systems in the area with connections to existing roads. The project land use uses are consistent with the surrounding areas that includes residential and natural resources designations. The project infrastructure that includes utilities will connect into existing infrastructure.

D. Finding: The proposed project has been reviewed in compliance with the provisions of CEQA.
Evidence: The Ranch Environmental Impact Report identifies all known and protected resources within the project area. Required protection and mitigation measures have been incorporated into The Ranch SPA and the Mitigation Monitoring Report Plan. The Ranch project is consistent with the General Pan Natural Resources Element Goals NR-2, and NR-3 regarding protection and preservation of wildlife, plant habitats, wetlands and creek corridors.

REZONE:

The proposed Ranch rezone is from Agriculture 80 zoning district to Special Planning Area zoning district. The Ranch SPA applied the "building blocks" to create a walkable, livable, and sustainable development that is consistent with the General Plan as follows:

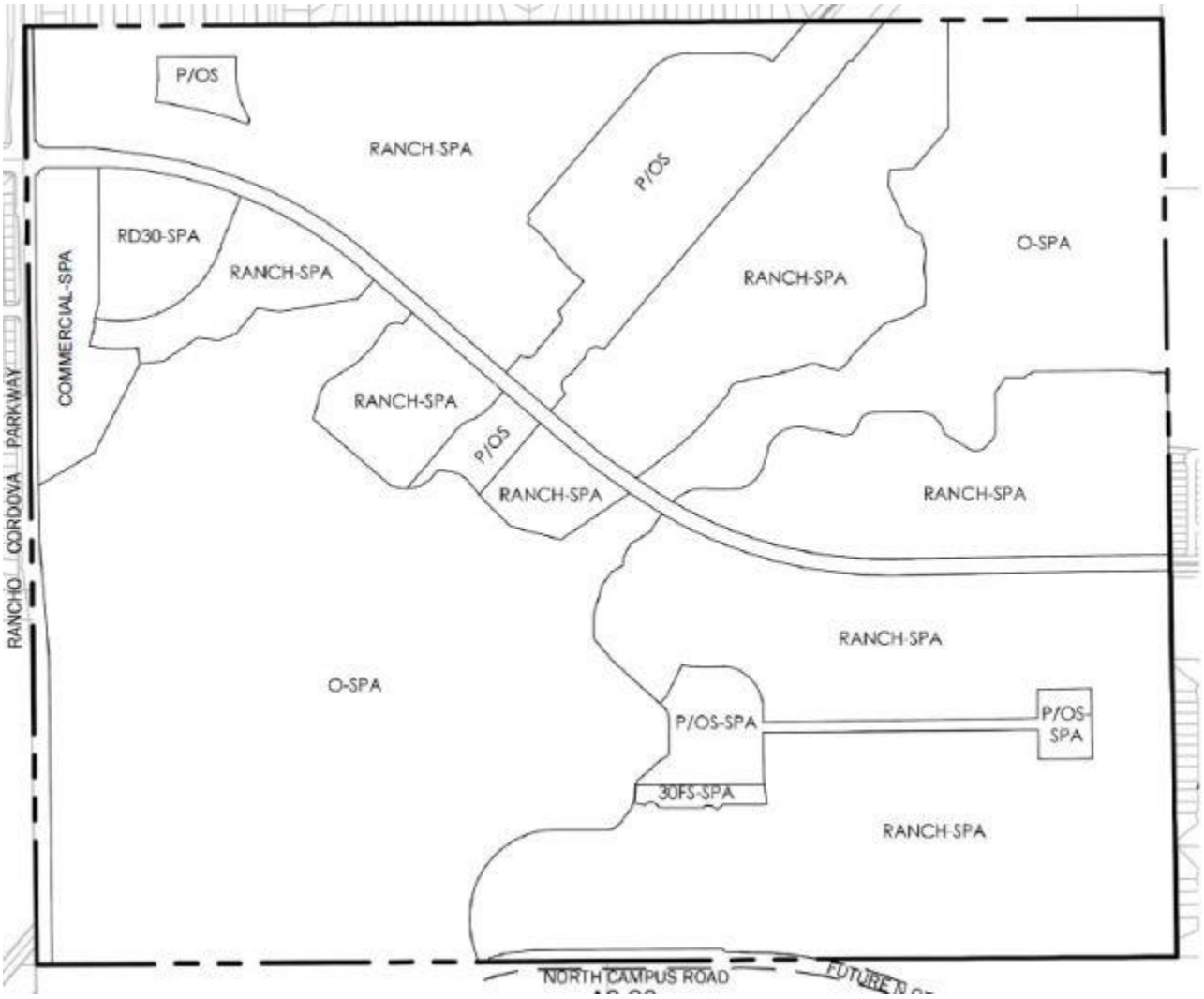
- Providing a mix of residential and nonresidential uses
- Creating neighborhood retail development
- Implementing a compact design to preserve sensitive wetlands

- Providing residential neighborhoods with a variety of densities
- Create an active -adult neighborhood to provide housing choices to an underserved population catering to specific needs and lifestyles.

The Ranch Zoning Land Use Map**, Figure 4: Proposed Zoning Land Use Map**, is proposed with land uses as follows:

- Ranch SPA
- Park/Open Space
- RD30-SPA
- Commercial-SPA

Figure 4: Proposed Zoning Map



Special Planning Area Elements
The Ranch proposed zoned Special Planning Area (SPA) is subject to development according to the SPA handbook text and exhibits as well as subject to provisions as set forth by the Development Agreement. The Ranch SPA handbook provides a set of development standards and guidelines for the project site. As a SPA, the handbook establishes unique and specific standards to create design flexibility in achieving project goals. The standards and permitted uses provided in the SPA handbook are intended to supplement the City of Rancho Cordova Zoning Code. Where the standards are silent or unspecified, the City of Rancho Cordova Zoning Code shall apply.

- Permitted Land Uses: Allowed uses and corresponding permit requirements for all residential zoning districts in the SPA shall be consistent with the City's Zoning Code. Commercial uses are identified in the SPA handbook.
- Development Standards: The Ranch land use plan provides for varied single-family residential opportunities to attract a diverse population. Seven different single-family residential lot sizes are located within the plan area. These standards include High density residential and commercial.
- Architectural Styles: The Ranch allows for a wide variety of architectural styles throughout the residential and non-residential neighborhoods. The handbook includes examples of different architectural styles to demonstrate typical examples of variety of footprints and massing, elevations, and possible design elements. Other architectural styles not mentioned in the SPA handbook are allowed but will be subject to the city's design review approval. As stated in The Ranch SPA handbook, once the design review is approved by City Council, the approvals are vested for 10 years from the date of approval. The City of Rancho Cordova Zoning Ordinance states that the expiration date is 3 years from the date of approval.
- Circulation Design Standards: The SPA circulation system utilizes an efficient system of streets and pathways to serve the plan area. Street sections are provided within the SPA handbook.
- Trail System: The Ranch provides a citywide network with regional connections, allowing convenient and safe access to all pathways. The trail network, located throughout The Ranch plan area is a key defining factor of the community.
- Parks and Open Space: The plan provides a variety of recreation opportunities, including active community park, neighborhood park, passive parks and open space that creates an outdoor environment that will play an integral role in shaping the community.
- Landscape, Signage, and Entry Monumentation: The SPA handbook includes landscape, signage, and entry monumentation guidelines and standards for the community.
- Wetland Nature Preserve: The Ranch includes a 200 plus acre wetland nature preserve which will be protected through a perpetual conservation easement.
- Infrastructure: Sewer and Water will connect to existing infrastructure.
- Drainage: The Ranch SPA includes an unnamed tributary to the lower Morrison Creek South meanders down the middle of the project site, generally from the northeast to the southwest. The project consists of two developmental areas, at the northwest and southwest areas of the project site, with the remaining area left as open space. The

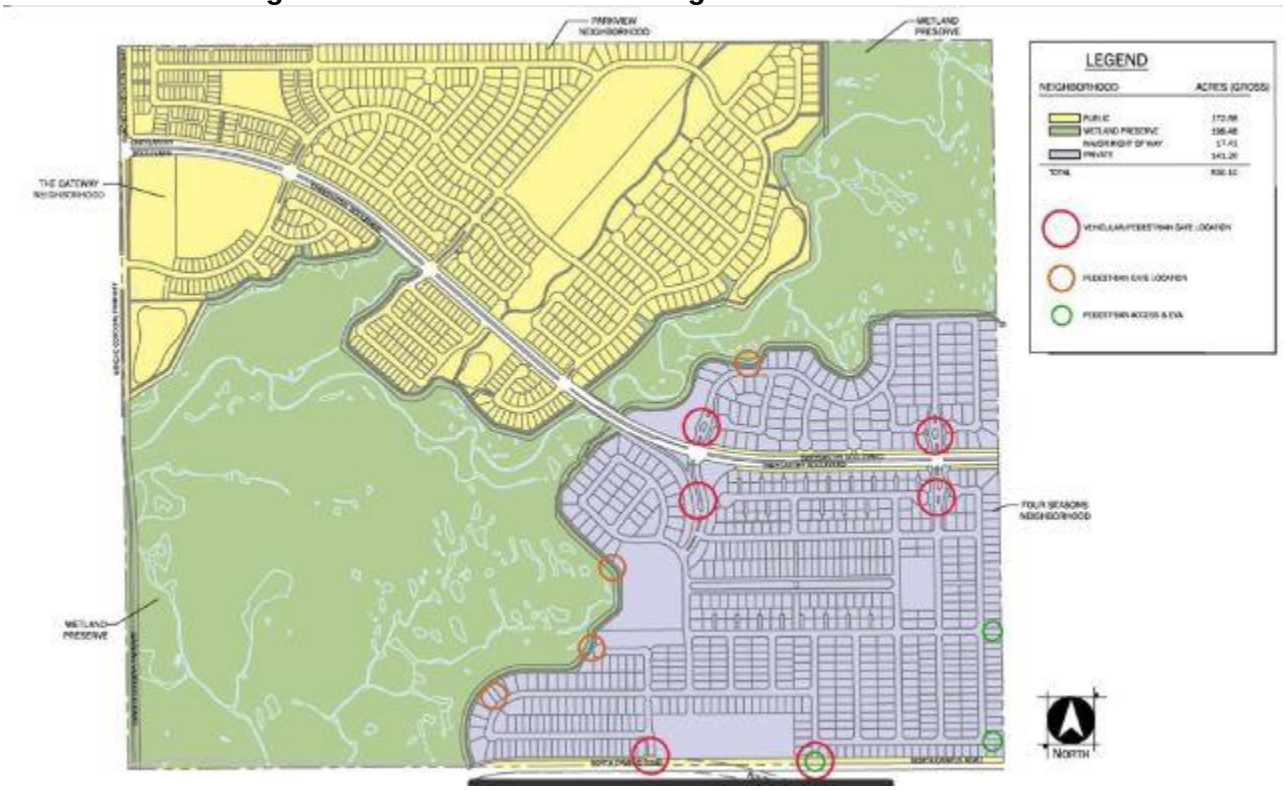
northwest area will drain to the Lower Morrison Creek South and the southeast area will drain to both the Lower Morrison Creek South and Kite Creek. The open spaces will include detention basins that will provide water quality and stormwater management.

- Phase Plan: A phasing plan is included in the SPA handbook to demonstrate logical, timely and appropriate completion of the infrastructure and roadway facilities.

Public and Private Neighborhoods

The Ranch consists of both public, located in the northwest area, and private neighborhoods, located in the southeast area**. Figure 5: Public and Private Neighborhood Locations**. The neighborhoods are separated by the natural preserve which is located in the middle of the project site.

Figure 5: Public and Private Neighborhood Location



Yellow Area is Public Neighborhood
Purple Area is Private Neighborhood
Green Area is Natural Preserve
Red Circles are Vehicular/Pedestrian Gate Locations
Orange Circles are Pedestrian Gate Locations
Green Circles are Pedestrian Access and Emergency Vehicle Access

Public Neighborhood:

<u>The Gateway Neighborhood;</u> A commercial center at the southeast corner of Rancho Cordova

Parkway and Chrysanthy Boulevard. The neighborhood provides local-serving retail opportunities adjacent to higher density residential uses as well as small-lot single family area. The internal street network is well connected, providing on and off street connection to trails along the Wetland Preserve. The neighborhood provides amenities and commercial uses to both the surrounding neighborhoods and community at large.

Parkview Neighborhood; A traditional, single-family neighborhood that also includes alley loaded lots with a large centrally located community park and a smaller neighborhood park located between Rancho Cordova Parkway and the natural preserve and north of Chrysanthy Boulevard. The single family residential includes various lot sizes and configurations. A multi-use trail is provided along the natural preserve which will provide off-street pedestrian and bicycle connections.

Private Neighborhood;

Four Seasons Neighborhood is a gated active-adult neighborhood located east of the wetland preserve. Vehicle traffic will be limited to residents of the gated neighborhood, utility maintenance, and emergency vehicles. The neighborhood contains four single family lot sizes and product types. In addition, high density units (38 unit maximum) are located adjacent to the recreation center, providing rental opportunities within the active-adult community. The Four Seasons Neighborhood amenities include the following:

- A recreation center that includes a clubhouse, pools, gathering areas, gym, and various recreation courts,
- A linear park
- Community rose garden
- All connected through a network of off-street paseos.

A multi-use trail is also provided along the natural preserve for off-street pedestrian and bicycle connection. This trail is accessible to the general public.

CIRCULATION PLAN
The Ranch project will provide the following circulation plan: **Figure 6: Proposed Circulation Plan**

Minor Arterial Streets (4 lane street):

- Construction of Chrysanthy Boulevard. This roadway is the main principal street that serves through traffic in the vicinity of the plan area and consists of 4 lanes, sidewalk, frontage and median landscaping. Chrysanthy Boulevard will ultimately provide an east-west connection between Sunrise Boulevard and Grant Line Road. Chrysanthy Boulevard will also provide access to the project and City's extensive trail network through signalized pedestrian crossings, and an un-interrupted north-south undercrossing.
- Widening of Rancho Cordova Parkway from 2 lanes to a 4-lane roadway including sidewalks, frontage and median landscaping.
- Construction of North Campus Road: The project's obligation will construct the curb, gutter, sidewalk and one travel lane adjacent to the project's southern boundary.

Adjacent developments will construct the remainder of the roadway with future development. This 4-lane roadway will connect Rancho Cordova Parkway to Americanos Boulevard and provide access to the future high school for The Ranch, Suncreek, and Sunridge development areas.

Public residential streets:
Internal residential streets provide connections into and throughout the Ranch Gateway and Parkview Neighborhood.

- Standard residential streets provide primary circulation within a neighborhood.
- Minor residential streets serve as local connector streets within individual neighborhoods

Public alleys:
The Ranch project includes alley loaded residential lots within the Parkway neighborhood that minimizes garages and driveways in front yards of small lot residential units.

Private residential streets:
Private streets and private alleys will provide only the traffic from the residences they serve and will be privately maintained as part of the Home Owners Association (HOA).

Private Entry/Exit gates: There are six vehicle gates within the Four Seasons Neighborhood. Four of the vehicle gates are located off of Chrysanthy Boulevard and two vehicle gates are located along the southern project boundary line.

Vehicle gates: The vehicle gates operation will be open during the day and closed at night to the public.

Pedestrian gates: In the early planning stages for the project, the pedestrian gates located within the age restricted, Four Seasons, area were planned as open to the public. However, the applicant is currently proposing that the pedestrian gates be closed to the public and only open to the Four Seasons residents due to the following reasons:

- The private clubhouse and amenities will only be open to the Four Seasons residents and guest
- In addition, the subdivision to the east, "Grantline 220", a proposed age restricted neighborhood is also proposing pedestrian gates that would be closed to the public. For the same reason, restriction to private amenities. The age restricted subdivisions will be privately maintained by the age restricted management/home owners association.

The trail located adjacent to the age-restricted adult subdivision is open to the public. **Figure 7: Trail and Trail Head Locations**. Therefore, the public would be allowed to travel north and south and east and west adjacent to the age-restricted subdivision as well as students would be allowed to travel to and from school. Since the area to the east is also proposed as an age restricted subdivision, it does not make sense to have the gates open to the public. A condition of approval has been included to the project that if the development to the east does not build

as age restricted, then the pedestrian gates will be open to the public.

Figure 6: Proposed Circulation Plan

TRAILS:

The project will add 2.5 miles of 10-foot wide trails to the City's existing network. The trails will provide local connectivity through amenitized trail heads located at key project destinations, and regional connectivity through connections to existing trails on the north and west side and future trails on the south and east side of the project. **Figure 7: Trail and Trail Head Locations**, illustrates the trail network within the project.

Figure 7: Trail and Trail Head Locations

PARKS AND OPEN SPACE PLAN:
The Ranch Overall Park and Open Space Plan provides a variety of recreation opportunities. The Overall Parks and Open Space System map shows the location of the public, open space, wetland nature preserve and private park and open space (Homeowner Association maintained). **Figure 8: Overall Parks and Open Space System**

Figure 8: Overall Parks and Open Space System

The Ranch SPA handbook includes conceptual park plans that includes the following;

- Community Park Program: A 10.78 acre park that proposes two regulation-sized soccer fields with sports lights, public restrooms, and other facilities such as children's play areas, picnic shelters, and sports courts. Adjacent to the community park is an open space parkway that consists of an existing 275 foot wide power line easement. The proposed plan includes a pedestrian trail providing connection throughout the plan area and to other areas of the Sunrise Douglas Community Plan under the power line easement.
- Neighborhood Park Program: A 2.19 acre park that proposes play structures, sports courts, picnic areas, shade structures, benches, and tables.
- Passive Park: A 1.21 acre passive park that is located adjacent to the wetland nature preserve.
- Program for other Parks: Meandering Class 1 bike and pedestrian trails. Site amenities includes dog stations, trash receptacles, drinking fountains, surface parking for the adjacent community park, and detention basin facilities.

In order to Rezone to the Special Area Planning the following findings shall be made:

Rezone Findings:

A.Finding: The proposed amendment is consistent with the General Plan.
Evidence: The proposed project area with the proposed land use as shown in **Figure 4: Proposed Zoning Map** are consistent with the proposed General Plan Amendment Land Use map as shown in **Figure 3: Proposed General Plan Amendment Land Use Map**. In addition, The Ranch SPA is consistent with several of the General Plan goals as stated in The Ranch Special Planning Area handbook (Attachment 12, The Ranch Special Planning Area) and further defined in the Rezone ordinance.

B. Finding: The proposed amendment would not be detrimental to the public interest, health, safety, convenience, or welfare of the City.
Evidence: The proposed Ranch SPA will not be detrimental to the public interest, health, safety, convenience, or welfare of the City. The Ranch SPA is expected to result in an improved jobs/housing ratio than what currently exists and includes the designation of public uses including parks and other public or quasi-public uses. The Ranch SPA integrates sustainable development practices at each level of community planning and implementation. It includes retail opportunities for the planned community and the surrounding areas of the City as well as a variety of residential densities resulting in a range of housing opportunities for a range of income levels.

C. Finding: The proposed project has been reviewed in compliance with the provisions of CEQA.
Evidence: The Ranch Environmental Impact Report identifies all known and protected resources within the project area. Required protection and mitigation measures have been incorporated into The Ranch SPA and the Mitigation Monitoring Report Plan. The Ranch project is consistent with CEQA and the General Pan Natural Resources Element Goals NR-2, and NR-3 regarding protection and preservation of wildlife, plant habitats, wetlands and creek corridors.

D. Finding: If a map amendment, the site is physically suitable (including absence of physical constraints, access, compatibility with adjoining land uses and provisions of utilities) for the requested zoning code.
Evidence: The project site is physically suitable for the proposed density of development. The proposed plan is consistent with the General Plan conceptual plan “Suncreek Preserve Planning Area” as the land uses designations show in the **Figure 3: Proposed General Plan Land Use Map**. Natural Resource areas have been avoided to the extent possible. The proposed circulation plan enhances and expands roadway systems in the area with connections to existing roads. The project land use uses are consistent with the surrounding areas that includes residential and natural resources designations. The project infrastructure that includes utilities will connect into existing infrastructure.

E. Finding: If a text amendment, the amendment is internally consistent with the other applicable provisions in the zoning code.
Evidence: The project includes a proposed zoned Special Planning Area (SPA) that is subject to development according to the SPA handbook text and exhibits as well as subject to provisions as set forth by the Development Agreement. The Ranch SPA handbook provides a set of development standards and guidelines for the project site. As a SPA, the handbook establishes unique and specific standards to create design flexibility in achieving project goals. The standards and permitted uses provided in the SPA handbook are intended to supplement the City of Rancho Cordova Zoning Code. Where the standards are silent or unspecified, the

City of Rancho Cordova Zoning Code shall apply.

Special Planning Area Findings:
A. Finding: The proposed special planning area is consistent with the goals, policies, and objectives of the General Plan.
Evidence: The Ranch SPA is consistent with several of the General Plan goals as stated in The Ranch Special Planning Area handbook (Attachment 12: Exhibit A The Ranch Special Planning Area).

B. Finding: The proposed special planning area meets the requirements set forth in Zoning Ordinance chapter 23.149.
Evidence: The proposed Ranch SPA includes the SPA handbook text and exhibits. The Ranch SPA handbook provides a set of development standards and guidelines for the project site. As a SPA, the handbook establishes unique and specific standards to create design flexibility in achieving project goals. The standards and permitted uses provided in the SPA handbook are intended to supplement the City of Rancho Cordova Zoning Code. Where the standards are silent or unspecified, the City of Rancho Cordova Zoning Code shall apply. The SPA handbook includes all the requirements as stated in the Zoning Ordinance chapter 23.149.120 General provisions.

C. Finding: The special planning area is needed because the project is not possible under the existing requirements.
Evidence: The site is currently zoned as Agricultural 80 which would result in very low-density residential use and agricultural uses. Therefore, higher residential uses and commercial uses would be unable to be developed on the project site. In addition, the General Plan concept plan shows higher residential densities and commercial that is consistent with the proposed SPA.

DEVELOPMENT AGREEMENT
The Special Planning Area plan is the planning blueprint for the development. Under California law, development agreements grant ("vest") developers the right to proceed with development of a project in compliance with the local laws, terms, standards and requirements that are in effect at the time the City enters into the development agreement, subject to the limitations in the development agreement. Provided below is a summary of some of the more critical sections associated with the development of The Ranch Special Planning Area. (Attachment 14 Development Agreement and Appendices)

Section 4.2 – Term: In recognition of the size of the The Ranch Special Planning Area (TRSPA) Project, and the complexity and importance of infrastructure supported by this development, the term of this Development Agreement is 20 years.

Section 5.10 – CC&R Enforcement and Property Maintenance Code: In response to comments from the City Council regarding its desire to ensure the on-going vitality of all future residential neighborhoods, the Landowner has agreed to establish, with input from the City, and record covenants, conditions and restrictions (CC&Rs) against the individual parcels that will protect, preserve, and maintain the appearance, condition, and function and operation of the development in a similar manner to the City's Property Maintenance Code.

Section 6.1 – 6.3 – Park Development and Community Places Fee. These sections establish the dedication requirements of park land to Cordova Recreation and Park District (CRPD) and to the City to satisfy the Quimby Act requirements and open space requirements to the City and to establish the amounts of the Fees for the Market Rate and Age-Restricted portions of the

project. It also establishes the amount of the Community Renovation Fee, previously referred to as the Park Renovation Fee in previous development agreements.

Section 7 - Infrastructure and Maintenance Finance. These sections identify and require the Landowner to form, annex into, and/or implement various funding mechanisms to maintain existing and new public improvements associated with or needed to serve the Project.

Section 7.2.8 – Homeowners Association: Landowner has agreed to form a Homeowners Association in the Age-Restricted Community portion of the Project to maintain certain infrastructure components including residential streets, street lights, sidewalks, drainage facilities, private parks, frontage landscaping at the entrances, entrance gates, clubhouse recreation facility, and common areas Landowner has also agreed to form a separate HOA in the Market Rate portion of the project for the exclusive purpose of enforcing the CC&Rs that are recorded against the properties.

Section 8 – Affordable Housing Plan: This Section requires the Landowners to comply with the terms and conditions of the Affordable Housing Plan Agreement, which outlines the methodology for providing affordable rental and for-sale housing within the TRSPA. The Affordable Housing Plan Agreement is included as a separate exhibit (see Exhibit A to Attachment 15- the Resolution approving the Affordable Housing Plan). A more in-depth discussion of the methodology for providing affordable housing in the TRSPA is provided under the next discussion item below.

Section 10 – Participation in the SSHCP: The City has adopted the South Sacramento Habitat Conservation Plan (SSHCP) to mitigate such impacts for public improvement projects and private development within the City. Developer shall pay City a per-acre mitigation fee and prior to issuance of the SSHCP Permit, Developer shall obtain and have all necessary permits (federal, state, regional, and/or local) to ensure compliance with the adopted SSHCP.

Consistent with state law, the City of Rancho Cordova has adopted certain requirements that must be satisfied in order for the City Council to approve a development agreement. The requirements from Section 23.158.060 of the Municipal Code establishes the required findings. City staff believes that each requirement is satisfied and are listed below:

1.*The development agreement is consistent with the General Plan objectives, policies, land uses, and implementation programs and any other applicable Specific Plans.*

Evidence: The Development Agreement is consistent with the objectives, policies, general land uses and programs specified and contained in the City's General Plan, and in the proposed TRSPA in that (a) the land use designation for The Ranch site allows for residential, commercial, parks/open space, and natural resources, (b) the project is consistent with the fiscal policies of the General Plan and the proposed TRSPA with respect to provision of infrastructure and public services, and (c) the Development Agreement includes provisions relating to financing, construction and maintenance of public facilities, park development fees and similar provisions set forth in The Ranch Special Planning Area.

2.*The development agreement is in conformance with the public convenience and general welfare of persons residing in the immediate area and will not be detrimental or injurious to property or persons in the general neighborhood or to the general welfare of the residents of the city as a whole.*

Evidence: The Development Agreement is in conformity with public convenience and general welfare of people residing in the immediate area and won't be detrimental or injurious to the property or people in the area or the city as a whole in that the proposed Ranch Project will implement land use guidelines set forth in the proposed TRSPA and the proposed General Plan amendment, which have planned for residential uses, commercial, parks/open space, and natural resources at this location.

3.*The development agreement will promote the orderly development of property or the preservation of property values.;*

Evidence: As described above, the development agreement and the project it allows for, are consistent with the proposed General Plan Amendment and Special Planning Area for this site and therefore the development agreement promotes the orderly development of property as well as the preservation of property values, as area properties and their values would be, in part, based on this exact use occurring on this site in the future.

4.*The development agreement does not pertain to any property in the protected 200-year floodplain, unless the development agreement contains conditions that will provide an urban level of protection to the property consistent with California Government Code Section 65865.5.*

Evidence: The Development Agreement does not pertain to any property in the protected 200-year floodplain.

AFFORDABLE HOUSING PLAN

As required by the City's General Plan Housing Element, the Landowner is required to prepare an Affordable Housing Plan for The Ranch Special Planning Area in conjunction with the earliest stage of project entitlement. This Affordable Housing Plan (AHP) must be consistent with the City's adopted Housing Element and address the following major components:

Satisfaction of the City's share of Regional Housing Need Allocation (RHNA) requirements – RHNA requirements- address the availability of sufficient land to accommodate a range of housing types and all income levels within the community. The Ranch Special Planning Area provides 7.14 acres of High Density Residential (HDR) zoned acreage identified for low and very-low income levels (consistent with the General Plan's requirement for five percent of residential acres in new development projects to be designated as HDR and the RHNA income level designation in the City's Housing Element). The Ranch Special Planning Area establishes a minimum density of 27 dwellings per acre for HDR lands meeting the AHP requirement of HDR land to have a density that meets RHNA expectations as established by the State of California Department of Housing and Community Development. The 7.14 acres of HDR zoned land is subject to "no net loss," meaning these lands either must be developed at the income level and in the quantity identified by the City's Housing Element or the City must identify alternative sites within the City where that number of income level housing units will be accommodated.

Development of a strategy that will result in actual affordable housing production – The strategy for providing affordable housing production within The Ranch Special Planning Area is aimed at creating affordable rental housing integrated throughout the City's newly developing areas. The proposed AHP is provided in Attachment 14 Development Agreement and Exhibits, and includes the following key components:

- The Landowner has identified 7.14 acres of high-density land that will be dedicated to the City for the development of affordable rental housing. The value of the dedicated land will be credited against the affordable housing in-lieu fee below. This site is depicted in the AHP (Attachment 15)
- Establishment of an affordable housing in-lieu fee of $4,800 per market rate unit or $3,808 per active adult unit, adjusted annually for inflation, to be collected on every respective unit within the plan. Once collected, these funds will be used to develop affordable housing within the City of Rancho Cordova.

In addition to the above provisions of the AHP for The Ranch Special Planning Area, all future non-residential development projects within the Plan Area will also be required to pay the Housing Trust Development Impact Fee set forth in Rancho Cordova Municipal Code Chapter 16.89. This citywide fee is collected on all commercial, office and industrial development projects in recognition of the direct correlation between these types of land uses generating the need for affordable housing opportunities for employees of those businesses.

TENTATIVE SUBDIVISION MAPS:

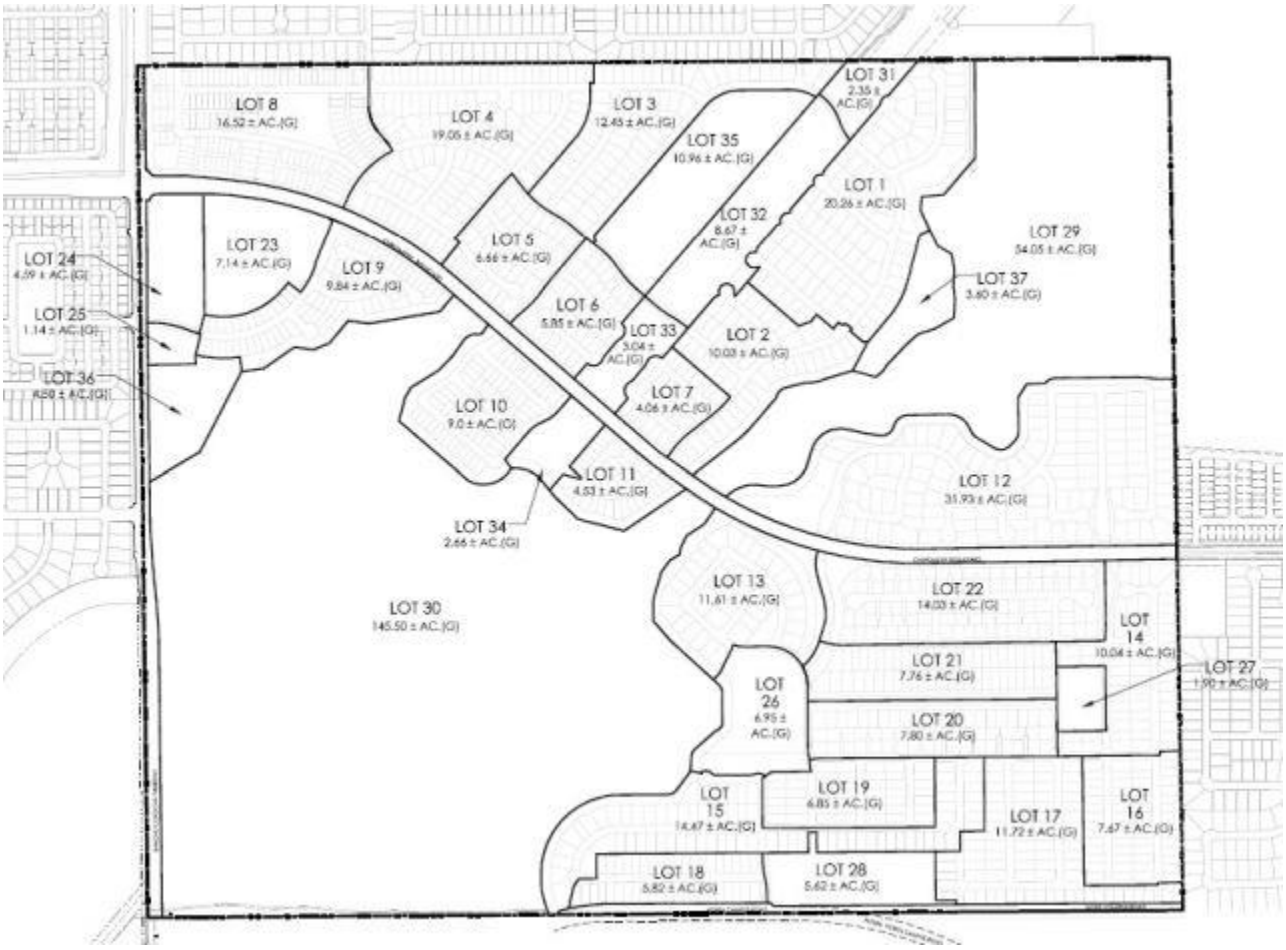
Large Lot
A key component of the development of the Special Planning Area is the proposed Large Lot Tentative Subdivision Map ("Map"). As shown in **Figure 9: Proposed Large Lot Map**, the proposed Map will subdivide the entire 530 acres of The Ranch into a total of 37 large lots. The purpose for the Map is to create the boundaries for the multiple land uses and zoning districts as well as the major roadways within The Ranch Special Planning Area. The Map also represents the basic foundation for the future build-out of the Plan Area as all subsequent project phasing plans, infrastructure plans, and small lot tentative subdivision maps are based on the design of the proposed Map.

Typical of all proposed subdivisions, approval of the proposed Map requires the incorporation of conditions of approval that address important details associated with the development of the Plan Area including:

- Land dedications
- Public utility easements
- Infrastructure improvements/dedications
- Public right-of-way improvements
- Rancho Cordova Parkway improvements
- Funding mechanisms
- Establishment of various maintenance districts
- Landscaping requirements

The small lot subdivision maps will be necessary to further subdivide the large lots that are being created with the Large Lot Map. **Figure 9: Proposed Large Lot Tentative Subdivision Map:**

Figure 9: Proposed Large Lot Tentative Subdivision Map



Small Lot
The Ranch small lot tentative subdivision map includes the following;
Title

- 732 Single family lots
- 705 Active single family lots
- 7.5 acres lot High Density Residential
- 1.26 acres lot of active Adult High Density Residential
- 5.73 acres of Commercial
- 14.36 acres of Public Parks
- 8.99 acres of Private Parks
- 199.48 acres of Natural Resources
- 5.62 acres of Water detention
- 14.06 acres of Public Open Space

The small lot also includes lots that are created as public and private right of ways and landscape lots. **Figure 10: Proposed Small Lot Tentative Subdivision Map**

Figure 10: Proposed Small Lot Tentative Parcel Map

The proposed small lot map includes planned development as follows:

- Protection of the 200 plus acre wetland preserve which will be protected through a perpetual conservation easement.
- The site also includes an existing 275-foot wide utility easement that does not allow structures within the easement. Therefore, the development is planned around this existing easement.
- The commercial area is located adjacent to the two arterial streets (Chrysanthy Boulevard and Rancho Cordova Parkway) allowing for greater visibility and will also serve a larger population.
- The high density residential is located adjacent to the commercial area which provides walkable retail services.
- Parks/open space are evenly distributed throughout the plan.
- Continuous off-street trails are planned to connect residential areas to the commercial,

parks/open space and future school sites.

- The design of the community allows for a range of densities including low, medium, and high density residential and a variety of housing types, and affordable housing.

Infrastructure

Water

The Ranch Special Planning Area is within the service area Zone 40 of the Sacramento County Water Agency (SCWA). SCWA has an adequate source of water to meet the needs of The Ranch SPA. A water distribution system will be constructed in phases, providing water to each of the proposed land uses in the quantity and pressure necessary for the intended development. Water demands were projected for The Ranch SPA based on land uses identified and the standard methodology implemented by SCWA.

Sewer

The Ranch SPA is located within Area 2 of the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD). SASD included The Ranch SPA in the buildout expansion facilities. Design and construction of phased sewer infrastructure into and through the plan area will be done with the approval and to the satisfaction of the City of Rancho Cordova and SASD staff.

Drainage

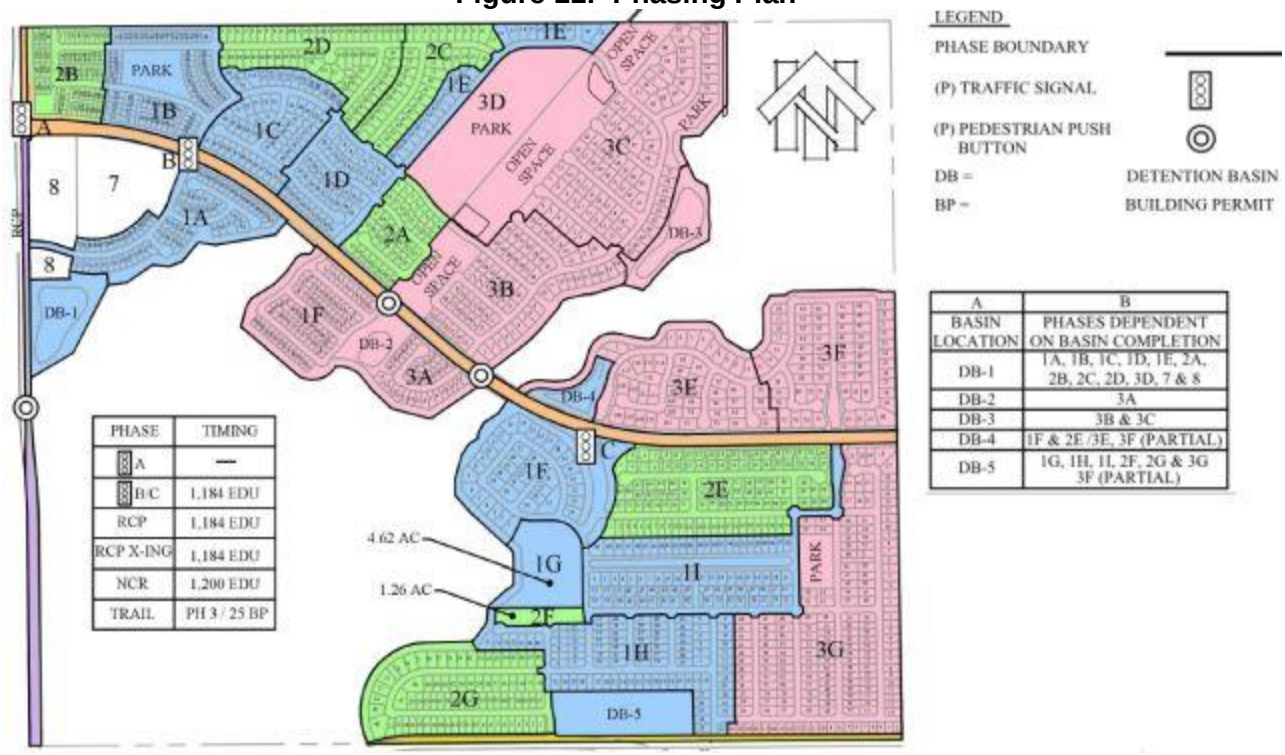
The Ranch project consists of two development areas; the northwest and southeast quadrants, with the remaining area left as open space. The northwest quadrant will drain to the Lower Morrison Creek South, and southwest quadrant will drain to both the Lower Morrison Creek South and Kite Creek.

The open spaces will include detention basins that will provide water quality and stormwater management. The management includes capture and treatment of irrigation flows, hydromodification of storm runoff, and attenuation of very large storms so that post-project flow rates are equal to or less than existing conditions. There will be three basins to manage runoff from the northwest quadrant development and two basins to manage the southeast quadrant stormwater runoff.

PHASING PLAN

A phasing plan has been prepared and is included within The Ranch Special Planning Area handbook. The phasing plan shows the logical, timely and appropriate completion of the infrastructure and roadway facilities, required to serve the phased build-out of the Plan Area.
Figure 11: Phasing Plan.

Figure 11: Phasing Plan



PHASE	TIMING
A	—
B/C	1,184 EDU
RCP	1,184 EDU
RCP X-ING	1,184 EDU
NCR	1,200 EDU
TRAIL	PH 3 / 25 BP

A BASIN LOCATION	B PHASES DEPENDENT ON BASIN COMPLETION
DB-1	1A, 1B, 1C, 1D, 1E, 2A, 2B, 2C, 2D, 3D, 7 & 8
DB-2	3A
DB-3	3B & 3C
DB-4	1F & 2E /3E, 3F (PARTIAL)
DB-5	1G, 1H, 1I, 2F, 2G & 3G 3F (PARTIAL)

The Tentative Subdivision Map Review as conditioned, adheres to Section 66474 of the California Subdivision Map Act requires a City to the deny approval of a tentative map, if any of the findings are found to be true. In the case of the proposed map, none of the required findings were found to be true. The following evidence supports the map request:

1.Finding: That the proposed map is not consistent with applicable general and specific plans as specified in Section 65451.
Evidence: The proposed project is consistent with the proposed General Plan Amendment for The Ranch Special Planning Area (TRSPA) land use designation. All lots are consistent with the proposed TRSPA development standards. The proposed project is consistent with the proposed General Plan Amendment for The Ranch Special Planning Area (TRSPA) land use designation. All lots are consistent with the proposed TRSPA development standards. The Tentative Maps will subdivide the 530 acre Ranch area into 37 large lots and creates boundaries for the multiple land uses, zoning districts, and major roadways within the project. The small lot map will further divide the lots as shown in Attachment 9 Exhibit C. All such identified uses within the Tentative Map are consistent with the allowed land uses set forth in the General Plan and Special Planning Area land use, which call for the project area to include a mix of residential, commercial, parks and open space, and natural resources uses. There are currently no buildings on site and all lots are consistent with the development standards of the General Plan and Special Planning Area for this parcel.

2.Finding: That the design or improvement of the proposed subdivision is not consistent with applicable general and specific plans.
Evidence: The proposed Tentative Subdivision Map is consistent with the proposed General Plan Amendment designation of Low, Medium, High Density Residential, Commercial, Parks/Open Space, and Natural Resources and the proposed TRSPA handbook densities and zoning districts as follows;

- The proposed subdivision map is consistent with the proposed TRSPA Land Use Plan.
- The overall proposed subdivision densities (Low, Medium, and High) are consistent with proposed General Plan Amendment designations
- The proposed subdivision lots are consistent with the proposed Special Planning Area development standards.

3.Finding: That the site is not physically suitable for the type of development.
Evidence: The site is physically suitable to subdivide. The existing parcel will be split into 1,437 single-family lots, 2 commercial lots, 1 public multi-family lot, 1 private multi-family lot, 3 public parks, 3 private parks, 11 protected area (natural resources) lots that include drainage basin and landscape, several private landscape lots and private drives. There are no buildings currently onsite.

4.Finding: That the site is not physically suitable for the proposed density of development.
Evidence: The site is physically suitable for the proposed density of development. The proposed TRSPA includes low (2.1-6.0 dwelling units per acre (du/ac), medium (6.1-18.0 du/ac), and High (27.0-50.0 du/ac) densities. The proposed subdivision map is consistent with the proposed General Plan designations. Improvements are provided as shown on the Tentative Subdivision Map (Exhibit 2A), and subject to the attached Conditions of Approval (Exhibit 2B).

5.Finding: That the design of the subdivision or the proposed improvements are likely to cause substantial environmental damage or substantially and avoidably injure fish or wildlife or their habitat.
Evidence: An Environmental Impact Report was prepared for The Ranch project DD9725 where the construction of single-family lots, multi-family lots, commercial, parks/open space, and the protection of natural resources were addressed in accordance with the requirements of the California Environmental Quality Act (CEQA). The Draft EIR contains a description of the Project, description of the environmental setting, identification of project impacts, and mitigation measures for impacts found to be significant, as well as an analysis of project alternatives, identification of significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. The Draft EIR identifies issues determined to have no impact or a less-than-significant impact and provides analysis of potentially significant and significant impacts. The proposed project is consistent with the project analyzed in the Environmental Impact Report.

6.Finding: That the design of the subdivision or the type of improvements is not likely to cause serious public health problems.
Evidence: The proposed subdivision includes a 200 plus acre natural preserve and an existing 275-foot wide utility easement. Proposed development has been planned outside of the protected natural preserve and the existing easement. The proposed Tentative Subdivision Map includes necessary improvements to serve the project. The proposed improvements are consistent with the proposed TRSPA. No public health problems will result from approval of the tentative subdivision map.

7.Finding: That the design of the subdivision or the type of improvements will conflict with easements, acquired by the public at large, for access through or use of property within the proposed subdivision. In this connection, the legislative body may approve a map if it finds that alternate easements, for access or for use, will be provided, and that these will be substantially equivalent to ones previously acquired by the public.
Evidence: The proposed improvements on the tentative subdivision map and included within

the project are consistent with the proposed TRSPA and City of Rancho Cordova Ordinances and Standards and do not conflict with public easements and related necessary access through the project. The streets proposed include public and private streets.

ENVIRONMENTAL IMPACT REPORT

The City of Rancho Cordova circulated an Initial Study and Notice of Preparation (NOP) of an EIR for the Project on July 6, 2018 to trustee agencies, the State Clearinghouse (SCH # 2018072011), and the public. A scoping meeting was held on July 26, 2018 in the City of Rancho Cordova. Those present at the scoping meeting included representatives from the following: the City of Rancho Cordova, De Novo Planning Group, and the Project applicant team. The NOP and comments received during the NOP comment period are presented in Appendix A of the Draft EIR.

The City of Rancho Cordova published a public Notice of Availability (NOA) for the Draft EIR on August 16, 2019, inviting comment from the general public, agencies, organizations, and other interested parties. The NOA was filed with the State Clearinghouse and the County Clerk and was published in a local newspaper pursuant to the public noticing requirements of CEQA. Comments received in response to the NOP were considered in preparing the analysis in the Draft EIR. The Draft EIR was available for public review and comment from August 16, 2019 through September 30, 2019.

The Draft EIR contains a description of the Project, description of the environmental setting, identification of project impacts, and mitigation measures for impacts found to be significant, as well as an analysis of project alternatives, identification of significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. The Draft EIR identifies issues determined to have no impact or a less-than-significant impact and provides analysis of potentially significant and significant impacts. The Draft EIR identified the following impacts that were determined to be significant and unavoidable:
Title

- Impact 3.1-1: Project implementation would result in substantial adverse effects on scenic vistas and resources or substantial degradation of visual character;
- Impact 3.13-1: Under Existing (2017) Plus Project conditions, the Project may conflict with an applicable program, plan, ordinance or policy addressing the circulation system – Roadway Segments and Intersections; and
- Impact 3.13-2: Under Cumulative (2040) Plus Project conditions, the Project may conflict with an applicable program, plan, ordinance or policy addressing the circulation system – Roadway Segments and Intersections
- Impact 3.13-2: Under Cumulative (2040) Plus Project conditions, the Project may conflict with an applicable program, plan, ordinance or policy addressing the circulation system – Roadway Segments and Intersections.

The City received 10 comment letters regarding the Draft EIR from public agencies and organizations during the public comment period. In accordance with CEQA Guidelines Section 15088, a Final EIR was prepared that responded to the written comments received on the Draft EIR as well as edits to the Draft EIR based on comments and changes to the project that were made after circulation of the Draft EIR. No new significant impacts were identified in the Final

EIR. The Final EIR document and the Draft EIR, as amended by the Final EIR, constitute the Final EIR. Attachment 4 Draft EIR and Appendices and Final EIR and Appendices.

Habitat Conservation Plan.
The City has adopted the South Sacramento Habitat Conservation Plan (SSHCP) in order to mitigate impacts on protected natural resources through a coordinated regional approach, which provides a variety of biological and economic benefits. The project is within the boundaries of the SSHCP and the Developer has applied for a Habitat Conservation Plan (HCP) permit with the City. The Developer will pay the City a per-acre fee for impacts on protected natural resources, based upon the methodology established by the SSHCP. Prior to issuance of the SSHCP permit by the City, the Developer will obtain and have all necessary permits (federal, state, regional and/or local) to ensure compliance with the adopted SSHCP.

FISCAL IMPACT AND FUNDING SOURCE

Fiscal Impact Analysis: Approval of The Ranch project would allow the construction of 1,690 residential units, 5.73 acres of commercial, and 14.36 acres of public parks and 8.99 acres of private parks and reservation of open space within the City of Rancho Cordova. This will benefit the City and the community by providing direct contributions to fund needed public infrastructure for this project and the broader community.

All privately owned development will generate property taxes to support City services. Additionally, the non-residential uses within The Ranch will contribute revenue to the City in the form of sales tax and the employment generating uses will provide various secondary benefits to the local economy. While the project will generate additional demands for municipal services, the project will be subject to existing and new funding mechanisms to pay fair share costs for ongoing operations, maintenance, and services that will offset City costs.

Based upon analysis completed within the project review, approval of The Ranch will likely have a net benefit to the City of Rancho Cordova.

ATTACHMENT(S)

1. Attachment 1 - Resolution CEQA
2. Attachment 2 - Exhibit A to the Resolution CEQA Findings The Ranch
3. Attachment 3 - Exhibit B to the Resolution MMRP
4. Attachment 4 - Draft EIR w. Appendices
5. Attachment 5 - The Ranch Final EIR
6. Attachment 6 – Resolution General Plan and Maps
7. Attachment 7 - Exhibit A to the Resolution General Plan Land Use Map
8. Attachment 8 - Exhibit B to the Resolution LLTSM-The Ranch
9. Attachment 9 - Exhibit C to the Resolution TSM-The Ranch
10. Attachment 10 - Exhibit D to the Resolution COA The Ranch
11. Attachment 11 - Ordinance Rezone Ranch SPA
12. Attachment 12 - Exhibit A to the Ordinance Ranch SPA Handbook FINAL
13. Attachment 13 - DA Ordinance Ranch
14. Attachment 14 - Exhibit A to the Ordinance DA and Exhibits
15. Attachment 15 - The Ranch AHP Resolution
16. Attachment 16 - 500' Radius Map & Mailing Labels

CITY OF RANCHO CORDOVA

RESOLUTION NO. XX-2020

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF RANCHO CORDOVA, STATE OF CALIFORNIA, CERTIFYING AN ENVIRONMENTAL IMPACT REPORT AND ADOPTING ENVIRONMENTAL FINDINGS, A STATEMENT OF OVERRIDING CONSIDERATION AND A MITIGATION MONITORING AND REPORTING PROGRAM UNDER CEQA FOR THE RANCH SPECIAL PLANNING AREA PROJECT APPROVALS DD9725

WHEREAS, The Ranch Special Planning Area Project ("Project" or "Special Planning Area") is a plan for a mixed-use development with a combination of retail supporting services, recreational uses, and a broad range of residential uses and associated infrastructure and roads on an approximately 530 acre site in the City of Rancho Cordova ("City"). The Project includes approximately 1,690 residential units at various densities on approximately 253 acres; approximately 5.73 acres of commercial use; approximately 72 acres of parks/open space and greens; stormwater detention basins, landscape lots and major and minor roads with landscaping; and approximately 200 acres of wetland natural resources and buffers; and major and minor roads with landscaping; and

WHEREAS, the environmental review of The Ranch Special Planning Area Project commenced with the release of the Notice of Preparation on July 6, 2018 to public agencies and interested parties for consultation on the scope of the EIR; and

WHEREAS, The Draft EIR was circulated for a 45 day public review period between August 16, 2019 and September 30, 2019; and

WHEREAS, public and agency comments were received and staff has prepared written responses to all public comments received during the public comment periods in a Final EIR/EIS. The Final EIR/EIS also contains clarifications and minor corrections to information presented in the Draft EIR. Staff's good-faith, reasoned preliminary analysis concluded that no new information was received that would require recirculation of the Draft EIR under CEQA Guidelines section 15088.5. The Draft EIR is incorporated into the Final EIR; and

WHEREAS, on January 6, 2020, the City Council held a public hearing on the Final EIR and Project approvals; and

WHEREAS, the Final EIR identified several potentially significant impacts that will be reduced to a less than significant level with specified mitigation measures. Approval of the Project will therefore require adoption of mitigation findings and a Mitigation Monitoring and Reporting Program; and

WHEREAS, the Final EIR identified significant and unavoidable environmental impacts of the Project, and approval of the Project will therefore require the adoption of Findings and a Statement of Overriding Considerations; and

WHEREAS, the Final EIR, and the City Council January 6, 2020 staff report, regarding the Draft EIR and Final EIR, including the analysis of the public comments, reflect the City's independent judgment and analysis; and

WHEREAS, the location and custodian of the Draft EIR and Final EIR and other documents that constitute the record of proceedings for the Project is the City of Rancho Cordova Planning Department, 2729 Prospect Park Drive, Rancho Cordova, CA 95670. The Draft EIR and Final EIR and documents relating to the Project are available for review in the City Planning Department and on the City's website.

NOW, THEREFORE, BE IT HEREBY RESOLVED THE CITY COUNCIL OF THE CITY OF RANCHO CORDOVA , does hereby resolve as follows:

1. The foregoing recitals are true and correct and made a part of this resolution.

2. The City Council has reviewed and considered the Draft EIR and Final EIR (collectively, "Final EIR") (Attachment 4 of the Project), as well as the public comments and staff's analysis of the comments.

3. Based on its review of the foregoing documents, the City Council makes and adopts the following findings relating to the CEQA review for the Project prior to approving the Project:

A.The Final EIR has been completed in compliance with CEQA and the CEQA Guidelines.

B.The City Council has independently reviewed and considered the information contained in Final EIR, prior to making its decision on the proposed Project.

C.The Final EIR reflects the City Council's independent judgment and analysis on the potential environmental impacts of the proposed Project. The Final EIR provides information to the decision makers and the public on the environmental consequences of the proposed Project.
D.The Final EIR adequately describes the proposed Project, its significant environmental impacts, mitigation measures, and a reasonable range of alternatives to the proposed Project.

4. The City Council hereby adopts all findings required under CEQA regarding environmental impacts of the Project, mitigation measures and alternatives, adopts a Statement of Overriding Considerations, and adopts a Mitigation Monitoring and Reporting Program (Exhibit B) set forth in the CEQA Findings of Fact and Statement of Overriding Considerations attached hereto as (Exhibit A); and incorporated herein by reference, all in compliance with the requirements of CEQA.

Effective Date. This Resolution shall become effective immediately upon its passage and adoption.

PASSED AND ADOPTED by the City Council of the City of Rancho Cordova on the 6th day of January, 2020 by following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

ATTEST:

_____
David M. Sander, Mayor

_____
Stacy Leitner, CMC
City Clerk

FINDINGS OF FACT AND STATEMENT OF OVERRIDING CONSIDERATIONS

FOR

THE RANCH PROJECT

REQUIRED UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT
(Public Resources Code, Section 21000 et seq)

I. INTRODUCTION

The California Environmental Quality Act (CEQA) requires the City of Rancho Cordova (City), as the CEQA lead agency to: 1) make written findings when it approves a project for which an environmental impact report (EIR) was certified, and 2) identify overriding considerations for significant and unavoidable impacts identified in the EIR.

These findings explain how the City, as the lead agency, approached the significant and potentially significant impacts identified in the EIR prepared for The Ranch Project (Project). The statement of overriding considerations identifies economic, social, technological, and other benefits of the Project that override any significant environmental impacts that would result from the Project.

As required under CEQA, the Final EIR describes the Project, adverse environmental impacts of the Project, and mitigation measures and alternatives that would substantially reduce or avoid those impacts. The information and conclusions contained in the EIR reflect the City's independent judgment regarding the potential adverse environmental impacts of the Project.

The Final EIR (which includes the Draft EIR, comments on the Draft EIR, responses to comments on the Draft EIR, and revisions to the Draft EIR) for the Project, examined several alternatives to the Project that were not chosen as part of the approved Project (No Project Alternative, Reduced Project Alternative #1, and Reduced Project Alternative #2). References to the Draft EIR in this document refer to the Draft EIR, as modified by the Final EIR.

The Findings of Fact and Statement of Overriding Considerations set forth below ("Findings") are presented for adoption by the City Council (Council) as the City's findings under CEQA (Public Resources Code, §21000 et seq.) and the CEQA Guidelines (California Code of Regulations, Title 14, § 15000 et seq.) relating to the Project. The Findings provide the written analysis and conclusions regarding the Project's environmental impacts, mitigation measures, alternatives to the Project, and the overriding considerations, which in this Council's view, justify approval of the Project, despite its environmental effects.

II. GENERAL FINDINGS AND OVERVIEW

Procedural Background

The City of Rancho Cordova circulated an Initial Study and Notice of Preparation (NOP) of an EIR for the Project on July 6, 2018 to trustee agencies, the State Clearinghouse (SCH # 2018072011), and the public. A scoping meeting was held on July 26, 2018 in the City of Rancho Cordova. No public or agency comments were received at the scoping meeting. The NOP and comments received during the NOP comment period are presented in Appendix A of the Draft EIR.

The City of Rancho Cordova published a public Notice of Availability (NOA) for the Draft EIR on August 16, 2019 inviting comment from the general public, agencies, organizations, and other interested parties. The NOA was filed with the State Clearinghouse (SCH # 2018072011) and the County Clerk, and was published in a local newspaper pursuant to the public noticing requirements of CEQA. The Draft EIR was available for public review and comment from August 16, 2019 through September 30, 2019.

The Draft EIR contains a description of the Project, description of the environmental setting, identification of project impacts, and mitigation measures for impacts found to be significant, as well as an analysis of project alternatives, identification of significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. The Draft EIR identifies issues determined to have no impact or a less-than-significant impact, and provides detailed analysis of potentially significant and significant impacts. Comments received in response to the NOP were considered in preparing the analysis in the Draft EIR.

The City received 10 comment letters regarding the Draft EIR from public agencies and organizations during the public comment period. In accordance with CEQA Guidelines Section 15088, a Final EIR was prepared that responded to the written comments received, as required by CEQA. The Final EIR document and the Draft EIR, as amended by the Final EIR, constitute the Final EIR.

Project Revisions

The tentative subdivision map for The Ranch Project was modified after the Draft EIR was released to the public. In coordination with staff from the City, the Project applicant team made refinements and minor revisions to the tentative subdivision map, Special Planning Area (SPA) Handbook, and technical materials.

As discussed in the Final EIR, under the revised tentative subdivision map, development was reduced from 1,725 residential units to approximately 1,690 residential units, including 705 age restricted single-family units, 732 non-age restricted single-family units, and up to 253 multifamily units (38 of which would be age-restricted), two commercial parcels totaling 5.33 net acres, a community clubhouse, a park and trail system, open space, and supporting infrastructure. There has also been a small increase in the right-of-way required for Rancho Cordova Parkway, which reduced Lot E by up to 0.35 acres.

Additionally, the resulting population projections have also changed. The revised Project would result in up to 4,242 persons (or 3,940 persons using the City's Quimby parkland household sizes) compared to 4,319 residents assumed in the Draft EIR. Because the number of proposed units and associated population growth has decreased since the Draft EIR was released, the impacts associated with housing and population would also decrease. For example, the amount of water demand, wastewater generation, automobile trips, and electricity use would decrease compared to what is disclosed within the Draft EIR. The change to the tentative subdivision map would not change the overall development footprint of the Project. The residential villages, commercial lots, and park lots would remain within the development footprint analyzed in the Draft EIR. No changes to the aesthetics, biological resources, cultural and tribal resources, geology and soils, greenhouse hazards and hazardous materials, hydrology and water quality, land use, noise, population and housing, public services and recreation, transportation, and utilities analyses are warranted as potential impacts would slightly decrease, in general, in association with the changes and there would be no appreciable increase in impacts associated with the changes.

Further, as a result of the changes to the tentative subdivision map, the construction schedule for the Project slightly changed. The Project Applicant Team has indicated that the Project will be constructed in a series of four phases, with construction anticipated to commence in January 2020 and conclude in December 2035:

Phase 1 (January 2020 – August 2023)

- Site preparation for Phases 1 and 2 components: January 1, 2020 – March 30, 2020
- Grading for Phases 1 and 2 and improvements for Chrysanthy Boulevard and Phase 1: April 1, 2020 – November 1, 2020.
- Paving backbone infrastructure and Phase 1: November 1, 2020 – January 30, 2021
- Building construction: February 1, 2021 – May 1, 2023
- Architectural coating: May 1, 2021 – August 1, 2023
- This phase includes the following:
    - Phase 1 Clubhouse and associated landscaping (Lot A) – 7,000 s.f. of the clubhouse complex and approximately 1/3 of lot improvements
    - Community garden (Lot C)
    - 270 single family residential units
    - 211 single family residential units – age restricted

Phase 2 (April 2022 – November 2026):

- Improvements for Phase 2: April 2022 – September 2022
- Paving: October 2022 – December 2022
- Building Construction: April 2023 – July 2026
- Architectural Coating: August 2023 – November 2026
- This phase includes the following:
    - 197 single family residential units
    - 199 single family residential units – age restricted

- Phase 2 Clubhouse and associated landscaping (Lot A) – 7,000 s.f. of the clubhouse complex and approximately 1/3 of lot improvements
- Neighborhood Park (Lot T) – 2.19 acres

Phase 3 (March 2025 – December 2030):

- Site Preparation for Phase 3: February 2025 – April 2025
- Grading: April 2025 – October 1, 2025
- Paving: October 1, 2025 – December 31, 2025
- Building Construction: January 2026 – September 2030
- Architectural Coating: April 2026 – December 2030
- Site Preparation for Rancho Cordova widening: January 2027-October 2027
- Paving for Rancho Cordova widening: October 2027-January 2028
- This phase includes the following:
  - 265 single family residential units
  - 295 single family residential units – age restricted
  - 16 senior multifamily residential units
  - Phase 3 Clubhouse and associated landscaping (Lot A) – 7,000 s.f. of the clubhouse complex and approximately 1/3 of lot improvements
  - Park (Lot D) - 10.78 acres
  - Open Space (Lots Q-S) – 12.97 acres
  - Passive Park (Lot B) – 1.58 acres
  - Passive Park (Lot U) – 1.21 acres

Phase 4 (March 2030 – December 2035):

- 4A Multifamily - Site preparation for multifamily residential (7.14 acres): March 2030 – April 2030
- 4A Multifamily - Grading and improvements: April 2030 – August 2030
- 4A Multifamily - Paving: August 2030 –October 2030
- 4A Multifamily - Building Construction: April 2031 – January 2033
- 4A Multifamily - Architectural Coating: January 2033 – May 2033
- 4B Commercial - Site preparation for commercial (5.33 acres): March 2034 – April 2034
- 4B Commercial - Grading and improvements: April 2034 – July 2034
- 4B Commercial - Paving: August 2034 –September 2034
- Commercial - Building Construction: April 2034 – August 2035
- Commercial - Architectural Coating: September 2035 – December 2035
- This phase includes the following:
  - 215 multifamily residential units
  - 22 senior multifamily residential units
  - Commercial center

Lastly, as a result of the changes to the tentative subdivision map, the requested General Plan amendment acreages have also been slightly revised.

The revised project remains consistent with the scope of the Project evaluated in the EIR and does not result in any new or increased impacts. It does not alter the analysis or conclusions of the EIR and does not require recirculation pursuant to CEQA Guidelines Section 15088.5.

Record of Proceedings and Custodian of Record

For purposes of CEQA and the findings set forth herein, the record of proceedings for the City's findings and determinations consists of the following documents and testimony, at a minimum:

- The NOP, comments received on the NOP, NOA, and all other public notices issued by the City in relation to The Ranch EIR.
- The Ranch Project Final EIR, including comment letters and technical materials cited in the document.
- All non-draft and/or non-confidential reports and memoranda prepared by the City of Rancho Cordova and consultants in relation to the EIR.
- Minutes of the discussions regarding the Project and/or project components at public hearings held by the City.
- Staff reports associated with City Council meetings on the Project.
- Those categories of materials identified in Public Resources Code Section 21167.6.

The City Clerk is the custodian of the administrative record. The documents and materials that constitute the administrative record are available for review at the City of Rancho Cordova Office of the City Clerk at: 2729 Prospect Park Drive, Rancho Cordova, CA 95670.

Consideration of the Environmental Impact Report

In adopting these Findings, this Council finds that the Final EIR was presented to this Council, the decision-making body of the lead agency, which reviewed and considered the information in the Final EIR prior to approving The Ranch Project. By these findings, this City Council ratifies, adopts, and incorporates the analysis, explanations, findings, responses to comments, and conclusions of the Final EIR. The City Council finds that the Final EIR was completed in compliance with the California Environmental Quality Act. The Final EIR represents the independent judgment and analysis of the City.

SEVERABILITY

If any term, provision, or portion of these Findings or the application of these Findings to a particular situation is held by a court to be invalid, void, or unenforceable, the remaining provisions of these Findings, or their application to other actions related to The Ranch Project, shall continue in full force and effect unless amended or modified by the City.

III. FINDINGS AND RECOMMENDATIONS REGARDING SIGNIFICANT AND UNAVOIDABLE IMPACTS

A. AESTHETICS AND VISUAL RESOURCES

1. PROJECT IMPLEMENTATION WOULD RESULT IN SUBSTANTIAL ADVERSE EFFECTS ON SCENIC VISTAS AND RESOURCES OR SUBSTANTIAL DEGRADATION OF VISUAL CHARACTER (EIR IMPACT 3.1-1)

(a) Potential Impact. The potential for the Project to result in substantial adverse effects on scenic vistas and resources or substantial degradation of visual character is discussed on pages 3.1-6 through 3.1-8 of the Draft EIR.

(b) Mitigation Measures. No feasible mitigation measures have been adopted for this impact.

(c) Findings. Based upon the EIR and the entire record before this City Council, this City Council finds that:

(1) Effects of Mitigation and Remaining Impacts. No feasible mitigation measures have been adopted for this impact. The loss of the visual appearance of the existing views, primarily of open grassland, on the site will change the visual character of the Project site in perpetuity. Compliance with the City's General Plan and design review process, implemented through the SPA Handbook, would reduce visual impacts to the greatest extent feasible; however, the Project would permanently convert the undeveloped site to urbanized uses. The Project cannot be designed to avoid or reduce impacts related to degradation of the visual character of the site to a level that is less than significant. This would represent a significant and unavoidable impact of the Project.

(2) Overriding Considerations. The environmental, economic, social and other benefits of the Project override any remaining significant adverse impact of the Project associated with impacts related to aesthetics and visual resources, as more fully stated in the Statement of Overriding Considerations in Section VII, below.

B. TRANSPORTATION AND CIRCULATION

1. UNDER EXISTING (2017) PLUS PROJECT CONDITIONS, PROJECT MAY CONFLICT WITH AN APPLICABLE PROGRAM, PLAN, ORDINANCE OR POLICY ADDRESSING THE CIRCULATION SYSTEM – ROADWAY SEGMENTS AND INTERSECTIONS (EIR IMPACT 3.13-1)

(a) Potential Impact. The potential for the Project to conflict with an applicable program, plan, ordinance or policy addressing the circulation system under the Existing (2017) Plus Project Condition for roadway segments and intersections is discussed on pages 3.13-16 through 3.13-22 of the Draft EIR.

(b) Mitigation Measures. The following mitigation measures are hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program: Mitigation Measures 3.13-1, 3.13-2, 3.13-3, 3.13-4, and 3.13-5.

(c) Findings. Based upon the EIR and the entire record before this City Council, this City Council finds that:

(1) Effects of Mitigation and Remaining Impacts. Mitigation Measure 3.13-1 requires the Project applicant to fund the Project's fair-share of converting the Jackson Road/Eagles Nest Road intersection from a side street stop controlled intersection to a signalized intersection. Mitigation Measure 3.13-2 requires the Project applicant to fund the Project's fair-share of the southbound approach improvements to the Grant Line Road/Sunrise Boulevard intersection. However, since the identified improvement falls under the jurisdiction of the County, neither the City nor the Project applicant would have control over the timing or implementation of these improvements. Therefore, impacts associated with the Jackson Road/Eagles Nest Road intersection and the Grant Line Road/Sunrise Boulevard intersection would be significant and unavoidable.

Mitigation Measure 3.13-3 requires signal timing optimization and the addition of a right-turn overlap signal phase for the eastbound right-turn at the Douglas Road/Sunrise Boulevard intersection, overlapping with the northbound left-turn movement. This mitigation measure results in the intersection operating at LOS D or better during the AM and PM peak hours, which reduces the impact to the Douglas Road/Sunrise Boulevard intersection to a less than significant level. Similarly, Mitigation Measure 3.13-4 requires signal timing optimization at the Sunrise Boulevard/White Rock Road intersection. This mitigation measure results in the intersection operating at LOS D or better during the AM and PM peak hours, which reduces the impact to the Sunrise Boulevard/White Rock Road intersection to a less than significant level. Further, Mitigation Measure 3.13-5 requires restriping the eastbound and westbound approaches to include a left turn lane and through-right lane at the Sunrise Boulevard/Zinfandel Drive intersection. This mitigation measure results in the intersection operating at LOS D or better during the AM and PM peak hours, which reduces the impact to the Sunrise Boulevard/Zinfandel Drive intersection to a less than significant level.

(2) Overriding Considerations. The environmental, economic, social and other benefits of the Project override any remaining significant adverse impact of the Project associated with impacts related to transportation and circulation, as more fully stated in the Statement of Overriding Considerations in Section VII, below.

2. UNDER CUMULATIVE (2040) PLUS PROJECT CONDITIONS, PROJECT MAY CONFLICT WITH AN APPLICABLE PROGRAM, PLAN, ORDINANCE OR POLICY ADDRESSING THE CIRCULATION SYSTEM – ROADWAY SEGMENTS AND INTERSECTIONS (EIR IMPACT 3.13-2)

(a) Potential Impact. The potential for the Project to conflict with an applicable program, plan, ordinance or policy addressing the circulation system under the Cumulative (2040) Plus Project Condition for roadway segments and intersections is discussed on pages 3.13-23 through 3.13-33 of the Draft EIR.

(b) Mitigation Measures. The following mitigation measures are hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program: Mitigation Measures 3.13-3, 3.13-4, 3.13-5, 3.13-6, 3.13-7, 3.13-8, and 3.13-9.

(c) Findings. Based upon the EIR and the entire record before this City Council, this City Council finds that:

(1) Effects of Mitigation and Remaining Impacts. Mitigation Measure 3.13-6 requires the Project applicant to fund the Project's fair-share of the improvements (converting the westbound right turn from permitted to a free right turn with a receiving lane) at the Douglas Road/Zinfandel Drive intersection. However, since the identified improvement falls under the jurisdiction of the County, neither the City nor the Project applicant would have control over the timing or implementation of the improvement. Therefore, impacts associated with the Douglas Road/Zinfandel Drive intersection would be significant and unavoidable.

Signal timing optimization at the Douglas Road/Sunrise Boulevard intersection required by Mitigation Measure 3.13-3 is not enough to mitigate the Project impacts to acceptable conditions in the Cumulative (2040) Plus Project condition. Similarly, signal timing optimization at the Sunrise Boulevard/White Rock Road intersection required by Mitigation Measure 3.13-4 is not enough to mitigate the Project impacts to acceptable conditions in the Cumulative (2040) Plus Project condition. Further, signal timing optimization at the Sunrise Boulevard/Zinfandel Drive intersection required by Mitigation Measure 3.13-5 is not enough to mitigate the Project impacts to acceptable conditions in the Cumulative (2040) Plus Project condition. Therefore, impacts associated with the Douglas Road/Sunrise Boulevard intersection, the Sunrise Boulevard/White Rock Road intersection, and the Sunrise Boulevard/Zinfandel Drive intersection would be significant and unavoidable.

Mitigation Measure 3.13-7 requires addition of a second southbound right-turn lane and the addition of a right-turn overlap signal phase for the southbound right-turn at the White Rock Road/Prairie City Road intersection. This mitigation measure results in the intersection operating at LOS D during the AM and PM peak hours, which reduces the impact to the White Rock Road/Prairie City Road intersection to a less than significant level. Mitigation Measure 3.13-9 requires the Project applicant to widen Rancho Cordova Parkway from two lanes to four lanes

along the Project extents. This measure would reduce impacts to Rancho Cordova Parkway along the Project extents to a less than significant level.

Mitigation Measure 3.13-8 requires the Project applicant to contribute its fair share towards the widening of Douglas Road to the City's maximum allowable capacity of six lanes. With this improvement, Roadway Segment #9, Douglas Road between Mather Boulevard and Sunrise Boulevard, would operate at an acceptable LOS. However, since the identified improvement falls partially under the jurisdiction of the County, neither the City nor the Project applicant would have control over the timing or implementation of this improvement. Therefore, impacts associated with Roadway Segment #9, Douglas Road between Mather Boulevard and Sunrise Boulevard, would be significant and unavoidable.

(2) Overriding Considerations. The environmental, economic, social and other benefits of the Project override any remaining significant adverse impact of the Project associated with impacts related to transportation and circulation, as more fully stated in the Statement of Overriding Considerations in Section VII, below.

IV. FINDINGS AND RECOMMENDATIONS REGARDING SIGNIFICANT IMPACTS WHICH ARE MITIGATED TO A LESS THAN SIGNIFICANT LEVEL

A. BIOLOGICAL RESOURCES

1. THE PROJECT HAS THE POTENTIAL TO, DIRECTLY OR INDIRECTLY, HAVE A SUBSTANTIAL ADVERSE EFFECT THROUGH HABITAT MODIFICATIONS OR REDUCTIONS, CAUSE POPULATIONS TO DROP BELOW SELF-SUSTAINING LEVELS, SUBSTANTIALLY ELIMINATE A COMMUNITY, OR SUBSTANTIALLY REDUCE THE NUMBER OF, OR RESTRICT THE RANGE OF, AN ENDANGERED, RARE OR THREATENED SPECIES, INCLUDING THOSE CONSIDERED CANDIDATE, SENSITIVE, OR SPECIAL-STATUS, IN LOCAL OR REGIONAL PLANS, POLICIES, REGULATIONS, OR BY THE CDFW OR USFWS - INVERTEBRATES (LESS THAN SIGNIFICANT WITH MITIGATION) (EIR IMPACT 3.3-1)

(a) Potential Impact. The potential for the Project to have a direct or indirect impact on special-status invertebrate species is discussed on pages 3.3-34 through 3.3-43 of the Draft EIR.

(b) Mitigation Measures. The following mitigation measures are hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program: Mitigation Measures 3.3-1 and 3.3-2.

(c) Findings. Based upon the EIR and the entire record before this City Council, this City Council finds that the impacts to special-status invertebrate species will be mitigated to a less than significant level as Mitigation Measure 3.3-1 requires that the Project proponent submit a South Sacramento Habitat Conservation Plan (SSHCP) permit

application package to the City as a request that the incidental take coverage provided by the City's SSHCP incidental take permit (ITP) be extended to the proposed activities. Additionally, Mitigation Measure 3.3-2 requires that all applicable avoidance and mitigation measures (AMMs) identified in the SSHCP be implemented to avoid direct and indirect effects to invertebrates. The mitigation measures would result in compensatory mitigation for the loss of habitat, and would avoid or minimize impacts to protected species to the extent feasible.

Any remaining impacts related to special-status invertebrate species after implementation of Mitigation Measures 3.3-1 and 3.3-2 would not be significant. As authorized by Public Resources Code Section 21081(a)(1) and Title 14, California Code of Regulations Section 15091(a)(1), the City finds that changes or alterations have been required herein, incorporated into the Project, or required as a condition of project approval, which mitigate or avoid the significant environmental impact listed above, and as identified in the FEIR. The City further finds that the change or alteration in the Project or the requirement to impose the mitigation as a condition of project approval is within the jurisdiction of the City to require, and that this mitigation is appropriate and feasible.

2. THE PROJECT HAS THE POTENTIAL TO, DIRECTLY OR INDIRECTLY, HAVE A SUBSTANTIAL ADVERSE EFFECT THROUGH HABITAT MODIFICATIONS OR REDUCTIONS, CAUSE POPULATIONS TO DROP BELOW SELF-SUSTAINING LEVELS, SUBSTANTIALLY ELIMINATE A COMMUNITY, OR SUBSTANTIALLY REDUCE THE NUMBER OF, OR RESTRICT THE RANGE OF, AN ENDANGERED, RARE OR THREATENED SPECIES, INCLUDING THOSE CONSIDERED CANDIDATE, SENSITIVE, OR SPECIAL-STATUS, IN LOCAL OR REGIONAL PLANS, POLICIES, REGULATIONS, OR BY THE CDFW OR USFWS - REPTILE AND AMPHIBIAN (EIR IMPACT 3.3-2)

(a) Potential Impact. The potential for the Project to have a direct or indirect impact on special-status reptile and amphibian species is discussed on pages 3.3-44 through 3.3-47 of the Draft EIR.

(b) Mitigation Measures. The following mitigation measure is hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program: Mitigation Measure 3.3-3.

(c) Findings. Based upon the EIR and the entire record before this City Council, this City Council finds that the impacts to special-status reptile and amphibian species will be mitigated to a less than significant level as Mitigation Measure 3.3-3 includes AMMs that are specifically presented for western spadefoot. Additionally, Mitigation Measure 3.3-3 would result in compensatory mitigation for the loss of habitat, and would avoid or minimize impacts to protected species to the extent feasible.

Any remaining impacts related to special-status reptile and amphibian species after implementation of Mitigation Measure 3.3-3 would not be significant. As authorized by Public Resources Code Section 21081(a)(1) and Title 14, California Code of

Regulations Section 15091(a)(1), the City finds that changes or alterations have been required herein, incorporated into the Project, or required as a condition of project approval, which mitigate or avoid the significant environmental impact listed above, and as identified in the FEIR. The City further finds that the change or alteration in the Project or the requirement to impose the mitigation as a condition of project approval is within the jurisdiction of the City to require, and that this mitigation is appropriate and feasible.

3. THE PROJECT HAS THE POTENTIAL TO, DIRECTLY OR INDIRECTLY, HAVE A SUBSTANTIAL ADVERSE EFFECT THROUGH HABITAT MODIFICATIONS OR REDUCTIONS, CAUSE POPULATIONS TO DROP BELOW SELF-SUSTAINING LEVELS, SUBSTANTIALLY ELIMINATE A COMMUNITY, OR SUBSTANTIALLY REDUCE THE NUMBER OF, OR RESTRICT THE RANGE OF, AN ENDANGERED, RARE OR THREATENED SPECIES, INCLUDING THOSE CONSIDERED CANDIDATE, SENSITIVE, OR SPECIAL-STATUS, IN LOCAL OR REGIONAL PLANS, POLICIES, REGULATIONS, OR BY THE CDFW OR USFWS - BIRDS (EIR IMPACT 3.3-4)

(a) Potential Impact. The potential for the Project to have a direct or indirect impact on special-status bird species is discussed on pages 3.3-48 through 3.3-61 of the Draft EIR.

(b) Mitigation Measures. The following mitigation measures are hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program: Mitigation Measures 3.3-4, 3.3-5, 3.3-6, 3.3-7, and 3.3-8.

(c) Findings. Based upon the EIR and the entire record before this City Council, this City Council finds that the impacts to special-status bird species will be mitigated to a less than significant level as Mitigation Measures 3.3-4 through 3.7 include AMMs that are specifically presented for special-status birds. It is noted, however, that before construction begins, the SSHCP requires that the Project proponent demonstrate to the City that all necessary AMMs will be fulfilled. Additionally, Mitigation Measure 3.3-8 requires preconstruction surveys for other protected bird species.

Any remaining impacts related to special-status bird species after implementation of Mitigation Measures 3.3-4, 3.3-5, 3.3-6, 3.3-7, and 3.3-8 would not be significant. As authorized by Public Resources Code Section 21081(a)(1) and Title 14, California Code of Regulations Section 15091(a)(1), the City finds that changes or alterations have been required herein, incorporated into the Project, or required as a condition of project approval, which mitigate or avoid the significant environmental impact listed above, and as identified in the FEIR. The City further finds that the change or alteration in the Project or the requirement to impose the mitigation as a condition of project approval is within the jurisdiction of the City to require, and that this mitigation is appropriate and feasible.

4. THE PROJECT HAS THE POTENTIAL TO, DIRECTLY OR INDIRECTLY, HAVE A SUBSTANTIAL ADVERSE EFFECT THROUGH HABITAT MODIFICATIONS OR REDUCTIONS, CAUSE POPULATIONS TO DROP BELOW SELF-SUSTAINING LEVELS, SUBSTANTIALLY ELIMINATE A COMMUNITY, OR SUBSTANTIALLY REDUCE THE NUMBER OF, OR RESTRICT THE RANGE OF, AN ENDANGERED, RARE OR THREATENED SPECIES, INCLUDING THOSE CONSIDERED CANDIDATE, SENSITIVE, OR SPECIAL-STATUS, IN LOCAL OR REGIONAL PLANS, POLICIES, REGULATIONS, OR BY THE CDFW OR USFWS - MAMMALS (EIR IMPACT 3.3-5)

(a) Potential Impact. The potential for the Project to have a direct or indirect impact on special-status mammal species is discussed on pages 3.3-62 through 3.3-65 of the Draft EIR.

(b) Mitigation Measures. The following mitigation measures are hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program: Mitigation Measures 3.3-9 and 3.3-10.

(c) Findings. Based upon the EIR and the entire record before this City Council, this City Council finds that the impacts to special-status mammal species will be mitigated to a less than significant level as Mitigation Measures 3.3-9 and 3.3-10 include AMMs that are specifically presented for special-status bats and American badger. It is noted, however, that before construction begins, the SSHCP requires that the Project proponent demonstrate to the City that all necessary AMMs will be fulfilled. The mitigation measures would result in compensatory mitigation for the loss of habitat, and would avoid or minimize impacts to protected species to the extent feasible.

Any remaining impacts related to special-status mammal species after implementation of Measures 3.3-9 and 3.3-10 would not be significant. As authorized by Public Resources Code Section 21081(a)(1) and Title 14, California Code of Regulations Section 15091(a)(1), the City finds that changes or alterations have been required herein, incorporated into the Project, or required as a condition of project approval, which mitigate or avoid the significant environmental impact listed above, and as identified in the FEIR. The City further finds that the change or alteration in the Project or the requirement to impose the mitigation as a condition of project approval is within the jurisdiction of the City to require, and that this mitigation is appropriate and feasible.

5. THE PROJECT HAS THE POTENTIAL TO, DIRECTLY OR INDIRECTLY, HAVE A SUBSTANTIAL ADVERSE EFFECT THROUGH HABITAT MODIFICATIONS OR REDUCTIONS, CAUSE POPULATIONS TO DROP BELOW SELF-SUSTAINING LEVELS, SUBSTANTIALLY ELIMINATE A COMMUNITY, OR SUBSTANTIALLY REDUCE THE NUMBER OF, OR RESTRICT THE RANGE OF, AN ENDANGERED, RARE OR THREATENED SPECIES, INCLUDING THOSE CONSIDERED CANDIDATE, SENSITIVE, OR SPECIAL-STATUS, IN LOCAL OR REGIONAL PLANS, POLICIES, REGULATIONS, OR BY THE CDFW OR USFWS - PLANTS (EIR IMPACT 3.3-6)

(a) Potential Impact. The potential for the Project to have a direct or indirect impact on candidate, sensitive, or special-status plant species is discussed on pages 3.3-65 through 3.3-67 of the Draft EIR.

(b) Mitigation Measures. The following mitigation measure is hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program: Mitigation Measure 3.3-11.

(c) Findings. Based upon the EIR and the entire record before this City Council, this City Council finds that the impacts to candidate, sensitive, or special-status plant species will be mitigated to a less than significant level as Mitigation Measure 3.3-11 includes AMMs that are specifically presented for special-status plants. It is noted, however, that before construction begins, the SSHCP requires that the Project proponent demonstrate to the City that all necessary AMMs will be fulfilled. This mitigation measure would result in compensatory mitigation for the loss of habitat, and would avoid or minimize impacts to protected species to the extent feasible

Any remaining impacts related to candidate, sensitive, or special-status plant species after implementation of Mitigation Measure 3.3-11 would not be significant. As authorized by Public Resources Code Section 21081(a)(1) and Title 14, California Code of Regulations Section 15091(a)(1), the City finds that changes or alterations have been required herein, incorporated into the Project, or required as a condition of project approval, which mitigate or avoid the significant environmental impact listed above, and as identified in the FEIR. The City further finds that the change or alteration in the Project or the requirement to impose the mitigation as a condition of project approval is within the jurisdiction of the City to require, and that this mitigation is appropriate and feasible.

6. THE PROJECT HAS THE POTENTIAL TO HAVE SUBSTANTIAL ADVERSE EFFECT ON FEDERALLY- OR STATE-PROTECTED WETLANDS (INCLUDING, BUT NOT LIMITED TO, MARSH, VERNAL POOL, COASTAL, ETC.) THROUGH DIRECT REMOVAL, FILLING, HYDROLOGICAL INTERRUPTION, OR OTHER MEANS (EIR IMPACT 3.3-7)

(a) Potential Impact. The potential for the Project to affect protected wetlands and jurisdictional waters is discussed on pages 3.3-67 through 3.3-73 of the Draft EIR.

(b) Mitigation Measures. The following mitigation measures are hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program: Mitigation Measures 3.5-1, 3.3-12 and 3.3-13.

(c) Findings. Based upon the EIR and the entire record before this City Council, this City Council finds that the impacts to protected wetlands and jurisdictional waters will be mitigated to a less than significant level as Mitigation Measure 3.3-12 requires the Project to submit a wetland delineation, site plan, and mitigation methods to the City of Rancho Cordova and the South Sacramento Conservation Agency. The Project proponent would also submit a SSHCP permit application package to the City of Rancho Cordova ("Land Use Authority Permittee") as a request that coverage provided by City's SSHCP Aquatic Resources Program be extended to the proposed activities. This measure also requires payment of the mitigation fees, which would be routed to the in-lieu fee program. Mitigation Measure 3.3-13 requires implementation of SSHCP AMMs that will minimize the direct and indirect impacts on the aquatic land covers of the vernal pool ecosystem. The SSHCP AMMs include limiting ground disturbance to the construction footprint; implementing erosion-control BMPs during ground disturbance and siting roads and utilities outside of sensitive areas (BMP-1, BMP-2, BMP-3, ROAD-1, and UTILITY-4); and implementing BMPs that control construction dust (BMP-5), limit construction lighting in adjacent natural habitats (BMP-6), require biological monitoring (BMP-7), require worker awareness training (BMP-8), and implement speed limits on the construction site (BMP-11). Indirect impacts to stream/creek and vernal pool water quality and hydrology would be minimized by AMM LID-1 through LID-3 and EDGE-4 through EDGE-7.

Any remaining impacts related to protected wetlands and jurisdictional waters after implementation of Mitigation Measures 3.3-12 and 3.3-13 would not be significant. As authorized by Public Resources Code Section 21081(a)(1) and Title 14, California Code of Regulations Section 15091(a)(1), the City finds that changes or alterations have been required herein, incorporated into the Project, or required as a condition of project approval, which mitigate or avoid the significant environmental impact listed above, and as identified in the FEIR. The City further finds that the change or alteration in the Project or the requirement to impose the mitigation as a condition of project approval is within the jurisdiction of the City to require, and that this mitigation is appropriate and feasible.

B. CULTURAL AND TRIBAL RESOURCES

1. PROJECT IMPLEMENTATION HAS THE POTENTIAL TO CAUSE A SUBSTANTIAL ADVERSE CHANGE TO A SIGNIFICANT HISTORICAL OR ARCHAEOLOGICAL RESOURCE, AS DEFINED IN CEQA GUIDELINES §15064.5, OR A SIGNIFICANT TRIBAL CULTURAL RESOURCE, AS DEFINED IN PUBLIC RESOURCES CODE §21074 (EIR IMPACT 3.4-1)

(a) Potential Impact. The potential for the Project to cause a substantial adverse change to a significant historical or archaeological resource, as defined in CEQA Guidelines

§15064.5, or a significant tribal cultural resource, as defined in Public Resources Code §21074, is discussed on page 3.4-13 through 3.4-15 of the Draft EIR.

(b) Mitigation Measures. The following mitigation measure is hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program: Mitigation Measures 3.4-1 and 3.4-2.

(c) Findings. Based upon the EIR and the entire record before this City Council, this City Council finds that impacts to a significant historical resource or significant tribal cultural resource will be mitigated to a less than significant level as Mitigation Measure 3.4-1 provides for tribal monitoring of ground-disturbing activities by the United Auburn Indian Community of the Auburn Rancheria (UAIC) and the Shingle Springs Band of Miwok Indians and provides the tribes with an opportunity to make recommendations regarding any tribal cultural resources if inadvertently discovered. Mitigation Measure 3.4-1 provides the UAIC tribe with an opportunity to make recommendations regarding tribal cultural resources or Native American remains, if inadvertently discovered. Mitigation Measure 3.4-2 requires the Shingle Springs Band of Miwok Indians tribe to be consulted if human remains that are Native American in origin are inadvertently discovered.

Any remaining impacts related to a significant historical resource or significant tribal cultural resource after implementation of Mitigation Measures 3.4-1 and 3.4-2 would not be significant. As authorized by Public Resources Code Section 21081(a)(1) and Title 14, California Code of Regulations Section 15091(a)(1), the City finds that changes or alterations have been required herein, incorporated into the Project, or required as a condition of project approval, which mitigate or avoid the significant environmental impact listed above, and as identified in the FEIR. The City further finds that the change or alteration in the Project or the requirement to impose the mitigation as a condition of project approval is within the jurisdiction of the City to require, and that this mitigation is appropriate and feasible.

2. PROJECT IMPLEMENTATION HAS THE POTENTIAL TO DISTURB HUMAN REMAINS, INCLUDING THOSE INTERRED OUTSIDE OF FORMAL CEMETERIES (EIR IMPACT 3.4-2)

(a) Potential Impact. The potential for the Project to cause a substantial adverse change to Native American human remains, as defined in CEQA Guidelines §15064.5, is discussed on pages 3.4-15 and 3.4-16 of the Draft EIR.

(b) Mitigation Measures. The following mitigation measure is hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program: Mitigation Measure 3.4-2.

(c) Findings. Based upon the EIR and the entire record before this City Council, this City Council finds that impacts to Native American human remains will be mitigated to a less than significant level as Mitigation Measure 3.4-2 would require work to be halted

if human remains are discovered during the course of construction. The Sacramento County Coroner would be informed. If the remains are of Native American origin, the Native American Heritage Commission would be contacted to ascertain the proper descendants from the deceased individual.

Any remaining impacts related to disturbance of Native American human remains after implementation of Mitigation Measure 3.4-2 would not be significant. As authorized by Public Resources Code Section 21081(a)(1) and Title 14, California Code of Regulations Section 15091(a)(1), the City finds that changes or alterations have been required herein, incorporated into the Project, or required as a condition of project approval, which mitigate or avoid the significant environmental impact listed above, and as identified in the FEIR. The City further finds that the change or alteration in the Project or the requirement to impose the mitigation as a condition of project approval is within the jurisdiction of the City to require, and that this mitigation is appropriate and feasible.

C. GEOLOGY AND SOILS

1. PROJECT CONSTRUCTION AND IMPLEMENTATION HAS THE POTENTIAL TO RESULT IN SUBSTANTIAL SOIL EROSION OR THE LOSS OF TOPSOIL (EIR IMPACT 3.5-2)

(a) Potential Impact. The potential for the Project to result in substantial soil erosion or the loss of topsoil is discussed on page 3.5-14 and 3.5-15 of the Draft EIR.

(b) Mitigation Measures. The following mitigation measure is hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program: Mitigation Measure 3.5-1.

(c) Findings. Based upon the EIR and the entire record before this City Council, this City Council finds that impacts related to substantial soil erosion or the loss of topsoil will be mitigated to a less than significant level as Mitigation Measure 3.5-1 requires a Storm Water Pollution Prevention Plan that includes best management practices for grading and preservation of topsoil be submitted to the Regional Water Quality Control Board.

Any remaining impacts related to erosion or loss of topsoil after implementation of Mitigation Measure 3.5-1 would not be significant. As authorized by Public Resources Code Section 21081(a)(1) and Title 14, California Code of Regulations Section 15091(a)(1), the City finds that changes or alterations have been required herein, incorporated into the Project, or required as a condition of project approval, which mitigate or avoid the significant environmental impact listed above, and as identified in the FEIR. The City further finds that the change or alteration in the Project or the requirement to impose the mitigation as a condition of project approval is within the jurisdiction of the City to require, and that this mitigation is appropriate and feasible.

2. THE PROJECT HAS THE POTENTIAL TO BE LOCATED ON A GEOLOGIC UNIT OR SOIL THAT IS UNSTABLE, OR THAT WOULD BECOME UNSTABLE AS A RESULT OF PROJECT IMPLEMENTATION, AND POTENTIALLY RESULT IN LANDSLIDE, LATERAL SPREADING, SUBSIDENCE, LIQUEFACTION OR COLLAPSE (EIR IMPACT 3.5-3)

(a) Potential Impact. The potential for the Project to be located on a geologic unit or soil that is unstable, or that would become unstable as a result of Project implementation, and potentially result in landslide, lateral spreading, subsidence, liquefaction or collapse is discussed on page 3.5-15 through 3.5-18 of the Draft EIR.

(b) Mitigation Measures. The following mitigation measure is hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program: Mitigation Measure 3.5-2.

(c) Findings. Based upon the EIR and the entire record before this City Council, this City Council finds that impacts related to unstable soils will be mitigated to a less than significant level as Mitigation Measure 3.5-2 will ensure that a design-level geotechnical engineering report is produced by a California Registered Civil Engineer or Geotechnical Engineer. The design-level geotechnical engineering report would include a summary of the site, soil, and groundwater conditions, seismicity, laboratory test data, exploration data and a site plan showing exploratory locations and improvement limits.

Any remaining impacts related to unstable soils after implementation of Mitigation Measure 3.5-2 would not be significant. As authorized by Public Resources Code Section 21081(a)(1) and Title 14, California Code of Regulations Section 15091(a)(1), the City finds that changes or alterations have been required herein, incorporated into the Project, or required as a condition of project approval, which mitigate or avoid the significant environmental impact listed above, and as identified in the FEIR. The City further finds that the change or alteration in the Project or the requirement to impose the mitigation as a condition of project approval is within the jurisdiction of the City to require, and that this mitigation is appropriate and feasible.

3. PROJECT IMPLEMENTATION HAS THE POTENTIAL TO DIRECTLY OR INDIRECTLY DESTROY A UNIQUE PALEONTOLOGICAL RESOURCE (EIR IMPACT 3.5-5)

(a) Potential Impact. The potential for the Project to directly or indirectly destroy a unique paleontological resource is discussed on page 3.5-18 and 3.5-19 of the Draft EIR.

(b) Mitigation Measures. The following mitigation measure is hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program: Mitigation Measure 3.5-3.

(c) Findings. Based upon the EIR and the entire record before this City Council, this City Council finds that impacts related to unique paleontological resources will be

mitigated to a less than significant level as Mitigation Measure 3.5-3 would ensure steps would be taken to reduce impacts to paleontological resources in the event that they are discovered during construction.

Any remaining impacts related to unstable soils after implementation of Mitigation Measure 3.5-3 would not be significant. As authorized by Public Resources Code Section 21081(a)(1) and Title 14, California Code of Regulations Section 15091(a)(1), the City finds that changes or alterations have been required herein, incorporated into the Project, or required as a condition of project approval, which mitigate or avoid the significant environmental impact listed above, and as identified in the FEIR. The City further finds that the change or alteration in the Project or the requirement to impose the mitigation as a condition of project approval is within the jurisdiction of the City to require, and that this mitigation is appropriate and feasible.

D. GREENHOUSE GASSES, CLIMATE CHANGE, AND ENERGY

1. THE PROJECT HAS THE POTENTIAL TO GENERATE CONSTRUCTION-RELATED GHGS, EITHER DIRECTLY OR INDIRECTLY, THAT MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT (EIR IMPACT 3.6-1)

(a) Potential Impact. The potential for the Project to generate construction-related greenhouse gases (GHGs), either directly or indirectly, that may have a significant effect on the environment is discussed on pages 3.6-22 through 3.6-25 of the Draft EIR.

(b) Mitigation Measures. The following mitigation measures are hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program: Mitigation Measure 3.6-1, 3.6-2, and 3.6-3.

(c) Findings. Based upon the EIR and the entire record before this City Council, this City Council finds that implementation of Mitigation Measures 3.6-1 and 3.6-2 and 3.6-3 will ensure that the Project applicant implements SMAQMD's Guidance for Construction GHG Emissions Reductions, as well as the SMAQMD's Basic Construction Emission Control Practices (BCECP) to reduce construction-related emissions. Mitigation Measure 3.6-3 requires the Project to purchase carbon offsets for GHG emissions, which includes operational emissions as well as amortized construction emissions, to reduce emissions below the applicable SMAQMD threshold. Any remaining impacts related to direct or indirect generation of construction-related GHG emissions after implementation of Mitigation Measures 3.6-1, 3.6-2, and 3.6-3 would not be significant.

As authorized by Public Resources Code Section 21081(a)(1) and Title 14, California Code of Regulations Section 15091(a)(1), the City finds that changes or alterations have been required herein, incorporated into the Project, or required as a condition of project approval, which mitigate or avoid the significant environmental impact listed

above, and as identified in the FEIR. The City further finds that the change or alteration in the Project or the requirement to impose the mitigation as a condition of project approval is within the jurisdiction of the City to require, and that this mitigation is appropriate and feasible.

2. THE PROJECT HAS THE POTENTIAL TO GENERATE OPERATION-RELATED GHGS, EITHER DIRECTLY OR INDIRECTLY, THAT MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT (EIR IMPACT 3.6-2)

(a) Potential Impact. The potential for the Project to generate operation-related GHGs, either directly or indirectly, that may have a significant effect on the environment is discussed on pages 3.6-25 through 3.6-35 of the Draft EIR.

(b) Mitigation Measures. The following mitigation measure is hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program: Mitigation Measure 3.6-3.

(c) Findings. Based upon the EIR and the entire record before this City Council, this City Council finds that implementation of Mitigation Measure 3.6-3 will ensure that the Project applicant implements additional features in the Project that would reduce GHG emissions, including membership of Project components (residential communities, commercial uses, and parks and recreation uses) in a Transportation Management Association, increased efficiency beyond the minimum requirements of Title 24, use of native and drought-tolerant landscaping and trees, and purchasing carbon offsets. Any remaining impacts related to direct or indirect generation of operational GHG emissions after implementation of Mitigation Measure 3.6-3 would not be significant.

As authorized by Public Resources Code Section 21081(a)(1) and Title 14, California Code of Regulations Section 15091(a)(1), the City finds that changes or alterations have been required herein, incorporated into the Project, or required as a condition of project approval, which mitigate or avoid the significant environmental impact listed above, and as identified in the FEIR. The City further finds that the change or alteration in the Project or the requirement to impose the mitigation as a condition of project approval is within the jurisdiction of the City to require, and that this mitigation is appropriate and feasible.

3. THE PROJECT HAS THE POTENTIAL TO CONFLICT WITH AN APPLICABLE PLAN, POLICY, OR REGULATION ADOPTED FOR THE PURPOSE OF REDUCING THE EMISSIONS OF GREENHOUSE GASES (EIR IMPACT 3.6-3)

(a) Potential Impact. The potential for the Project to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs is discussed on pages 3.6-35 through 3.6-37 of the Draft EIR.

(b) Mitigation Measures. The following mitigation measure is hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program: Mitigation Measure 3.6-3.

(c) Findings. Based upon the EIR and the entire record before this City Council, this City Council finds that implementation of Mitigation Measures 3.6-1 and 3.6-2 will reduce construction-related emissions and that Mitigation Measure 3.6-3 will ensure that the Project applicant implements additional features in the Project that would reduce GHG emissions, including membership of Project components (residential communities, commercial uses, and parks and recreation uses), in a Transportation Management Association, increased efficiency beyond the minimum requirements of Title 24, use of native and drought-tolerant landscaping and trees, and purchasing carbon offsets. Any remaining impacts related to conflicts with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs after implementation of Mitigation Measure 3.6-3 would not be significant.

As authorized by Public Resources Code Section 21081(a)(1) and Title 14, California Code of Regulations Section 15091(a)(1), the City finds that changes or alterations have been required herein, incorporated into the Project, or required as a condition of project approval, which mitigate or avoid the significant environmental impact listed above, and as identified in the FEIR. The City further finds that the change or alteration in the Project or the requirement to impose the mitigation as a condition of project approval is within the jurisdiction of the City to require, and that this mitigation is appropriate and feasible.

E. HAZARDS AND HAZARDOUS MATERIALS

1. PROJECT IMPLEMENTATION HAS THE POTENTIAL TO CREATE A SIGNIFICANT HAZARD THROUGH THE ROUTINE TRANSPORT, USE, OR DISPOSAL OF HAZARDOUS MATERIALS OR THROUGH THE REASONABLY FORESEEABLE UPSET AND ACCIDENT CONDITIONS INVOLVING THE RELEASE OF HAZARDOUS MATERIALS INTO THE ENVIRONMENT (EIR IMPACT 3.7-1)

(a) Potential Impact. The potential for the Project to create a significant hazard through the routine transport, use, or disposal of hazardous materials or through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment is discussed on pages 3.7-18 through 3.7-20 of the Draft EIR.

(b) Mitigation Measures. The following mitigation measure is hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program: Mitigation Measure 3.7-1.

(c) Findings. Based upon the EIR and the potential for the Project to create a significant hazard through the routine transport, use, or disposal of hazardous materials or through the reasonably foreseeable upset and accident conditions involving the

release of hazardous materials into the environment, will be mitigated to a less than significant level as Mitigation Measure 3.7-1 requires submittal and approval of a Construction Site Management Plan. The Construction Site Management Plan would establish management practices for handling hazardous materials, including fuels, paints, cleaners, solvents, etc., during construction to reduce the potential for spills and to direct the safe handling of these materials if encountered.

Any remaining impacts related to hazardous materials routine transport, use, disposal, or through accident conditions involving the release of hazardous materials into the environment after implementation of Mitigation Measure 3.7-1 would not be significant. As authorized by Public Resources Code Section 21081(a)(1) and Title 14, California Code of Regulations Section 15091(a)(1), the City finds that changes or alterations have been required herein, incorporated into the Project, or required as a condition of project approval, which mitigate or avoid the significant environmental impact listed above, and as identified in the FEIR. The City further finds that the change or alteration in the Project or the requirement to impose the mitigation as a condition of project approval is within the jurisdiction of the City to require, and that this mitigation is appropriate and feasible.

F. HYDROLOGY AND WATER QUALITY

1. THE PROJECT MAY VIOLATE WATER QUALITY STANDARDS OR WASTE DISCHARGE REQUIREMENTS OR OTHERWISE SUBSTANTIALLY DEGRADE SURFACE OR GROUNDWATER QUALITY DURING CONSTRUCTION (EIR IMPACT 3.8-1)

(a) Potential Impact. The potential for the Project to violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality during construction is discussed on pages 3.8-16 through 3.8-18 of the Draft EIR.

(b) Mitigation Measures. The following mitigation measures are hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program: Mitigation Measures 3.5-1 and 3.8-1.

(c) Findings. Based upon the EIR and the entire record before this City Council, this City Council finds that impacts associated with the potential to violate water quality standards or waste discharge requirements during construction will be mitigated to a less than significant level as Mitigation Measures 3.5-1 and 3.8-1 require the preparation of a detailed SWPPP, implementation of BMPs, and submittal and approval of a Spill Prevention Countermeasure and Control Plan which will specify measures and procedures to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during all construction activities.

Any remaining impacts related to water quality standards or waste discharge requirements during construction after implementation of Mitigation Measures 3.5-1

and 3.8-1 would not be significant. As authorized by Public Resources Code Section 21081(a)(1) and Title 14, California Code of Regulations Section 15091(a)(1), the City finds that changes or alterations have been required herein, incorporated into the Project, or required as a condition of project approval, which mitigate or avoid the significant environmental impact listed above, and as identified in the FEIR. The City further finds that the change or alteration in the Project or the requirement to impose the mitigation as a condition of project approval is within the jurisdiction of the City to require, and that this mitigation is appropriate and feasible.

2. THE PROJECT MAY VIOLATE WATER QUALITY STANDARDS OR WASTE DISCHARGE REQUIREMENTS OR OTHERWISE SUBSTANTIALLY DEGRADE SURFACE OR GROUNDWATER QUALITY DURING POST-CONSTRUCTION (EIR IMPACT 3.8-2)

(a) Potential Impact. The potential for the Project to violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality during post-construction is discussed on pages 3.8-18 through 3.8-20 of the Draft EIR.

(b) Mitigation Measures. The following mitigation measure is hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program: Mitigation Measure 3.8-2.

(c) Findings. Based upon the EIR and the entire record before this City Council, this City Council finds that impacts associated with violations of water quality standards or waste discharge requirements post-construction will be mitigated to a less than significant level as Mitigation Measure 3.8-2 requires submittal of a detailed Best Management Practice (BMP) and water quality maintenance plan. The plan shall be prepared by a qualified engineer retained by the Project applicant that meets the standards of the City's NPDES Permit (No. CAS00853254) and shall document that stormwater runoff from the Project site is treated per the standards in the Stormwater Quality Design Manual for Sacramento and South Placer Regions.

Any remaining impacts related to water quality, and waste discharge after implementation of Mitigation Measure 3.8-2 would not be significant. As authorized by Public Resources Code Section 21081(a)(1) and Title 14, California Code of Regulations Section 15091(a)(1), the City finds that changes or alterations have been required herein, incorporated into the Project, or required as a condition of project approval, which mitigate or avoid the significant environmental impact listed above, and as identified in the FEIR. The City further finds that the change or alteration in the Project or the requirement to impose the mitigation as a condition of project approval is within the jurisdiction of the City to require, and that this mitigation is appropriate and feasible.

G. LAND USE

1. IMPLEMENTATION OF THE PROJECT WOULD NOT CONFLICT WITH AN APPLICABLE LAND USE PLAN, POLICY, OR REGULATION OF AN AGENCY WITH JURISDICTION OVER THE PROJECT ADOPTED TO AVOID OR MITIGATE AN ENVIRONMENTAL EFFECT (EIR IMPACT 3.9-1)

(a) Potential Impact. The potential for the Project to conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project adopted to avoid or mitigate an environmental effect is discussed on pages 3.9-11 through 3.9-15 of the Draft EIR.

(b) Mitigation Measures. The following mitigation measure is hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program: Mitigation Measure 3.9-1.

(c) Findings. Based upon the EIR and the entire record before this City Council, this City Council finds that impacts associated with conflicts with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project adopted to avoid or mitigate an environmental effect will be mitigated to a less than significant level. The Project would be consistent with the land use plans, policies, and regulations adopted to address environmental impacts, including the Rancho Cordova General Plan, the City's Zoning Code, and the Metropolitan Transportation Plan/Sustainable Communities Strategy. As described in Sections 3.2, Air Quality, 3.6, Greenhouse Gases and Energy, and 3.13, Transportation and Circulation, of the Draft EIR comprehensive features and measures are included in the Project to reduce GHG emissions. Mitigation Measure 3.9-1 requires that the proposed open space areas located under the Sacramento Municipal Utility District (SMUD) transmission line that traverses the site be designed and maintained in accordance with SMUD's Guide for Transmission Encroachment. Mitigation Measure 3.9-1 requires that the proposed open space areas located under the SMUD and Pacific Gas and Electric Company (PG&E) transmission lines be designed and maintained in accordance with SMUD and PG&E requirements and would ensure the Project is consistent with SMUD's Guide for Transmission Encroachment and PG&E's Electric and Gas Service Requirements.

Any remaining impacts related to conflicts with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project adopted to avoid or mitigate an environmental effect after implementation of Mitigation Measure 3.9-1 would not be significant. As authorized by Public Resources Code Section 21081(a)(1) and Title 14, California Code of Regulations Section 15091(a)(1), the City finds that changes or alterations have been required herein, incorporated into the Project, or required as a condition of project approval, which mitigate or avoid the significant environmental impact listed above, and as identified in the FEIR. The City further finds that the change or alteration in the Project or the requirement to impose the mitigation as a condition of project approval is within the jurisdiction of the City to require, and that this mitigation is appropriate and feasible.

V. FINDINGS AND RECOMMENDATIONS REGARDING THOSE IMPACTS WHICH ARE LESS THAN SIGNIFICANT OR LESS THAN CUMULATIVELY CONSIDERABLE

Specific impacts within the following categories of environmental effects were found to be less than significant as set forth in more detail in the Draft EIR and Final EIR.

Aesthetics and Visual Resources: The following specific impact was found to be less than significant: 3.1-2.

Air Quality: The following specific impacts were found to be less than significant: 3.2-1, 3.2-2, 3.2-3, and 3.2-4.

Biological Resources: The following specific impacts were found to have no impact: 3.3-3, 3.3-8, 3.3-9, 3.3-10, and 3.3-11.

Geology and Soils: The following specific impacts were found to be less than significant: 3.5-1 and 3.5-4.

Greenhouse Gases and Climate Change: The following specific impacts were found to be less than significant: 3.6-3 and 3.6-4.

Hazards and Hazardous Materials: The following specific impacts were found to be less than significant: 3.7-2, 3.7-3, 3.7-4, and 3.7-5.

Hydrology and Water Quality: The following specific impacts were found to be less than significant: 3.8-3, 3.8-4, and 3.8-5.

Noise: The following specific impacts were found to be less than significant: 3.10-1, 3.10-2, 3.10-3, and 3.10-4.

Population and Housing: The following specific impact was found to be less than significant: 3.11-1.

Public Services and Recreation: The following specific impacts were found to be less than significant: 3.12-1, 3.12-2, 3.12-3, 3.12-4, 3.12-5, and 3.12-6.

Traffic and Circulation: The following specific impacts were found to be less than significant: 3.13-3, 3.13-4, 3.13-5, and 3.13-6.

Utilities: The following specific impacts were found to be less than significant: 3.14-1, 3.14-2, and 3.14-3.

The Project was found to have a less than cumulatively considerable contribution to specific impacts within the following categories of environmental effects as set forth in more detail in the Draft EIR.

Cultural and Tribal Resources: The following specific impact was found to be less than cumulatively considerable: 4.1.

Greenhouse Gases and Climate Change: The following specific impact was found to be less than cumulatively considerable: 4.2.

The above impacts are less than significant or less than cumulatively considerable for one of the following reasons:

- The EIR determined that the impact is less than significant for the Project.
- The EIR determined that the Project would have a less than cumulatively considerable contribution to the cumulative impact.
- The EIR determined that the impact is beneficial (would be reduced) for the Project.
- The EIR determined that the cumulative impact was fully addressed in the General Plan EIR and that the Project would not result in new or expanded cumulative impacts.

VI. REVIEW OF PROJECT ALTERNATIVES

The State CEQA Guidelines Section 15126.6 mandates that every EIR evaluate a no-project alternative, plus a range of reasonable alternatives to a project or its location that would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project. Three alternatives to the Project were developed based on City of Rancho Cordova staff and City Council input and the technical analysis performed to identify the environmental effects of the Project. Alternatives provide a basis of comparison to the Project in terms of beneficial, significant, and unavoidable impacts. This comparative analysis is used to consider reasonable feasible options for minimizing environmental consequences of a project.

Typically, where a project causes significant impacts and an EIR is prepared, the findings must discuss not only how mitigation can address the potentially significant impacts but whether project alternatives can address potentially significant impacts. But where all significant impacts can be substantially lessened, in this case to a less-than-significant level, solely by adoption of mitigation measures, the lead agency, in drafting its findings, has no obligation to consider the feasibility that project alternatives might reduce an impact, even if the alternative would mitigate the impact to a greater degree than the Project, as mitigated (Public Resources Code Section 21002; Laurel Hills Homeowners Association v. City Council (1978 83 Cal.App.3d 515, 521. Kings County Farm Bureau v. City of Hanford (1990) 221 Cal.App.3d 730-733; Laurel Heights Improvement Association v. Regents of the University of California (1988) 47 Cal.3d 376, 400-403).

Because not all significant effects can be substantially reduced to a less-than-significant level either by adoption of mitigation measures or by standard conditions of approval, the following section considers the feasibility of the Project alternatives as compared to the Project.

As explained below, these findings describe and reject, for reasons documented in the FEIR and summarized below, each one of the Project alternatives, and the City finds that approval and implementation of The Ranch Project is appropriate. The evidence supporting these findings is presented in Section 5.0 of the Draft EIR.

A. IDENTIFICATION OF PROJECT OBJECTIVES

As described above and identified in CEQA Guidelines §15126.6(c), an EIR is required to identify a "range of potential alternatives to the proposed project [which] shall include those that could feasibly accomplish most of the basic purposes of the proposed project and could avoid or substantially lessen one of more of the significant effects." Chapter 2.0 and Chapter 5.0 of the Draft EIR identify the Project's goals and objectives. The Project's objectives include:

1. Create a high-quality development that implements the vision of the General Plan, which designates the Project site for development with a local town center, a mix of residential densities, and a natural resources preserve;
2. Respect the Project site's existing natural features through preservation of 199.5 acres of wetlands, vernal pools, and open space;
3. Provide a residential development that would assist the City in meeting its housing needs, including a range of housing types to serve the senior population;
4. Provide a residential development that would assist the City in meeting its affordability goals providing housing at many price points and attract residents from different areas;
5. Create a unique age-restricted community that provides a mix of housing types and amenities, including a club house and recreation facility;
6. Accommodate neighborhood-serving commercial uses as part of the town center;
7. Implement the City's Bicycle and Pedestrian Master Plans through providing an on-site bicycle and pedestrian network that is accessible by the general public and provides opportunities for connectivity with bicycle and pedestrian facilities on adjacent properties; and
8. Implement the City's Transit Master Plan through providing a Signature Transit Station and accommodating the Signature Transit Route along Rancho Cordova Parkway.

B. ALTERNATIVES ANALYSIS IN EIR

1. NO PROJECT ALTERNATIVE:

The No Project Alternative is discussed on pages 5.0-4, 5.0-5, and 5.0-7 through 5.0-12 of the Draft EIR. The No Project Alternative assumes that the Project site remains in its existing state and no additional development would occur in the short-term. However, it is anticipated that a new development Project would be submitted and that the Project site would be developed with uses consistent with the General Plan, as described for the SunCreek/Preserve Planning Area. The current condition of the site is largely undeveloped and has accommodated agricultural uses (cattle grazing) in the past.

The Rancho Cordova General Plan currently designates the Project site as the SunCreek/Preserve Planning Area. While the No Project Alternative may delay the development of the Project site, in the mid- to long-term, the Project site is anticipated to be developed as envisioned by the General Plan. The No Project Alternative would allow the Project site to be converted from agricultural to a development with a mix of residential densities, town center uses, and parks/recreation uses as envisioned by the General Plan. The assumed maximum buildout of the Project site as envisioned

in the General Plan EIR includes 2,624 residential units on 303.5 acres, as well as a village center with commercial uses, park areas, roads, and infrastructure, and wetland preserve. This maximum buildout for the Project site is identified in Table 4.0-1 of the General Plan Draft EIR in "The Preserve at Sunridge" row on page 4.0-6. The development scenario envisioned under the General Plan would be more intense than anticipated for the Project under the No Project Alternative. The preserve would be smaller than the area preserved by the Project and additional impacts to wetlands and other waters of the U.S. and state are anticipated under this alternative.

Findings: The No Project Alternative is rejected as an alternative because it would not achieve most of the eight identified objectives. Specifically, the No Project Alternative would not meet objective #2 and could be less effective than the Project in meeting objectives #3, #4, and #5. The No Project Alternative would not avoid any significant or potentially significant impacts in comparison to the Project and would result in worse environmental impacts than the Project in seven of the environmental topics addressed in the EIR.

Explanation: This alternative would not realize the benefits of the Project nor achieve most of the Project objectives.

This alternative would be consistent with the General Plan and would meet objective #1.

This alternative would not meet objective #2. The No Project Alternative would not provide a 199-acre preserve and would result in a smaller preserve area, representing a reduction of over 60 acres of wetlands and open space that would be preserved in perpetuity and a corresponding increase in developed area in comparison to the Project. There would be an increase in impacts to wetlands and other waters of the U.S. and state as the development footprint would be larger under the No Project Alternative than the Project. The No Project Alternative would result in greater environmental impacts than the Project, particularly in regard to aesthetics and visual resources, air quality, biological resources, greenhouse gases and climate change, noise and vibration, public services and recreation, and transportation.

The City of Rancho Cordova has identified the need for diverse housing options to serve local residents to help meet existing housing needs, including age-restricted and affordable units. Under the No Project Alternative, there would not be a requirement to construct age-restricted units or a requirement to develop multifamily units. The uncertainty regarding the variety of housing types, level of amenities, and number of age-restricted units could prevent the No Project Alternative from providing housing at a range of price points and needed senior housing opportunities. Therefore, the No Project Alternative may be less effective than the Project in meeting objectives #3, #4, and #5.

The No Project Alternative would provide a town center with neighborhood commercial uses and is anticipated to meet objective #6. The No Project Alternative is

anticipated to provide comparable pedestrian, bicycle, and transit features as the Project and would be comparable to the Project in meeting objectives #7 and #8.

This alternative would fail to fully meet most of the Project objectives identified by the City. For these reasons, the Project is deemed superior to the No Project Alternative.

2. REDUCED PROJECT ALTERNATIVE #1:

The Reduced Project Alternative #1 is discussed on pages 5.0-5 and 5.0-12 through 5.0-16 of the Draft EIR. Under this alternative, the Project site would be developed with the same amount of non-residential uses as the Project, but with a reduction in the amount of residential development (age-restricted and non-age-restricted). This alternative would result in:

- 59,000 sf of non-residential uses (32,000 sf of commercial and a 27,000-sf clubhouse),
- 637 single-family non-age-restricted units,
- 643 single-family active adult age-restricted units,
- 50 active adult multifamily units, and
- 268 multifamily non-age-restricted units (or the same amount as the Project).

Under the Reduced Project Alternative #1, 95 single family non-age-restricted units and 62 active adult single family units would be eliminated and there would be an additional 53 multifamily non-age-restricted units and 12 multifamily age-restricted units. This alternative would avoid impacts to an additional 0.025 acres of seasonal wetlands and 0.668 acres of vernal pools. This alternative would also include increased setbacks from Rancho Cordova Parkway aimed to reduce impacts related to aesthetics. The proposed amenities, bicycle and pedestrian improvements, and landscaping would be the same as the Project. The development footprint would be decreased compared to the Project.

Findings: The Reduced Project Alternative #1 is rejected as an alternative because, while it would result in reduced environmental impacts compared to the Project, it would not fully meet four of the eight project objectives.

Explanation: This alternative would meet some of the objectives of the Project, however, it would be less effective than the Project in meeting four of the objectives of the Project. In terms of implementing the vision of the General Plan, Reduced Project Alterative #1 would provide less development on the Project site and result in a less efficient development pattern than the Project and would achieve less progress toward meeting the City's housing needs than envisioned for the Project site by the General Plan. Therefore, this alternative would not fully meet objective #1.

The Reduced Project Alternative #1 would meet objective #2 because this alternative would be designed to reduce impacts to the existing natural features on the Project site and would exceed the amount of open space preserved in comparison to the Project.

Reduced Project Alternative #1 would meet objectives #3, #4, and #5 because the alternative would provide a range of housing types for various age groups, income groups, and would include an age-restricted component. However, because this alternative would reduce the amount of total housing by 92 units, these three objectives (#3, #4, and #5) would be met to a lesser extent than the Project.

This alternative would be comparable to the Project in terms of meeting objective #6, by also accommodating neighborhood serving uses. This alternative would be comparable to the Project for objectives #7 and #8 by providing bicycle, pedestrian, and transit features in a manner comparable to the Project.

The Reduced Project Alternative #1 would result in a slight reduction in impacts in eight resource areas, aesthetics, air quality, biological resources, noise and vibration, population and housing, public services and recreation, transportation and circulation, and utilities, as compared to the Project, but would result in similar impacts in six resource areas. This alternative would not avoid any of the significant and unavoidable impacts of the Project. Additionally, this alternative would not be as effective as the Project at meeting the Project objectives identified in the EIR. This alternative is also less economically feasible due to the reduced housing variety and quantity as this alternative would decrease the amount of housing, including age-restricted units. The reduction in units would also spread the cost of public improvements, including roads and infrastructure, and maintenance, including common areas and the open space, across fewer units, which would have the effect of increasing the cost of the units and reducing the affordability for future Project residents. Under the Reduced Project Alternative #1, 42 non-age-restricted units and 50 active adult units would be eliminated. On balance, the environmental benefits that might be achieved with this alternative are outweighed, independently and separately, by the reasons described above, and the failure of this alternative to provide the same level of benefits as the Project.

For these reasons, the Project is deemed superior to the Reduced Project Alternative #1.

3. REDUCED PROJECT ALTERNATIVE #2:

The Reduced Project Alternative #2 is discussed on pages 5.0-5, 5.0-6, and 5.0-16 through 5.0-20 of the Draft EIR. Under this alternative, the Project site would be developed with the same amount of non-residential uses as the Project, but with a reduction in the amount of residential development (non-age-restricted only). This alternative would result in:

- 59,000 sf of non-residential uses (32,000 sf of commercial and a 27,000-sf clubhouse),
- 477 single-family non-age-restricted units,
- 693 single-family age-restricted units,
- 50 multifamily age-restricted units, and
- 268 multifamily non-age-restricted units.

This alternative would result in a reduction in 255 single family non-age-restricted units and 12 age-restricted single-family units. An additional 53 non-age-restricted multifamily units and 12 age-restricted multifamily units would be developed. This alternative would also include increased setbacks, landscaped areas, and parks aimed to reduce impacts related to aesthetics. This alternative would avoid impacts to an additional 0.025 acres of seasonal wetlands and 0.668 acres of vernal pools. The proposed amenities, bicycle and pedestrian improvements, and landscaping would be the same as the Project. The development footprint would be decreased compared to the Project.

Findings: The Reduced Project Alternative #2 is rejected as an alternative because, while it would result in reduced environmental impacts compared to the Project, it would not fully meet four of the eight project objectives.

Explanation: This alternative would meet some of the objectives of the Project; however, it would be less effective than the Project in meeting four of the objectives of the Project. In terms of implementing the vision of the General Plan, Reduced Project Alterative #2 would provide less development on the Project site and result in a less efficient development pattern than the Project and would achieve less progress toward meeting the City's housing needs than envisioned for the Project site by the General Plan. Therefore, this alternative would not fully meet objective #1.

The Reduced Project Alternative #2 would meet objective #2 because this alternative would be designed to reduce impacts to the existing natural features on the Project site and would exceed the amount of open space preserved in comparison to the Project.

Reduced Project Alternative #2 would meet objectives #3, #4, and #5 because the alternative would provide a range of housing types for various age groups, income groups, and would include an age-restricted component. However, because this alternative would reduce the amount of total housing by 202 units, these three objectives (#3, #4, and #5) would be met to a lesser extent than the Project.

This alternative would be comparable to the Project in terms of meeting objective #6, by also accommodating neighborhood serving uses. This alternative would be comparable to the Project for objectives #7 and #8 by providing bicycle, pedestrian, and transit features in a manner comparable to the Project.

The Reduced Project Alternative #2 would result in a slight reduction in impacts in eight resource areas, aesthetics, air quality, biological resources, noise and vibration, population and housing, public services and recreation, transportation and circulation, and utilities, as compared to the Project, but would also result in similar impacts in six resource areas. This alternative would not avoid any of the significant and unavoidable impacts of the Project. Additionally, this alternative would not be as effective as the Project at meeting the Project objectives identified in the EIR. This alternative is also less economically feasible due to the reduced housing variety and quantity as this

alternative would decrease the amount of housing, including age-restricted units. The reduction in units would also spread the cost of public improvements, including roads and infrastructure, and maintenance, including common areas and the open space, across fewer units, which would have the effect of increasing the cost of the units and reducing the affordability for future Project residents. Under the Reduced Project Alternative #2, 202 non-age-restricted units would be eliminated. On balance, the environmental benefits that might be achieved with this alternative are outweighed, independently and separately, by the reasons described above, and the failure of this alternative to provide the same level of benefits as the Project.

For these reasons, the Project is deemed superior to the Reduced Project Alternative #2.

VII. STATEMENTS OF OVERRIDING CONSIDERATIONS RELATED TO THE RANCH PROJECT FINDINGS

As described in Section III of these Findings, the following significant and unavoidable impacts could occur with implementation of the Project:

- Project implementation would result in substantial adverse effects on scenic vistas and resources or substantial degradation of visual character (EIR Impact 3.1-1);
- Under Existing (2017) Plus Project conditions, the Project may conflict with an applicable program, plan, ordinance or policy addressing the circulation system – Roadway Segments and Intersections (EIR Impact 3.13-1); and
- Under Cumulative (2040) Plus Project conditions, the Project may conflict with an applicable program, plan, ordinance or policy addressing the circulation system – Roadway Segments and Intersections (EIR Impact 3.13-2).

The adverse effects identified above are substantive issues of concern to the City of Rancho Cordova. Policy LU.1.3 of the Rancho Cordova General Plan aims to maintain a strong jobs-housing ratio, with a diverse job base and corresponding housing stock, within the Planning Area and to improve the relationship and proximity of jobs to housing and commercial services. The Project is consistent with this Policy as the Project would include a neighborhood-serving shopping center with a corresponding housing stock to support the commercial services. The Project site is also located close to existing and future commercial and public services, which supports Policy AQ.2.2.

Policy NR.3.2 states, "In general, the City will encourage the preservation of existing location, topography, and meandering alignment of natural creeks. The modification, re-creation and realignment of creek corridors shall recreate the character of the natural creek corridor to the extent feasible, appropriate and consistent with other City policies. Channelization and the use of concrete within creek corridors shall be discouraged, but is not prohibited." The Project would preserve approximately 199.5 acres as a nature preserve that would be deeded to a third-party conservation entity. The Project includes approximately 14.8 acres of existing aquatic resources, including 1.85 acres of depressional seasonal wetlands, 9.97 acres of vernal pools, 1.15 acres of riverine seasonal wetlands, 1.53 acres of intermittent drainages, and 0.30 acres of drainage basin

outfalls. The Project applicant would incorporate protections for the preservation of wetland resources within the preserve, including preserve fencing, funding and management of the preserve in perpetuity, and protection of the preserve from drainage and runoff generated from development areas through the construction of several detention basins throughout the site.

Similarly, Policy NR.3.4 encourages projects that contain wetland preserves or creeks, or are located adjacent to wetland preserves or creeks, to be designed for maximum visibility and, as appropriate, access. As stated above, the Project would preserve approximately 199.5 acres as a nature preserve that would be deeded to a third-party conservation entity. The nature preserve has been designed to be accessed by all City users, including Project users, via a system of proposed trails.

Policy LU.2.2 promotes new development and redevelopment in accordance with the building blocks concepts of neighborhoods, villages, and districts. The Project includes three primary residential components: an unrestricted single-family community, an age-restricted community with both single family and multifamily components, and a non-age restricted multifamily parcel. These components are all located and arranged within neighborhoods or villages.

The City Council has balanced the benefits of the Project against its unavoidable environmental risks in determining whether to approve the Project, and has determined that the benefits of the Project outweigh the unavoidable adverse environmental effects. The reasons set forth below are based on the EIR and other information in the record. As set forth in the preceding sections, approving the Project will result in significant adverse environmental effects that cannot be reduced to a less-than-significant level, even with the adoption of all feasible mitigation measures. As determined above, however, there are no additional feasible mitigation measures, nor are there feasible alternatives, that would mitigate or substantially lessen the impacts to a less-than-significant level. Therefore, despite these significant environmental effects, the City Council, in accordance with Public Resources Code Sections 21001, 21002.1(c), 21081(b) and CEQA Guidelines Section 15093, chooses to approve the Project because, in its judgment, the following economic, social, and other benefits that the Project will produce will render the significant effects acceptable.

Substantial evidence supporting the benefits cited in this Statement of Overriding Considerations can be found in the preceding findings, which are incorporated by reference into this section, and in the documents found in the record of proceedings, as defined in section II, above. Any one of the following reasons is sufficient to demonstrate that the benefits of the Project outweigh its unavoidable adverse environmental effects, thereby justifying approval of the Project.

1. Development of Age-Restricted Housing. The Project would provide age-restricted and non-age-restricted housing options and contribute toward an adequate supply of rental housing and ownership housing in the City of Rancho Cordova to help meet existing and projected housing needs, including senior housing. Rancho Cordova General Plan Policy H.3.2 aims Provide a range of senior housing opportunities, including senior developments with single-story homes, independent living, assisted living, skilled nursing, and shared housing, and pursue opportunities and funding to

convert existing apartment complexes to senior housing facilities. The Project would be consistent with this policy.

2. Preservation of Open Space. The Project would preserve approximately 199.5 acres as a nature preserve that would be deeded to a third-party conservation entity. The Project includes approximately 14.8 acres of existing aquatic resources, including 1.85 acres of depressional seasonal wetlands, 9.97 acres of vernal pools, 1.15 acres of riverine seasonal wetlands, 1.53 acres of intermittent drainages, and 0.30 acres of drainage basin outfalls. The Project applicant would incorporate protections for the preservation of wetland resources within the preserve, including preserve fencing, funding and management of the preserve in perpetuity, and protection of the preserve from drainage and runoff generated from development areas through the construction of several detention basins throughout the site.

3. Quality Design and the Integration of On-Site Amenities. The Project would comply with all existing energy standards. The Project would participate in a community solar program, using renewable energy as the energy source for at least 95% of the Project, including all residential development. Additionally, 300 units are proposed as electric-only units with no natural gas. The Project has been designed to provide for ease of pedestrian and bicycle circulation and also provides a transit stop, encouraging non-vehicle modes of transportation. In addition to quality design, the Project includes several on-site amenities, including a clubhouse, recreation facility, park and open space areas, and a nature preserve. Land uses and amenities on the Project site would be interconnected via a trail system.

4. Consistency with the Rancho Cordova General Plan. The Project site is currently designated Planning Area by the General Plan Land Use Map and is identified as part of the Suncreek/Preserve Planning Area by the City's General Plan. The Project site was envisioned for urban development as part of the General Plan. Implementation of the General Plan was anticipated to result in potential environmental impacts, as discussed in the General Plan Environmental Impact Report.

   The Project would require a City of Rancho Cordova General Plan Amendment to the Land Use Element to change land uses on the Project site from the Planning Area designation to reflect the specific uses associated with the Project. Figure LU-28 in the General Plan depicts planned land uses for the Project site, including a local town center, a range of residential densities, park and open space, and a nature preserve. Changes to the Land Use Element would include changing the entire project site from Planning Area to Low Density Residential (LDR), Medium Density Residential (MDR), High Density Residential (HDR), Commercial (C), Parks and Open Space (P/OS), Natural Resources (NR), and Right-of-Way, as conceptually envisioned by Figure LU-28. The proposed general plan amendment will ensure the Project's consistency with the City's General Plan requirements.

The Project is consistent with applicable General Plan goals, policies, and actions, including the following:

Policy LU.1.3: Maintain a strong jobs-housing ratio, with a diverse job base and corresponding housing stock, within the Planning Area. Improve the relationship and proximity of jobs to housing and commercial services.

Policy LU.1.4: Promote high quality, efficient, and cohesive land utilization that minimizes negative impacts (e.g., traffic congestion and visual blight) and environmental hazards (e.g. flood, soil instability) on adjacent neighborhoods and infrastructure and preserve existing and future residential neighborhoods from encroachment of incompatible activities and land uses.

Policy LU.2.2: Promote new development and redevelopment in accordance with the building blocks concepts of neighborhoods, villages, and districts.

Policy LU.2.5: Phase growth based on infrastructure capacity, infrastructure financing, and the timing of the design, approval/permitting, and construction of transportation facilities and other infrastructure.

Policy LU.2.6: Discourage the over concentration of retail shopping facilities in a single location in order to ensure neighborhood services are distributed and integrated into the City's neighborhoods and that market demand is met without diminish[ing] the viability of nearby commercial properties with the same customer base.

Policy UD.4.2: Design new development to be compatible with surrounding development in ways that contribute to the desired character of the City and District.

Policy NR.3.2: Create or retain the natural topographic relief and meandering alignment of natural creek corridors in the construction of new channels and the modification of existing channels, and discourage the placement of concrete within creeks and channels.

Policy NR.3.3: Encourage the creation of secondary flood control channels where the existing channel supports extensive riparian vegetation.

Policy NR.3.4: Encourage projects that contain wetland preserves or creeks, or are located adjacent to wetland preserves or creeks, to be designed for maximum visibility and, as appropriate, access.

Policy AQ.2.2: Encourage mixed-use developments that put residences in close proximity to services, employment, transit, schools, and civic facilities/services.

Policy H.1.4: Promote higher density housing in close proximity to transit, employment, and appropriate services, such as transit-oriented development.

Policy H.1.5: Developers of new residential projects within the newly developing areas of the City (generally in the large, vacant areas south of Highway 50) shall prepare an Affordable Housing Plan (Plan) for the project for City review and approval that identifies the project's plan for providing affordable housing.

Policy H.3.1: Ensure that neighborhoods are developed in a balanced, sustainable manner, avoiding over-concentration of affordable housing or oversized rental complexes and providing a range of housing prices and rents.

Policy H.3.2: Provide a range of senior housing opportunities, including senior developments with single-story homes, independent living, assisted living, skilled nursing, and shared housing, and pursue opportunities and funding to convert existing apartment complexes to senior housing facilities.

Policy H.4.1: Require energy efficiency in the design and construction of housing developments through implementation of the State Energy Conservation Standards (Title 24). The long-term economic and environmental benefits of energy efficiency shall be weighed against any increased initial costs of energy saving measures. Encourage sustainable development by reducing energy use.

See Draft EIR Appendix G, The Ranch Project Consistency with Rancho Cordova General Plan Policies, for a detailed discussion of Project consistency with General Plan.

5. Progress toward the City's Regional Housing Needs Allocation (RHNA). The City has been allocated 7,008 housing units for the current Housing Element cycle. The City's most recent Housing Element annual report (2018) indicates that the City has permitted 2,079 housing units and has a remaining need of 4,929 housing units, including 1,322 above moderate income units, 1,089 moderate income units, 1,079 low income units, and 1,439 very low income units. It is anticipated that the single family units associated with the Project will assist the City in meeting its above moderate and moderate income allocations and the multifamily units will assist in meeting the moderate and low income allocations. The 1,690 units associated with the Project will assist the City in meeting its current RHNA as well as providing progress toward future RHNA requirements during the Project's phased development.

VIII. CONCLUSION

After balancing the specific economic, legal, social, technological, and other benefits of the proposed Project, the Council finds that the unavoidable adverse environmental impacts identified may be considered "acceptable" due to the specific considerations listed above which outweigh the unavoidable, adverse environmental impacts of the proposed Project.

The Rancho Cordova City Council has considered information contained in the EIR prepared for The Ranch Project as well as the public testimony and record of proceedings in which the Project was considered. Recognizing that significant unavoidable aesthetic and transportation and circulation impacts may result from implementation of the Project, the Council finds that the benefits of the Project outweigh the adverse effects of the Project. Having included all feasible mitigation measures in the Mitigation Monitoring and Reporting Program, and recognized all unavoidable significant impacts, the Council hereby finds that each of the separate benefits of The Ranch Project, as stated herein, is determined to be unto itself an overriding consideration, independent of other benefits, that warrants adoption of the Project and outweighs and overrides its unavoidable significant effects, and thereby justifies the adoption of The Ranch Project.

Based on the foregoing findings and the information contained in the record, the Council hereby determines that:

1. All significant effects on the environment due to implementation of the proposed Ranch Project have been eliminated or substantially lessened where feasible;
2. There are no feasible alternatives to the proposed Ranch Project which would mitigate or substantially lessen the impacts; and
3. Any remaining significant effects on the environment found to be unavoidable are acceptable due to the factors described in the Statement of Overriding Considerations above.

This page left intentionally blank.

TABLE 4.0-1: MITIGATION MONITORING AND REPORTING PROGRAM

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
BIOLOGICAL RESOURCES				
Impact 3.3-1: The Project has the potential to, directly or indirectly, have a substantial adverse effect through habitat modifications or reductions, cause populations to drop below self-sustaining levels, substantially eliminate a community, or substantially reduce the number of, or restrict the range of, an endangered, rare or threatened species, including those considered candidate, sensitive, or special-status, in local or regional plans, policies, regulations, or by the CDFW or USFWS - Invertebrates	***Mitigation Measure 3.3-1:*** *Prior to any ground disturbing activities, the Project proponent shall submit a South Sacramento Habitat Conservation Plan (SSHCP) permit application package to the City of Rancho Cordova ("Land Use Authority Permittee") as a request that the incidental take coverage provided by City's SSHCP Incidental Take Permit (ITP) be extended to the proposed activities. The City of Rancho Cordova shall review the SSHCP permit application for consistency with all of the SSHCP requirements and provide the South Sacramento Conservation Agency ("Implementing Entity) with a copy of the SSHCP requirements for tracking purposes. The Project proponent shall be responsible for paying all SSHCP development fees associated with obtaining coverage from the City of Rancho Cordova. Any proposal to provide land in fee title or provide a conservation easement in lieu of paying all or part of the required SSHCP development fees, shall include a consistency analysis in the application that sufficiently shows that the proposal is consistency with the SSHCP Conservation Strategy.* ***Mitigation Measure 3.3-2:*** *The Project proponent shall implement the following SSHCP Avoidance and Minimization Measures (AMMs) to the satisfaction of the City to avoid direct and indirect effects of Covered Activities on Covered Species:* • *AMM SPECIES-1 (Litter Removal Program): A litter control program shall be instituted for the entire Project site. All workers shall ensure that their food scraps, paper wrappers, food containers, cans, bottles, and other trash are deposited in covered or closed trash containers. All garbage shall be removed from the Project site at the end of each work day, and construction personnel shall not feed or otherwise attract wildlife to the area where construction activities are taking place.* • *AMM SPECIES-2 (No Pets in Construction Areas): To avoid harm and harassment of native species, workers and visitors shall not bring pets onto a Project site.* • *AMM SPECIES-3 (Take Report): If accidental injury or death of any Covered Species occurs, workers shall immediately inform the*	City of Rancho Cordova Planning Department City of Rancho Cordova Planning Department	Prior to any ground disturbing activities During construction and operation of the Project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	approved biologist or on-site monitor and site supervisor. The approved biologist or on-site monitor shall phone the appropriate contact person at the Implementing Entity (i.e., the South Sacramento Conservation Agency). The Implementing Entity shall immediately contact the Wildlife Agencies (i.e., the USFWS and CDFW) by telephone. A memorandum shall be provided to the Implementing Entity and Wildlife Agencies within 1 working day of the incident. The report shall provide the date and location of the incident, number of individuals taken, the circumstances resulting in the take, and any corrective measures taken to prevent additional take. • *AMM SPECIES-4 (Post-Construction Compliance Report): A post-construction compliance report shall be submitted to the SSHCP Implementing Entity within 30 calendar days of completion of construction activities or within 30 calendar days of any break in construction activity that lasts more than 30 days. The report shall detail the construction start and completion dates, any information about meeting or failing to meet species take AMMs, effectiveness of each AMM that was applied at the Project site, and any known Project effects to Covered Species.* • *AMM LID-1 (Stormwater Quality): When the size of a Covered Activity Project exceeds the thresholds established by the State Water Resources Control Board (SWRCB) (see the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions, or future SWRCB-approved design manuals applicable to the Plan Area), incorporate stormwater management into site design to satisfy the requirements outlined in the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions. Stormwater management may include groundwater recharge (LID-2) and natural site features (LID-3).* • *AMM LID-3 (Natural Site Features): Incorporate preservation of a site's natural aquatic features (such as creeks and streams) into Project design to retain natural hydrologic patterns and to retain habitat that might be used by Covered Species.* • *AMM EDGE-1 (Compatible Land Uses): To the maximum extent practicable, development Project Covered Activities will locate*			

ENVIRONMENTAL IMPACT	MITIGATION MEASURE	MONITORING RESPONSIBILITY	TIMING	VERIFICATION (DATE/INITIALS)
	compatible land uses (e.g., designated open space such as parks and ball fields, detention basins, and other land uses with less-intensive human activity) in areas immediately adjacent to existing or planned Preserve boundaries. The compatible land use will provide additional buffering of Preserves from potential indirect effects of adjacent urban development. The soil surfaces in a compatible land use area may be re-contoured provided that the soil restrictive layer remains undamaged and most of the soil profile above the restrictive layer remains intact. The Land Use Authority will determine when it is not practicable to locate a compatible land use adjacent to existing or planned Preserve boundaries. • *AMM EDGE-2 (Single-Loaded Streets): To the maximum extent practicable, the design of Urban Development Covered Activities will locate single-loaded streets adjacent to existing or planned Preserve. The Land Use Authority will determine when single-loaded streets are not practicable.* • *AMM EDGE-3 (Preserve Setbacks): Urban Development Covered Activities constructed adjacent to existing or planned Preserves must establish a minimum 50-foot-wide setback outward from the boundary of any existing Preserve or planned SSHCP Preserve. This minimum 50-foot-wide setback will function as a transition between Urban Development and the Preserve, and must be managed to maintain the natural community of vegetation present in the adjacent Preserve. As much of the setback as possible should remain in the same natural habitat as the Preserve.* *However, as discussed in Section 5.2.5, Covered Activities in Preserve Setbacks in the UDA, where an existing or planned Preserve is adjacent to an existing roadway (e.g., collectors, arterials, thoroughfares), the 50-foot Preserve Setback will not be required, and any bicycle or pedestrian trail will be established in the road right-of-way. In addition, where a planned roadway crosses an existing or planned Preserve, no Preserve Setback will be required, and any bicycle or pedestrian trail will be established in the road right-of-way.* • *AMM EDGE-4 (Locate Stormwater Control Outside Preserves): Roads, sidewalks, and other impermeable surfaces of Urban*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	Development Covered Activities adjacent to existing or planned Preserves will slope away from Preserves and Preserve Setbacks or intercept drainage with swales or curbs and gutters to preclude drainage from entering Preserves and Preserve Setbacks. Stormwater flows must be directed away from Preserves and Preserve Setbacks and directed into stormwater control facilities inside the development (outside Preserves and Preserve Setbacks) (see EDGE-6 for exception to EDGE-4 in certain SSHCP Linkage Preserves). • *AMM EDGE-5 (Stormwater Control in Preserve Setbacks): If trails are established in any Preserve Setback in compliance with EDGE-3, the trail must be sloped away from the Preserve, and rainwater leaving the trail surface must flow into an adjacent low-velocity bio-retention swale or cell to keep rainwater runoff and trail contaminants from entering the Preserve. Low-velocity bio-retention swales or cells are typically small linear features placed on one or both sides of a trail. As required by EDGE-3, trails and their adjacent bio-retention swales or cells must be located on the side of the Preserve Setback nearest development.* • *AMM EDGE-7 (Hardpan/Duripan Protection): To protect the soil perched aquifer and the micro-watersheds supporting existing vernal pool hydrology, activities that have the potential to cut into, disrupt, or remove the soil's restrictive layer (hardpan or duripan) will not occur within Preserves or Preserve Setbacks. However, in certain circumstances, the Covered Activities defined in Section 5.2.6, Covered Activities in Stream Setbacks in the UDA, and Section 5.2.8, Covered Activities in the Laguna Creek Wildlife Corridor of the Preserve System, may result in punctures or other minor disruptions of the soil hardpan or duripan if approved by the Implementing Entity and the Technical Advisory Committee according to the process described in Chapter 9 of the SSHCP. If a Covered Activity on a Preserve or Preserve Setback results in a puncture or other disruption to the soil hardpan or duripan, the puncture will be sealed using bentonite clay or other material that maintains the functionality of the soil's restrictive layer and associated perched aquifer.*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	• *AMM EDGE-10 (Prevent Invasive Species Spread): Completed Covered Activities (including roads) will be maintained in a manner that avoids the spread of invasive species into Preserve and Open Space areas. Such maintenance measures will include the following:* o *To prevent the transport of non-native invasive species onto Preserves, before bringing any equipment onto an SSHCP Preserve or Preserve Setback, equipment must be cleaned of mud, dirt, and plant material. Cleaning will occur in the infested area or another appropriate location as approved by a Plan Permittee.* o *Mowing rotation will start in un-infested areas and move to infested areas.* o *Invasive plant prevention techniques will be incorporated into maintenance plans.* o *The SSHCP Implementing Entity will survey road shoulders, ditches, and rights-of-way that border SSHCP Preserves for invasive weeds or other exotic plant species. Where roadside weed infestations have reached a critical control point, the Implementing Entity or Land Use Authority Permittee will apply the appropriate manual, mechanical, or chemical treatment.* • *AMM BMP-9 (Soil Compaction): After construction is complete, all temporarily disturbed areas will be restored similar to pre-Project conditions, including impacts relating to soil compaction, water infiltration capacity, and soil hydrologic characteristics.* • *AMM NATURE TRAIL-1 (Nature Trail Plan): A nature trail plan must be prepared for each Preserve where a trail is allowed by the Preserve Management Plan. Nature trails will be unpaved trails that vary in width depending on terrain and existing constraints, but will never exceed 4 feet in width. Where a trail crosses a swale, wooden walkways elevated to a height no greater than 2 feet will be installed. Trail improvements may include mowing vegetation to create or maintain a trail, minor grading to remove trip hazards, and signs providing directional and educational information. Public access to land acquired for preservation will be prohibited until a trail plan can be prepared by the Implementing Entity and*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	approved by the Permitting Agencies. A trail plan will include the following: o *Maps identifying areas that contain sensitive habitats or species occurrences.* o *Maps that show the location and footprint of proposed trails.* o *Methods used to control public access.* o *Trail and use monitoring methods, schedules, and responsibilities.* o *Trail operation and maintenance guidelines and responsibilities.* o *Clear triggers for use restrictions or closure based on sensitive biological indicators (e.g., seasonal closures of some trails on the basis of activity periods of Covered Species or sensitive species).* • *AMM NATURE TRAIL-2 (Nature Trail Protection of Duripan): Nature trails will be sited and constructed so as not to interfere with existing soil duripan and the perched aquifer that support the existing hydrologic regime of the Vernal Pool–Grassland, and will not interfere with existing pool hydrology. Trails within Preserves will not be paved.* • *AMM NATURE TRAIL-3 (Nature Trail Location): Nature trails will be located away from sensitive natural resources (e.g., vernal pools, riparian habitat, woodland habitat, Covered Species occurrences, raptor nesting sites, tricolored blackbird (Agelaius tricolor) colony sites). The Wildlife Agencies will determine the distance necessary to avoid impacts to sensitive natural resources.* • *AMM NATURE TRAIL-4 (Biological Studies Prior to Nature Trail Design): Biological studies will be conducted within the area being considered for nature trail construction prior to Project design. The studies will include land cover type mapping and focused species surveys and/or wetland delineations. The biological studies will include assessments of potential effects of trail construction on Preserve System resources, and recommendations for avoidance and minimization that may be incorporated into Project siting, design, construction, and operation.*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	• *AMM NATURE TRAIL-5 (Monitoring of Nature Trail Impacts): Impacts that could result from use of a nature trail within a Preserve will be monitored according to the Preserve Management Plan (Chapter 8) to ensure that uses do not conflict with the individual Preserve Management Plan. If use of a trail is found to conflict with the individual Preserve Management Plan, use of that trail will be discontinued until adjustments in the use can be made to reduce or eliminate conflicts. The Implementing Entity will make decisions about discontinuing or modifying use of a trail in consultation with the Preserve Manager or other applicable Preserve management agency or organization.* • *AMM ROAD-1 (Road Project Location): Road projects will be located in the least environmentally sensitive area to avoid, to the maximum extent practicable, impacts on Covered Species, Covered Species habitat, and waters of the United States. Road project alignments will follow existing roads, road easements, and rights-of-way, or be sited in disturbed areas to minimize habitat loss and additional habitat fragmentation.* • *AMM ROAD-3 (Roadside Pesticide Use): If pesticide use is necessary along roadsides, the appropriate SSHCP Permittee will ensure that the pesticide application strictly complies with the pesticide label and all other applicable federal, state, and local authorities pertaining to the use, safety, storage, disposal, and reporting of the pesticide. Where roadside weed infestations have reached a critical control point, the Implementing Entity or a Land Use Authority Permittee will apply the appropriate manual, mechanical, or chemical treatment. In addition, the Implementing Entity or appropriate Land Use Authority Permittee will post signs along road shoulders adjacent to sensitive areas that are within the SSHCP Preserve System (e.g., California tiger salamander breeding ponds, endemic plant populations, vertebrates that rely on insects for part of their diet). The signs will identify pesticide use restrictions or other roadside maintenance restrictions.* • *AMM RE-ESTABLISHMENT/ESTABLISHMENT-1 (Vernal Pool): Re-establish or establish Vernal Pool Wetland according to the following guidelines:*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	○ *Re-establishment will always take priority over establishment of vernal pools. Establishment will be permitted only after it has been determined that sites with the potential to re-establish vernal pools no longer exist in the Plan Area or cannot be acquired through a willing seller/buyer agreement.* ○ *When possible, re-established or established sites will be located adjacent to an existing Preserve(s) to maximize connectivity and Preserve area.* ○ *Re-establishment or establishment will not result in direct or indirect adverse impacts to the hydrologic regime of existing vernal pools. Vernal pool re-establishment or establishment actions will not remove more than 10% of any existing vernal pool watershed, as defined by the SSHCP LIDAR analysis (see Section 3.3 and Conservation Action VPI1.2 in Table 7.1).* ○ *Vernal pool re-establishment will attempt to restore the historical density and range of vernal pool sizes to the maximum extent feasible using historical aerial photography of the site, if available. Where aerial photography of the site's historical conditions is not available, vernal pool re-establishment will include a range of pool sizes (area and depth) to accommodate the different habitat needs and life history characteristics of the vernal pool invertebrate Covered Species.* ○ *Established vernal pools must be located on sites with vernal pool soils, defined as any Plan Area soil type where vernal pools currently exist.* ○ *Established vernal pool sites will include a range of pool sizes to accommodate the different habitat needs and life history characteristics of the three vernal pool invertebrate Covered Species.* ○ *The total density of vernal pools will not exceed 10% of the suitable soil areas in any vernal pool re-establishment and/or establishment site, unless it can be shown that the suitable areas of that site historically supported greater*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	densities. o *Re-establishment or establishment may include inoculation when it is likely that no seed or cyst bank of vernal pool species remains at a site. Vernal Pool inocula will come from nearby vernal pools that are on the same geologic formation and soil type.* • *AMM UTILITY-2 (Utility Maintenance on Preserves): Utility maintenance inside SSHCP Preserves and SSHCP Preserve Setbacks containing vernal pools will occur only when vernal pools have been dry for 30 days, except in emergency situations related to human health and safety.* • *AMM UTILITY-3 (Trenchless Construction Methods): Where a pipeline or conduit crosses an existing or planned Preserve or will be located between adjacent Preserves (e.g., under a roadway that has a Preserve on both sides), trenchless construction methods will be used to minimize impacts to the existing soil profile (including impacts to a hardpan or duripan) to maintain the perched aquifer in Vernal Pool Grassland land cover type.* • *AMM UTILITY-4 (Siting of Entry and Exit Location): The entry and exit locations for the trenchless construction method (see Utility-3) will be sited to avoid impacts to vernal pools and Riparian Woodland, and to avoid direct take of SSHCP Covered Species.*			
Impact 3.3-2: The Project has the potential to, directly or indirectly, have a substantial adverse effect through habitat modifications or reductions, cause populations to drop below self-sustaining levels, substantially eliminate a community, or substantially reduce the number of, or restrict the range of, an endangered, rare or threatened species, including those considered candidate,	***Mitigation Measure 3.3-3:*** *The Project proponent shall implement the following SSHCP AMMs to the satisfaction of the City to avoid direct and indirect effects of Covered Activities on western spadefoot (Spea hammondii):* • *AMM WS-1 (Western Spadefoot Work Window): Ground-disturbing Covered Activities shall occur outside the breeding and dispersal season (after May 15 and before October 15), to the maximum extent practicable.* • *AMM WS-2 (Western Spadefoot Exclusion Fencing): If Covered Activities must be implemented after October 15 and before May 15, exclusion fencing shall be installed around the Project footprint before October 15, and the Project site must be monitored by an approved biologist following rain events. Temporary high visibility construction fencing shall be installed along the edge of work areas,*	City of Rancho Cordova Planning Department	During construction of the Project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
sensitive, or special-status, in local or regional plans, policies, regulations, or by the CDFW or USFWS - Reptile and Amphibian	*and silt fencing shall be installed immediately behind the temporary high-visibility construction fencing to exclude western spadefoot from entering the construction area. Fencing shall remain in place until all construction activities within the construction area are completed. No Project activities shall occur outside the delineated Project footprint. If a western spadefoot is encountered. If a western spadefoot is encountered, refer to WS-6, below.* • *AMM WS-3 (Western Spadefoot Monitoring): If Covered Activities must be implemented in the breeding and dispersal season (after October 15 and before May 15), an approved biologist experienced with western spadefoot identification and behavior shall monitor the Project site, including the integrity of any exclusion fencing. The approved biologist shall be on site daily while construction related activities are taking place, and shall inspect the Project site daily for western spadefoot prior to construction activities. The approved biologist shall also train construction personnel on the required avoidance procedures, exclusion fencing, and protocols in the event that a western spadefoot enters an active construction zone (i.e., outside the buffer zone). If a western spadefoot is encountered, refer to WS-6, below.* • *AMM WS-4 (Avoid Western Spadefoot Entrapment): If a Covered Activity occurs in western spadefoot modeled habitat (Figure 3-17), all excavated steep-walled holes and trenches more than 6 inches deep shall be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes and trenches shall be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within western spadefoot modeled habitat shall be inspected for western spadefoot by the approved biologist prior to being moved. If a western spadefoot is encountered, refer to WS-6, below.* • *AMM WS-5 (Erosion Control Materials in Western Spadefoot*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	Habitat): If erosion control is implemented within western spadefoot modeled habitat, non-entangling erosion control material shall be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material shall be used to ensure that western spadefoots are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials. • *AMM WS-6 (Western Spadefoot Encounter Protocol): If Covered Activities must be implemented during the breeding and dispersal season (after October 15 and before May 15), and a western spadefoot is encountered during construction activities, the approved biologist shall notify the Wildlife Agencies immediately. Construction activities shall be suspended in a 100-foot radius of the animal until the animal leaves the Project site on its own volition. If necessary, the approved biologist shall notify the Wildlife Agencies (i.e., the USFWS and CDFW) to determine the appropriate procedures related to relocation. If the animal is handled, a report shall be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the western spadefoot within 1 business day to the Wildlife Agencies. The biologist shall report any take of listed species to the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife immediately. Any worker who inadvertently injures or kills a western spadefoot or who finds dead, injured, or entrapped western spadefoot(s) must immediately report the incident to the approved biologist.*			
Impact 3.3-4: The Project has the potential to, directly or indirectly, have a substantial adverse effect through habitat modifications or reductions, cause populations to drop below self-sustaining levels, substantially eliminate a	***Mitigation Measure 3.3-4:*** *The Project proponent shall implement the following SSHCP AMMs to the satisfaction of the City to avoid direct and indirect effects of Covered Activities on tricolored blackbird:* • *AMM TCB-1 (Tricolored Blackbird Surveys): If modeled habitat for tricolored blackbird is present within a Covered Activity's Project footprint or within 500 feet of a Project footprint, then an approved biologist shall conduct a field investigation to determine if existing or potential nesting or foraging sites are present within the Project*	City of Rancho Cordova Planning Department	Prior to and during construction of the Project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
community, or substantially reduce the number of, or restrict the range of, an endangered, rare or threatened species, including those considered candidate, sensitive, or special-status, in local or regional plans, policies, regulations, or by the CDFW or USFWS - Birds	*footprint and adjacent areas within 500 feet of the Project footprint. Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. Within the Plan Area, potential tricolor blackbird nest sites are often associated with freshwater marsh and seasonal wetlands, or in thickets of willow, blackberry, wild rose, thistle, and other thorny vegetation. Tricolored blackbirds are also known to nest in crops associated with dairy farms. Foraging habitat is associated with annual grasslands, wet and dry vernal pools and other seasonal wetlands, agricultural fields (such as large tracts of alfalfa and pastures with continuous haying schedules and recently tilled fields), cattle feedlots, and dairies. The Third-Party Project Proponent shall map all existing or potential nesting or foraging sites and provide these maps to the Local Land Use Permittees (i.e., City of Rancho Cordova) and Implementing Entity (i.e., the South Sacramento Conservation Agency). Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 of the SSHCP for the process to conduct and submit survey information.* • *AMM TCB-2 (Tricolored Blackbird Pre-Construction Surveys): Pre-construction surveys shall be required to determine if active nests are present within a Project footprint or within 500 feet of a Project footprint if existing or potential nest sites were found during design surveys and construction activities shall occur during the breeding season (March 1 through September 15). An approved biologist shall conduct pre-construction surveys within 30 days and within 3 days of ground-disturbing activities, and within the proposed Project footprint and 500 feet of the proposed Project footprint to determine the presence of nesting tricolored blackbird. Pre-construction surveys shall be conducted during the breeding season (March 1 through August 31). Surveys conducted in February (to meet pre-construction survey requirements for work starting in March) must be conducted within 14 days and 3 days in advance of ground-disturbing activities. If a nest is present, then TCB-3 and TCB-4 shall be implemented. The approved biologist shall inform the Land Use Authority Permittee and the Implementing Entity of*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	species locations, and they in turn shall notify the Wildlife Agencies (i.e., the USFWS and CDFW). • *AMM TCB-3 (Tricolored Blackbird Nest Buffer): If active nests are found within the Project footprint or within 500 feet of any Project-related Covered Activity, the Third-Party Project Proponent shall establish a 500-foot temporary buffer around the active nest until the young have fledged.* • *AMM TCB-4 (Tricolored Blackbird Nest Buffer Monitoring): If nesting tricolored blackbirds are present within the Project footprint or within 500 feet of any Project-related Covered Activity, then an approved biologist experienced with tricolored blackbird behavior shall be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist shall be on site daily while construction-related activities are taking place near the disturbance buffer. Work within the nest disturbance buffer shall not be permitted. If the approved biologist determines that tricolored blackbirds are exhibiting agitated behavior, construction shall cease until the buffer size is increased to a distance necessary to result in no harm or harassment to the nesting tricolored blackbirds. If the biologist determines that the colonies are at risk, a meeting with the Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies shall be held to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist shall also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a tricolored blackbird flies into an active construction zone (i.e., outside the buffer zone).* • *AMM TCB-5 (Timing of Pesticide Use and Harvest Timing on Agricultural Preserves): On SSHCP Agricultural Preserves, pesticides (including herbicides) shall not be applied from January 1 through July 15.* ***Mitigation Measure 3.3-5:*** *The Project proponent shall implement the following SSHCP AMMs to the satisfaction of the City to avoid direct and indirect effects of Covered Activities on Swainson's hawk:*	City of Rancho Cordova Planning	Prior to and during construction of	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	• *AMM SWHA-1 (Swainson's Hawk Surveys): If modeled habitat for Swainson's hawk (Figure 3-25) is present within a Covered Activity's Project footprint or within 0.25 mile of a Project footprint, then an approved biologist shall conduct a survey to determine if existing or potential nesting sites are present within the Project footprint and adjacent areas within 0.25 mile of the Project footprint. Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. Nest sites are often associated with Riparian land cover, but also include lone trees in fields, trees along roadways, and trees around structures. Nest trees may include, but are not limited to, Fremont's cottonwood (Populus fremontii), oaks (Quercus spp.), willows (Salix spp.), walnuts (Juglans spp.), eucalyptus (Eucalyptus spp.), pines (Pinus spp.), and Deodar cedar (Cedrus deodara). The Third-Party Project Proponent shall map all existing and potential nesting sites and provide these maps to the Local Land Use Permittees (i.e., City of Rancho Cordova) and Implementing Entity (i.e., the South Sacramento Conservation Agency). Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 for the process to conduct and submit survey information.* • *AMM SWHA-2 (Swainson's Hawk Pre-Construction Surveys): Pre-construction surveys shall be required to determine if active nests are present within a Project footprint or within 0.25 mile of a Project footprint if existing or potential nest sites were found during initial surveys and construction activities shall occur during the breeding season (March 1 through September 15). An approved biologist shall conduct pre-construction surveys within 30 days and 3 days of ground-disturbing activities to determine presence of nesting Swainson's hawk. Pre-construction surveys shall be conducted during the breeding season (March 1 through September 15). If a nest is present, then SWHA-3 and SWHA-4 shall be implemented. The approved biologist shall inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn shall notify the Wildlife Agencies (i.e., the USFWS and CDFW).*	Department	the Project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	• *AMM SWHA-3 (Swainson's Hawk Nest Buffer): If active nests are found within the Project footprint or within 0.25 mile of any Project-related Covered Activity, the Third-Party Project Proponent shall establish a 0.25 mile disturbance buffer around the active nest until the young have fledged, with concurrence from the Wildlife Agencies.* • *AMM SWHA-4 (Swainson's Hawk Nest Buffer Monitoring): If nesting Swainson's hawks are present within the Project footprint or within 0.25 mile of any Project-related Covered Activity, then an approved biologist experienced with Swainson's hawk behavior shall be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist shall be on site daily while construction-related activities are taking place within the buffer. Work within the temporary nest disturbance buffer can occur with the written permission of the Implementing Entity and Wildlife Agencies. If nesting Swainson's hawks begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the approved biologist shall have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies shall meet to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist shall also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a Swainson's hawk flies into an active construction zone (i.e., outside the buffer zone).* ***Mitigation Measure 3.3-6:*** *The Project proponent shall implement the following SSHCP AMMs to avoid direct and indirect effects of Covered Activities on western burrowing owl:* • *AMM WBO-1 (Western Burrowing Owl Surveys): Surveys within modeled habitat are required for both the breeding and non-breeding season. If the Project site falls within modeled habitat, an approved biologist shall survey the Project site and map all*	City of Rancho Cordova Planning Department	Prior to and during construction of the Project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	burrows, noting any burrows that may be occupied. Occupied burrows are often (but not always) indicated by tracks, feathers, egg shell fragments, pellets, prey remains, and/or excrement. Surveying and mapping shall be conducted by the approved biologist while walking transects throughout the entire Project site plus all accessible areas within a 250-foot radius from the Project site. The centerline of these transects shall be no more than 50 feet apart and shall vary in width to account for changes in terrain and vegetation that can preclude complete visual coverage of the area. For example, in hilly terrain with patches of tall grass, transects shall be closer together, and in open areas with little vegetation, they can be 50 feet apart. This methodology is consistent with current survey protocols for this species (California Burrowing Owl Consortium 1993). Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. If suitable habitat is identified during the initial survey, and if the Project does not fully avoid the habitat, pre-construction surveys shall be required. Burrowing owl habitat is fully avoided if Project-related activities do not impinge on a 250foot buffer established by the approved biologist around suitable burrows. See Chapter 10 for the process to conduct and submit survey information. • *AMM WBO-2 (Western Burrowing Owl Pre-Construction Surveys): Prior to any Covered Activity ground disturbance, an approved biologist shall conduct pre-construction surveys in all areas that were identified as suitable habitat during the initial surveys. The purpose of the pre-construction surveys is to document the presence or absence of burrowing owls on the Project site, particularly in areas within 250 feet of construction activities. To maximize the likelihood of detecting owls, the pre-construction survey shall last a minimum of 3 hours. The survey shall begin 1 hour before sunrise and continue until 2 hours after sunrise (3 hours total), or begin 2 hours before sunset and continue until 1 hour after sunset. Additional time may be required for large project sites. A minimum of two pre-construction surveys shall be conducted (if owls are detected on the first survey, a second survey is not needed). All owls*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	observed shall be counted and their location shall be mapped. Surveys shall conclude no more than 2 calendar days prior to construction. Therefore, the Third-Party Project Proponent must begin surveys no more than 4 days prior to construction (2 days of surveying plus up to 2 days between surveys and construction). To avoid last-minute changes in schedule or contracting that may occur if burrowing owls are found, the Third-Party Project Proponent may also conduct a preliminary survey up to 15 days before construction. This preliminary survey may count as the first of the two required surveys as long as the second survey concludes no more than 2 calendar days in advance of construction. • *AMM WBO-3 (Burrowing Owl Avoidance): If western burrowing owl or evidence of western burrowing owl is observed on the Project site or within 250 feet of the Project site during pre-construction surveys, then the following shall occur:* ***During Breeding Season**: If the approved biologist finds evidence of western burrowing owls within a Project site during the breeding season (February 1 through August 31), all Project-related activities shall avoid nest sites during the remainder of the breeding season or while the nest remains occupied by adults or young (nest occupation includes individuals or family groups foraging on or near the site following fledging). Avoidance is establishment of a minimum 250-foot buffer zone around nests. Construction and other Project-related activities may occur outside of the 250-foot buffer zone. Construction and other Project-related activities may be allowed inside of the 250-foot non-disturbance buffer during the breeding season if the nest is not disturbed, and the Third-Party Project Proponent develops an avoidance, minimization, and monitoring plan that is approved by the Implementing Entity (i.e., the South Sacramento Conservation Agency) and Wildlife Agencies (i.e., the USFWS and CDFW) prior to Project construction based on the following criteria:* o *The Implementing Entity (i.e., the South Sacramento Conservation Agency) and Wildlife Agencies (i.e., the USFWS and CDFW) approve of the avoidance and*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	minimization plan provided by the Project applicant. o *An approved biologist monitors the owls for at least 3 days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction).* o *The same approved biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.* *If there is any change in owl nesting and foraging behavior as a result of construction activities, the approved biologist shall have authority to shut down activities within the 250-foot buffer. Construction cannot resume within the 250-foot buffer until any owls present are no longer affected by nearby construction activities, and with written concurrence from the Wildlife Agencies.* *If monitoring by the approved biologist indicates that the nest is abandoned prior to the end of nesting season and the burrow is no longer in use, the non-disturbance buffer zone may be removed if approved by the Wildlife Agencies. The approved biologist shall excavate the burrow in accordance with the latest California Department of Fish and Wildlife guidelines for burrowing owl to prevent reoccupation after receiving approval from the Wildlife Agencies.* *The Implementing Entity and Wildlife Agencies shall respond to a request from the Third-Party Project Proponent to review the proposed construction monitoring plan within 21 days.* ***During Non-Breeding Season**: During the non-breeding season (September 1 through January 31), the approved biologist shall establish a minimum 250-foot non-disturbance buffer around occupied burrows. Construction activities outside of this 250-foot buffer shall be allowed. Construction activities within the non-disturbance buffer shall be allowed if the following criteria are met to prevent owls from abandoning overwintering sites:* o *An approved biologist monitors the owls for at least 3*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	days prior to construction to determine baseline foraging behavior (i.e., behavior without construction). o *The same approved biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.* o *If there is any change in owl foraging behavior as a result of construction activities, the approved biologist shall have authority to shut down activities within the 250foot buffer.* o *If the owls are gone for at least 1 week, the Third-Party Project Proponent may request approval from the Implementing Entity (i.e., the South Sacramento Conservation Agency) and Wildlife Agencies (i.e., the USFWS and CDFW) that an approved biologist excavate usable burrows and install one-way exclusionary devices to prevent owls from re-occupying the site. After all usable burrows are excavated, the buffer zone shall be removed and construction may continue.* *Monitoring must continue as described above for the non-breeding season as long as the burrow remains active.* • *AMM WBO-4 (Burrowing Owl Construction Monitoring): During construction of Covered Activities, 250-foot construction buffer zones shall be established and maintained around any occupied burrow. An approved biologist shall monitor the site to ensure that buffers are enforced and owls are not disturbed. The approved biologist shall also train construction personnel on avoidance procedures, buffer zones, and protocols in the event that a burrowing owl flies into an active construction zone.* • *AMM WBO-5 (Burrowing Owl Passive Relocation): Passive relocation is not allowed without the express written approval of the Wildlife Agencies. Passive owl relocation may be allowed on a case-by-case basis on Project sites during the non-breeding season (September 1 through January 31) with the written approval of the Wildlife Agencies if the other measures described in this condition			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	preclude work from continuing. Passive relocation must be done in accordance with the latest California Department of Fish and Wildlife guidelines for burrowing owl. Passive relocation shall only be proposed if the burrow needing to be removed or with the potential to collapse from construction activities is the result of a Covered Activity. If passive relocation is approved by the Wildlife Agencies, an approved biologist can passively exclude birds from their burrows during the non-breeding season by installing one-way doors in burrow entrances. These doors shall be in place for 48 hours to ensure that owls have left the burrow, and then the biologist shall excavate the burrow to prevent reoccupation. Burrows shall be excavated using hand tools only. During excavation, an escape route shall be maintained at all times. This may include inserting an artificial structure into the burrow to avoid having materials collapse into the burrow and trap owls inside. Other methods of passive relocation, based on best available science, may be approved by the Wildlife Agencies over the 50-year Permit Term. • *AMM WBO-6 (Burrowing Owl Timing of Maintenance Activities): All activities adjacent to existing or planned Preserves, Preserve Setbacks, or Stream Setback areas shall be seasonally timed, when safety permits, to avoid or minimize adverse effects on occupied burrows.* • *AMM WBO-7 (Rodent Control): Rodent control shall be allowed only in developed portions of a Covered Activity Project site within western burrowing owl modeled habitat. Where rodent control is allowed, the method of rodent control shall comply with the methods of rodent control discussed in the 4(d) Rule published in the U.S. Fish and Wildlife Service's (2004) final listing rule for tiger salamander.* ***Mitigation Measure 3.3-7:*** *The Project proponent shall implement the following SSHCP AMMs to the satisfaction of the City to avoid direct and indirect effects on covered raptor species. This measure applies to loggerhead shrike (Lanius ludovicianus), northern harrier (Circus cyaneus), and white-tailed kite (Elanus leucurus). The following AMMs do not apply to*	City of Rancho Cordova Planning Department	Prior to and during construction of the Project	

ENVIRONMENTAL IMPACT	MITIGATION MEASURE	MONITORING RESPONSIBILITY	TIMING	VERIFICATION (DATE/INITIALS)
	ferruginous hawk (Buteo regalis), as they do not nest in the Plan Area. The following AMMs also do not apply to Swainson's hawk or burrowing owl, as specific AMMs have been developed for these covered raptor species and are included in separate mitigation measures. • *AMM RAPTOR-1 (Raptor Surveys): An approved biologist shall conduct a field investigation to determine if existing or potential nesting sites are present within the Project footprint and adjacent areas within 0.25 mile of the Project footprint. Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. The Project proponent shall map all existing or potential nesting sites and provide these maps to the Local Land Use Permittees (i.e., City of Rancho Cordova) and Implementing Entity (i.e., the South Sacramento Conservation Agency). Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 for the process to conduct and submit survey information.* • *AMM RAPTOR-2 (Raptor Pre-Construction Surveys): Pre-construction surveys shall be required to determine if active nests are present with a Project footprint or within 0.25 mile of a Project footprint if existing or potential nest sites are found during initial surveys and construction activities shall occur during the raptor breeding season. An approved biologist shall conduct pre-construction surveys within 30 days and 3 days of ground disturbing activities within the proposed Project footprint and within 0.25 mile of the proposed Project footprint to determine presence of nesting covered raptor species. Preconstruction surveys shall be conducted during the raptor breeding season. If a nest is present, then RAPTOR-3 and RAPTOR-4 shall be implemented. The approved biologist shall inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn shall notify the Wildlife Agencies.* • *AMM RAPTOR-3 (Raptor Nest/Roost Buffer): If active nests are found within the Project footprint or within 0.25 mile of any Project-related Covered Activity, the Third-Party Project Proponent shall establish a 0.25 mile temporary nest disturbance buffer*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	around the active nest until the young have fledged. • *AMM RAPTOR-4 (Raptor Nest/Roost Buffer Monitoring): If Project-related Covered Activities within the temporary nest disturbance buffer are determined to be necessary during the nesting season, then an approved biologist experienced with raptor behavior shall be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist shall be on site daily while construction-related activities are taking place within the disturbance buffer. Work within the temporary nest disturbance buffer can occur with the written permission of the Implementing Entity and Wildlife Agencies. If nesting raptors begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the approved biologist/monitor shall have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies shall meet to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist shall also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a covered raptor species flies into an active construction zone (i.e., outside the buffer zone).* ***Mitigation Measure 3.3-8:*** *The Project proponent shall implement the following measure to avoid or minimize impacts on other protected bird species that may occur on the site:* • *Prior to any ground disturbance a pre-construction survey for protected bird species shall be completed. This survey shall be conducted in the morning or evening hours within 30 days prior to any construction activities. The entire site shall be surveyed for birds, nests and nesting behavior. Common nesting behavior by birds includes; collecting nesting materials, bringing food items to a nest and vocalizations from young or from adults to attract a mate and to establish or defend a nesting territory. A construction-free buffer of suitable dimensions must be established around any active*	City of Rancho Cordova Planning Department	Prior to any ground disturbance	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	migratory bird nests (up to 250 feet, depending on the location and species) for the duration of the Project or until it has been determined that the chicks have fledged and are independent of their parents.			
Impact 3.3-5: The Project has the potential to, directly or indirectly, have a substantial adverse effect through habitat modifications or reductions, cause populations to drop below self-sustaining levels, substantially eliminate a community, or substantially reduce the number of, or restrict the range of, an endangered, rare or threatened species, including those considered candidate, sensitive, or special-status, in local or regional plans, policies, regulations, or by the CDFW or USFWS - Mammals	***Mitigation Measure 3.3-9:*** *The Project proponent shall implement the following SSHCP AMMs to the satisfaction of the City to avoid or minimize impacts on protected bat species that may occur on the site:* • *AMM BAT-1 (Winter Hibernaculum Surveys): An approved biologist shall conduct a field investigation of the Project footprint and adjacent areas within 300 feet of a Project footprint to determine if a potential winter hibernaculum is present, and to identify and map potential hibernaculum sites. Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. If potential hibernaculum sites are found, the Project proponent shall note their locations on Project designs and shall design the Project to avoid all areas within a 300-foot buffer around the potential hibernaculum sites. Winter hibernaculum habitat is fully avoided if Project-related activities do not impinge on a 300-foot buffer established by the approved biologist around an existing or potential winter hibernaculum site.* • *AMM BAT-2 (Winter Hibernaculum Pre-Construction Surveys): If the Project proponent elects not to avoid potential winter hibernaculum sites within the Project footprint plus a 300-foot buffer, additional surveys are required. Prior to any ground disturbance related to Covered Activities, an approved biologist shall conduct a preconstruction survey within 3 days of ground-disturbing activities within the Project footprint and 300 feet of the Project footprint to determine the presence of winter hibernaculum sites. Pre-construction surveys shall be conducted during the winter hibernaculum season (November 1 through March 31). If a winter hibernaculum is present, then BAT-3 and BAT-4 shall be implemented. The approved biologist shall inform the City of Rancho Cordova and Implementing Entity (i.e., the South Sacramento Conservation Agency) of species locations, and they in*	City of Rancho Cordova Planning Department	Prior to and during construction of the Project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	turn shall notify the Wildlife Agencies (i.e., the USFWS and CDFW). • *AMM BAT-3 (Winter Hibernaculum Buffer): If active winter hibernaculum sites are found within the Project footprint or within 300 feet of the Project footprint, the Project proponent shall establish a 300-foot temporary disturbance buffer around the active winter hibernaculum site until bats have vacated the hibernaculum and the Implementing Entity and Wildlife Agencies concur.* • *AMM BAT-4 (Bat Eviction Methods): An approved biologist shall determine if non-maternity and non-hibernaculum day and night roosts are present on the Project site. If necessary, an approved biologist shall use safe eviction methods to remove bats if direct impacts to non-maternity and non-hibernaculum day and night roosts cannot be avoided. If a winter hibernaculum site is present, Covered Activities shall not occur until the hibernaculum is vacated, or, if necessary, safely evicted using methods acceptable to the Wildlife Agencies.* ***Mitigation Measure 3.3-10:*** *The Project proponent shall implement the following measure to avoid or minimize impacts on American badger that may occur on the site:* • *A qualified biologist shall conduct a pre-construction survey for American badger within 14 days prior to the start of ground disturbance. If no American badgers are observed, then a letter report documenting the results of the survey shall be provided to the Project proponent for their records, and no additional measures are recommended. If construction does not commence within 14 days of the preconstruction survey, or halts for more than 14 days, a new survey is required. The results of the survey shall be submitted to the City's Planning Department.* • *If American badgers or their dens are found during the survey, additional avoidance measures shall be implemented, including having a qualified biologist conduct a pre-construction survey within 24 hours prior to commencement of construction activities, performing a Worker Awareness Training to all construction workers, and being present on the Project site during grading*	City of Rancho Cordova Planning Department	Prior to and during construction of the Project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	activities for the purpose of temporarily halting construction activities until the biologist determines that the badger has left the construction footprint on its own accord. The results of the survey shall be submitted to the City's Planning Department.			
Impact 3.3-6: The Project has the potential to, directly or indirectly, have a substantial adverse effect through habitat modifications or reductions, cause populations to drop below self-sustaining levels, substantially eliminate a community, or substantially reduce the number of, or restrict the range of, an endangered, rare or threatened species, including those considered candidate, sensitive, or special-status, in local or regional plans, policies, regulations, or by the CDFW or USFWS - Plants	***Mitigation Measure 3.3-11:*** *The Project proponent shall implement the following measure to the satisfaction of the City to avoid or minimize impacts on special-status plants that may occur on the site:* • *AMM PLANT-1 (Rare Plant Surveys): The Project site shall be surveyed for rare plants, specifically including Ahart's dwarf rush (Juncus leiospermus var. ahartii), Dwarf downingia (Downingia pusilla), pincushion navarretia (Navarretia myersii ssp. myersii), and hoary navarretia (Navarretia eriocephala), by an approved biologist and following the CDFW rare plant survey protocols (CDF 2009) or the most recent CDFW rare plant survey protocols. An approved biologist will conduct the field surveys and will identify and map plant species occurrences according to the protocols.* • *AMM PLANT-2 (Rare Plant Protection): If a rare plant listed in AMM PLANT-1 is detected within an area proposed to be disturbed by a Covered Activity or is detected within 250 feet of the area proposed to be disturbed by a Covered Activity, the Implementing Entity (i.e., the South Sacramento Conservation Agency) will assure one unprotected occurrence of the species is protected within a SSHCP Preserve before any ground disturbance occurs at the Project site.* • *AMM ORCUTT-1 (Orcutt Grass Surveys): The Project site will be surveyed for Sacramento and slender Orcutt grass by an approved biologist following CDFW rare plant survey protocols (CDFG 2009) or most recent CDFW guidelines to determine if Sacramento and/or slender Orcutt grass is present. An approved biologist will conduct the field investigation to identify and map occurrences.* • *AMM ORCUTT-2 (Orcutt Grass Protection): Where known or new Sacramento or slender Orcutt grass occurrences are found, they will be protected within an SSHCP Preserve that is at least 50 acres. The occurrence will be located interior to the Preserve at a distance of no less than 300 feet from the edge of the Preserve boundary. If a*	City of Rancho Cordova Planning Department	Prior to and during construction of the Project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	Project proponent encounters a previously undiscovered occurrence of Sacramento or slender Orcutt grass on a Covered Activity Project site, the Project proponent will contact the Implementing Entity or City of Rancho Cordova with authority over the Project, who will coordinate with the Wildlife Agencies (i.e., the USFWS and CDFW) for written concurrence of avoidance to ensure that the Project does not cause take of the species.			
Impact 3.3-7: The Project has the potential to have substantial adverse effect on federally- or state-protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means	*Implement* ***Mitigation Measure 3.5-1.*** ***Mitigation Measure 3.3-12****: Prior to any construction activities that would disturb a jurisdictional feature, The Project proponent shall submit a wetland delineation, site plan, and mitigation methods to the City of Rancho Cordova and the SSHCP. The Project proponent shall submit a SSHCP permit application package to the City of Rancho Cordova ("Land Use Authority Permittee") as a request that coverage provided by City's SSHCP Aquatic Resources Program be extended to the proposed activities. The City of Rancho Cordova shall review the SSHCP permit application for consistency with all of the SSHCP requirements and provide the South Sacramento Conservation Agency ("Implementing Entity) with a copy of the SSHCP requirements for tracking purposes. The Project proponent shall be responsible for paying all SSHCP development fees associated with obtaining coverage from the City of Rancho Cordova.* *Additionally, the Project applicant shall participate in the SSHCP Aquatic Resources Program (ARP) by paying the applicable mitigation fee for the loss of jurisdictional aquatic features. Costs for the aquatic resources compensatory mitigation projects shall be covered through the Covered Activity project mitigation fees collected under the SSHCP. The SSHCP includes a fee structure that is distinguished by land cover type. This approach accounts for variations in costs associated with the particular requirements for each land cover type. The Project proponent shall pay fees based on the land cover types affected by the development Project and the fee schedule.*	See Mitigation Measure 3.5-1 City of Rancho Cordova Planning Department	See Mitigation Measure 3.5-1 Prior to any construction activities that would disturb a jurisdictional feature	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	Mitigation Measure 3.3-13*: The Project proponent shall implement the following SSHCP Avoidance and Minimization Measures (AMMs) to the satisfaction of the City to avoid direct and indirect effects of Covered Activities on Aquatic land covers of the Verna Pool Ecosystem:* • *AMM LID-1 (Stormwater Quality): When the size of a Covered Activity project exceeds the thresholds established by the State Water Resources Control Board (SWRCB) (see the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions, or future SWRCB-approved design manuals applicable to the Plan Area), incorporate stormwater management into site design to satisfy the requirements outlined in the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions. Stormwater management may include groundwater recharge (LID-2) and natural site features (LID-3).* • *AMM LID-2 (Groundwater Recharge): When siting SSHCP Preserves containing Riparian, Open Water, or Freshwater Marsh SSHCP land cover types, the Implementing Entity (i.e., the South Sacramento Conservation Agency) will prioritize locations that are suitable for groundwater recharge.* • *AMM LID-3 (Natural Site Features): Incorporate preservation of a site's natural aquatic features (such as creeks and streams) into project design to retain natural hydrologic patterns and to retain habitat that might be used by Covered Species.* • *AMM BMP-1 (Construction Fencing): Orange construction fencing will be installed to ensure that ground disturbance does not extend beyond the allowed construction footprint (i.e., the limit of project construction plus equipment staging areas and access roads). Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will mark the outer boundary of any Preserve Setback or Stream Setback adjacent to or within the project site with orange construction fencing prior to ground disturbance. This fencing will remain in place until project completion, as identified by the Plan Permittee.* • *AMM BMP-2 (Erosion Control): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will install temporary control measures for sediment,*	City of Rancho Cordova Planning Department	Prior to and during construction of the Project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	stormwater, and pollutant runoff as required by the Plan Permittee to protect water quality and species habitat. Silt fencing or other appropriate sediment control device(s) will be installed downslope of any Covered Activity that disturbs soils. *Fiber rolls and seed mixtures used for erosion control will be certified as free of viable noxious weed seed. As discussed in Section 5.4.2, Covered Species Take Avoidance and Minimization Measures, erosion controls installed in or adjacent to Plan Area modeled habitat for giant gartersnake (Thamnophis gigas), western pond turtle (Actinemys marmorata), California tiger salamander (California tiger salamander), or western spadefoot (see Chapter 3) must be of appropriate design and materials that will not entrap the species (e.g., not contain mesh netting). Regular monitoring and maintenance of the project's erosion control measures will be conducted until project completion to ensure effective operation of erosion control measures.* • *AMM BMP-3 (Equipment Storage and Fueling): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will ensure that equipment storage and staging will occur in the development footprint only (not sited in any existing on-site Preserve, planned on-site Preserve, Preserve Setback, Stream Setback, or aquatic land cover type). Fuel storage and equipment fueling will occur away from waterways, stream channels, stream banks, and other environmentally sensitive areas within the development footprint.* *However, certain equipment storage and fueling activities can be allowed on Preserves within habitat re-establishment/establishment sites (refer to Section 5.2.7) if no location outside of the site is available. If a Covered Activity results in a spill of fuel, hydraulic fluid, lubricants, or other petroleum products, the spill will be absorbed and waste disposed of in a manner to prevent pollutants from entering a waterway, Preserve, Preserve Setback, or Stream Setback.* • *AMM BMP-4 (Erodible Materials): Plan Permittees and Third-Party Project Proponents implementing Covered Activities must not deposit erodible materials into waterways. Vegetation clippings,*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	brush, loose soils, or other debris material will not be stockpiled within stream channels or on adjacent banks. Erodible material must be disposed of such that it cannot enter a waterway, Preserve, Preserve Setback, Stream Setback, or aquatic land cover type. If water and sludge must be pumped from a subdrain or other structure, the material will be conveyed to a temporary settling basin to prevent sediment from entering a waterway. • *AMM BMP-5 (Dust Control): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will water active construction sites regularly, if warranted, to avoid or minimize impacts from construction dust on adjacent vegetation and wildlife habitats. No surface water will be used from aquatic land covers; water will be obtained from a municipal source or existing groundwater well.* • *AMM BMP-6 (Construction Lighting): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will direct all temporary construction lighting (e.g., lighting used for security or nighttime equipment maintenance) away from adjacent natural habitats, and particularly Riparian and Wetland habitats and wildlife movement areas.* • *AMM BMP-7 (Biological Monitor): If a Covered Activity includes ground disturbance within Covered Species modeled habitat, an approved biologist will be on site during the period of ground disturbance, and may need to be on site during other construction activities depending on the Covered Species affected. After ground-disturbing project activities are complete, the approved biologist will train an individual to act as the on-site construction monitor for the remainder of construction, with the concurrence of the Permitting Agencies. The on-site monitor will attend the training described in BMP-8. The approved biologist and the on-site monitor will have oversight over implementation of Avoidance and Minimization Measures, and will have the authority to stop activities if any of the requirements associated with those measures are not met. If the monitor requests that work be stopped, the Wildlife Agencies (i.e., the USFWS and CDFW) will be notified within one working day by email. The approved biologist and/or on-site*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	monitor will record all observations of listed species on California Natural Diversity Database field sheets and submit them to the California Department of Fish and Wildlife. The approved biologist or on-site monitor will be the contact source for any employee or contractor who might inadvertently kill or injure a Covered Species or who finds a dead, injured or entrapped individual. The approved biologist and on-site monitor's names and telephone numbers will be provided to the Wildlife Agencies prior to the initiation of ground-disturbing activities. Refer to species-specific measures for details on requirements for biological monitors. • *AMM BMP-11 (Speed Limit): Project-related vehicles will observe the posted speed limits on paved roads and a 10-mile-per-hour speed limit on unpaved roads and during travel in project areas. Construction crews will be given weekly tailgate instruction to travel only on designated and marked existing, cross-country, and project-only roads.* • *AMM ROAD-1 (Road Project Location): Road projects will be located in the least environmentally sensitive area to avoid, to the maximum extent practicable, impacts on Covered Species, Covered Species habitat, and waters of the United States. Road project alignments will follow existing roads, road easements, and rights-of-way, or be sited in disturbed areas to minimize habitat loss and additional habitat fragmentation.* • *AMM UTILITY-4 (Siting of Entry and Exit Location): The entry and exit locations for the trenchless construction method (see Utility-3) will be sited to avoid impacts to vernal pools and Riparian Woodland, and to avoid direct take of SSHCP Covered Species.* • *AMM EDGE-4 (Locate Stormwater Control Outside Preserves): Roads, sidewalks, and other impermeable surfaces of Urban Development Covered Activities adjacent to existing or planned Preserves will slope away from Preserves and Preserve Setbacks or intercept drainage with swales or curbs and gutters to preclude drainage from entering Preserves and Preserve Setbacks. Stormwater flows must be directed away from Preserves and Preserve Setbacks and directed into stormwater control facilities inside the development (outside Preserves and Preserve Setbacks)*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	(see EDGE-6 for exception to EDGE-4 in certain SSHCP Linkage Preserves). • *AMM EDGE-5 (Stormwater Control in Preserve Setbacks): If trails are established in any Preserve Setback in compliance with EDGE-3, the trail must be sloped away from the Preserve, and rainwater leaving the trail surface must flow into an adjacent low-velocity bio-retention swale or cell to keep rainwater runoff and trail contaminants from entering the Preserve. Low-velocity bio-retention swales or cells are typically small linear features placed on one or both sides of a trail. As required by EDGE-3, trails and their adjacent bio-retention swales or cells must be located on the side of the Preserve Setback nearest development.* • *AMM EDGE-6 (Detention Basins in Linkage Preserves): Because planned SSHCP Linkage Preserves L1, L2, L4, L7, L8, L9, and L10 (see Section 7.5) surround natural creeks or streams that must receive stormwater from planned adjacent Urban Development Covered Activities, a limited number of stormwater detention basins will be allowed on those Linkage Preserves. Detention basins within Linkage Preserves (see Section 5.2.7) will be designed and constructed with fill material to build up the perimeter of the detention basin so as not to impact the soil restrictive layer (duripan or hardpan) and function of the soil perched aquifer. Detention basins within Linkage Preserves will capture stormwater flows and runoff, and will discharge water to the stream/creek or percolate collected water to the soil perched aquifer. Detention basin structures that collect stormwater entering the basin or convey stormwater leaving the basin must be designed to avoid and minimize effects to Covered Species habitat in the Linkage Preserve.* • *AMM EDGE-7 (Hardpan/Duripan Protection): To protect the soil perched aquifer and the micro-watersheds supporting existing vernal pool hydrology, activities that have the potential to cut into, disrupt, or remove the soil's restrictive layer (hardpan or duripan) will not occur within Preserves or Preserve Setbacks. However, in certain circumstances, the Covered Activities defined in Section 5.2.6, Covered Activities in Stream Setbacks in the UDA, and Section 5.2.8, Covered Activities in the Laguna Creek Wildlife Corridor of*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	the Preserve System, may result in punctures or other minor disruptions of the soil hardpan or duripan if approved by the Implementing Entity and the Technical Advisory Committee according to the process described in Chapter 9 of the SSHCP. If a Covered Activity on a Preserve or Preserve Setback results in a puncture or other disruption to the soil hardpan or duripan, the puncture will be sealed using bentonite clay or other material that maintains the functionality of the soil's restrictive layer and associated perched aquifer.			
CULTURAL AND TRIBAL RESOURCES				
Impact 3.4-1: Project implementation has the potential to cause a substantial adverse change to a significant historical or archaeological resource, as defined in CEQA Guidelines §15064.5, or a significant tribal cultural resource, as defined in Public Resources Code §21074	***Mitigation Measure 3.4-1:*** *Prior to any ground-disturbing activities on the Project site, a qualified archaeologist shall conduct pre-construction worker cultural resources sensitivity training. The training session shall focus on the recognition of the types of historical and cultural, including Native American, resources that could be encountered, procedures to be followed if resources are found, and pertinent laws protecting these resources. Representatives from the Shingle Springs Band of Miwok Indians and the United Auburn Indian Community shall be invited to attend the training.* *Representatives from the Shingle Springs Band of Miwok Indians and the United Auburn Indian Community shall be invited to monitor ground-disturbing activities during construction and shall be provided with any safety requirements that shall be followed during any ground-disturbing and construction activities.* *If any cultural resources, including prehistoric or historic artifacts, or other indications of archaeological resources or tribal cultural resources are found during grading and construction activities, all work shall be halted immediately within a 100-foot radius of the discovery until an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, has evaluated the find(s) and until the Shingle Springs Band of Miwok Indians and the United Auburn Indian Community have been contacted and invited to review and document the find.*	City of Rancho Cordova Planning Department	Prior to any ground-disturbing activities on the Project site	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	Work shall not continue at the discovery site until the archaeologist conducts sufficient research and data collection to make a determination that the resource is either 1) not cultural in origin; or 2) not potentially significant or eligible for listing on the NRHP or CRHR; or 3) not a significant Public Trust Resource. *If a significant finding is made, a plan must be developed for this inadvertent finding. Measures to potentially address a subsurface finding could include one or more of the following depending upon the nature of the find: recordation of the finding; further efforts to define the extent and nature of the resource; preservation in place, and re-design to ensure long-term preservation of the resource; and/or data recovery excavations.* *If Native American resources are identified, a Native American monitor, following the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites established by the Native American Heritage Commission, may also be required and, if required, shall be retained at the Applicant's expense. Additionally, if any of these resources are identified, the Shingle Springs Band of Miwok Indian shall be consulted to go over the process to protect any potentially important or sacred resources, particularly if located along the on-site aquatic resources.*			
Impact 3.4-2: Project implementation has the potential to disturb human remains, including those interred outside of formal cemeteries	***Mitigation Measure 3.4-2:*** *If human remains are discovered during the course of construction during any phase of the Project, work shall be halted at the site and at any nearby area reasonably suspected to overlie adjacent human remains until the Sacramento County Coroner has been informed and has determined that no investigation of the cause of death is required. If the remains are of Native American origin, the following steps will be taken:* • *The coroner shall contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The most likely descendent shall make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.* • *The Shingle Springs Band of Miwok Indian shall be consulted to go*	City of Rancho Cordova Planning Department	If human remains are discovered during the course of construction during any phase of the Project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	over the process to protect any human remains, particularly if located along the on-site aquatic resources. • *The landowner shall retain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance when any of the following conditions occurs:* o *The Native American Heritage Commission is unable to identify a descendent.* o *The descendant identified fails to make a recommendation.* o *The City of Rancho Cordova or its authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.*			
GEOLOGY AND SOILS				
Impact 3.5-2: Project construction and implementation has the potential to result in substantial soil erosion or the loss of topsoil	***Mitigation Measure 3.5-1:*** *Prior to any site disturbance, the Project proponent shall submit a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) to the RWQCB in accordance with the NPDES General Construction Permit requirements. The SWPPP shall be designed to control pollutant discharges utilizing Best Management Practices (BMPs) and technology to reduce erosion and sediments. BMPs may consist of a wide variety of measures taken to reduce pollutants in stormwater runoff from the Project site. Measures shall include temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) that will be employed to control erosion from disturbed areas. Final selection of BMPs will be subject to approval by the City of Rancho Cordova and the RWQCB. The SWPPP will be kept on site during construction activity and will be made available upon request to representatives of the RWQCB.*	City of Rancho Cordova Planning Department Regional Water Quality Control Board	Prior to any site disturbance	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
Impact 3.5-3: The Project has the potential to be located on a geologic unit or soil that is unstable, or that would become unstable as a result of Project implementation, and potentially result in landslide, lateral spreading, subsidence, liquefaction or collapse	***Mitigation Measure 3.5-2:*** *Prior to final design approval and issuance of building permits for each phase of the Project, the Project applicant shall submit to the City of Rancho Cordova Building and Safety Division, for review and approval, a design-level geotechnical engineering report produced by a California Registered Civil Engineer or Geotechnical Engineer. The design-level report shall address, at a minimum, the following:* • *Compaction specifications and subgrade preparation for onsite soils;* • *Structural foundations, including concrete design that addresses potential soils corrosivity;* • *Grading practices; and* • *Expansive/unstable soils.* *The design-level geotechnical engineering report shall include a summary of the site, soil, and groundwater conditions, seismicity, laboratory test data, exploration data and a site plan showing exploratory locations and improvement limits. The report shall include borings/test pits for park sites and include recommendations for park site development, including the potential to amend soils, if necessary, during the preliminary grading of the Project site during the first phase of construction activities. The report shall be signed by a licensed California Geotechnical Engineer. Design-level recommendations shall be included in the foundation and improvement plans and approved by the City of Rancho Cordova Public Works Department prior to issuance of any building permits.*	City of Rancho Cordova Building and Safety Division City of Rancho Cordova Public Works Department	Prior to final design approval and issuance of building permits for each phase of the Project	
Impact 3.5-5: Project implementation has the potential to directly or indirectly destroy a unique paleontological resource	***Mitigation Measure 3.5-3:*** *If any paleontological resources are found during grading and construction activities, all work shall be halted immediately within a 200-foot radius of the discovery until a qualified paleontologist has evaluated the find.* *Work shall not continue at the discovery site until the paleontologist evaluates the find and makes a determination regarding the significance of the resource and identifies recommendations for conservation of the resource, including preserving in place or relocating on the Project site, if feasible, or collecting the resource to the extent feasible and documenting the find with the University of California Museum of Paleontology.*	City of Rancho Cordova Planning Department	If any paleontological resources are found during grading and construction activities	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
GREENHOUSE GASES, CLIMATE CHANGE, AND ENERGY				
Impact 3.6-1: The Project has the potential to generate construction-related GHGs, either directly or indirectly, that may have a significant effect on the environment	***Mitigation Measure 3.6-1:*** *The Project applicant shall implement the following best management practices (BMPs) for reducing GHG emissions from construction projects, as feasible. The City of Rancho Cordova shall be responsible for monitoring implementation of these measures:* • *Improve fuel efficiency from construction equipment:* o *Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than 3 minutes (5 minute limit is required by the state airborne toxics control measure [Title 13, sections 2449(d)(3) and 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site.* o *Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.* o *Train equipment operators in proper use of equipment.* o *Use the proper size of equipment for the job.* o *Use equipment with new technologies (repowered engines, electric drive trains).* • *Perform on-site material hauling with trucks equipped with on-road engines (if determined to be less emissive than the off-road engines).* • *Use alternative fuels for generators at construction sites such as propane or solar, or use electrical power, as feasible.* • *Use an ARB approved low carbon fuel for construction equipment. (NOx emissions from the use of low carbon fuel must be reviewed and increases mitigated.), as applicable.* • *Encourage and provide carpools, shuttle vans, transit passes and/or secure bicycle parking for construction worker commutes.* • *Reduce electricity use in the construction office by using compact fluorescent bulbs, powering off computers every day, and replacing heating and cooling units with more efficient ones.*	City of Rancho Cordova Planning Department	During all construction activities	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	• *Recycle or salvage non-hazardous construction and demolition debris (goal of at least 75% by weight).* • *Use locally sourced or recycled materials for construction materials (goal of at least 20% based on costs for building materials, and based on volume for roadway, parking lot, sidewalk and curb materials). Wood products utilized should be certified through a sustainable forestry program.* • *Minimize the amount of concrete for paved surfaces or utilize a low carbon concrete option.* • *Produce concrete on-site if determined to be less emissive than transporting ready mix.* • *Use SmartWay certified trucks for deliveries and equipment transport.* • *Develop a plan to efficiently use water for adequate dust control.* ***Mitigation Measure 3.6-2:*** *The Project applicant shall implement the following Basic Construction Emissions Control Practices (BCECP) BMPs for reducing emissions from construction projects, as feasible. The City of Rancho Cordova shall be responsible for monitoring implementation of these measures:* • *Control of fugitive dust is required by District Rule 403 and enforced by District staff.* • *Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.* • *Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.* • *Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.* • *Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).* • *All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil*	City of Rancho Cordova Planning Department	During all construction activities	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	binders are used. • *Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.* • *For diesel-powered fleets working at the construction site:* o *Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site.* o *Provide current certificate(s) of compliance for CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation [California Code of Regulations, Title 13, sections 2449 and 2449.1]. For more information contact CARB at 877-593-6677, doors@arb.ca.gov, or www.arb.ca.gov/doors/compliance_cert1.html*			
Impact 3.6-2: The Project has the potential to generate operation-related GHGs, either directly or indirectly, that may have a significant effect on the environment	***Mitigation Measure 3.6-3:*** *The Project shall comply with the GHG Reduction Plan for The Ranch throughout all phases of Project construction and operation.* ***The Ranch GHG Reduction Plan*** *The Project shall implement all measures shown in the table below that are identified as "Mitigation Measure" in order to reduce the Project's net operational emissions, including amortized construction emissions, to an emissions level that meets the SMAQMD threshold for GHG emissions. It is noted that incorporation of the three SMAQMD-Recommended CalEEMod Measures to Reduce GHGs that are identified specifically as "Mitigation Measures" in the below table, would reduce the Project's net operational emissions, including amortized construction emissions, to approximately 1,099.9 MT CO_2e, as shown below. It is noted that the CalEEMOD measures incorporated into the Project design are also included in the GHG Reduction Plan to ensure that these measures are carried forward and reflected in all phases of the Project.* ***MT CO2e***	City of Rancho Cordova Planning Department	Throughout all phases of Project construction and operation	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*

Unmitigated Operational and Amortized Construction GHG Emissions (Reflects all CalEEMOD Measures that are incorporated into Project design (Table 3.6-5) — *6,205.9*

Mitigated Operational and Amortized Construction GHG Emissions (reflects CalEEMOD Measures TRT-1, TRT-2, BE-1, WUW-2) (Table 3.6-6) — *6,121.2*

Reduction Associated with CalEEMOD Mitigation Measures (5,720.1-5,635.4) — *<84.7>*

GHG Emission Reductions Estimated to be Required by Carbon Offsets to Reduce Project GHG Emissions to below 1,100 MT CO_2e (Reduction) — *<5,021.3>*

Total with Supplemental CalEEMOD Measures TRT-1, TRT-2, BE-1, and WUW-2 — ***1,099.9***

GHG REDUCTION PLAN

GHG REDUCTION MEASURE	*APPLICABILITY*	*IMPLEMENTATION*
SMAQMD-RECOMMENDED CALEEMOD MEASURE TO REDUCE GHGS[1,2]		
LUT-9 Improve Walkability Design: Walkable street network	Incorporated into Project Description. Project is designed with a walkable street pattern, with a ratio of 144.9 intersections per square mile, multiple bicycle/pedestrian connections, an off-street trail system, and bicycle lanes to encourage walkability.	Included in Project design as described in the Project Description and based on intersections identified on TSM and in the TSM and site plan figures shown in the SPA Handbook. No additional implementation required.
SDT-1 Improve Pedestrian Network: On-site pedestrian access network links all of project internally and externally	Incorporated into Project Description. Project is designed with a walkable street pattern, with a ratio of 144.9 intersections per square mile, multiple bicycle/pedestrian connections, an off-street	Included in Project design as described in the Project Description based on pedestrian amenities shown on the TSM as well as those identified in the SPA Handbook. No additional

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*			*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
		trail system, and bicycle lanes to encourage walkability.	implementation required.			
	SDT-2 Provide Traffic Calming Measures: Projects streets and intersections feature traffic calming features	Incorporated into Project Description. Project has been designed to include a range of traffic-calming street design features, such as narrower streets, limited single-loaded streets, parking on both sides of the street, posted speed limit signs, planter strips with street trees, bulb-outs, and horizontal shifts (lane centerline that curves or shifts), and intersection traffic calming features, including pedestrian push-buttons at three intersections, marked crosswalks, count-down signal timers where appropriate, curb extensions, channelization islands, median islands, and tight corner radii.	Included in Project design as described in the Project Description and based on the features of the TSM and identified in the SPA Handbook. No additional implementation required.			
	SDT-3 Implement a Neighborhood Electric Vehicle (NEV) Network: Project provides a viable NEV network	Incorporated into Project Design. While the Project does not include a traditional NEV, the Project would support electric vehicle use through installing EV charging stations throughout the Project site, such that at least 50% of single family residences and 5% of	Included in Project design as described in the Project Description and in the SPA Handbook. No additional implementation required.			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*			*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
		parking spaces within the commercial, park and recreation, and multi-family land uses will have EV charging stations to reduce reliance on gasoline-fueled vehicles.				
	TRT-1&2 Implement Trip Reduction Program: Transportation Management Association (TMA) membership or other comprehensive services	Mitigation Measure. Mitigation Measure 3.6-3 requires the Project to join a Transportation Management Association (all employees located within the Project site to be eligible to participate).	Prior to issuance of occupancy permits for each construction phase of the Project, the Project applicant shall demonstrate that the residential, commercial, and parks and recreation uses associated with each phase have a permanent commitment, demonstrated through CC&Rs or comparable permanent mechanisms, to participate in a Transportation Management Association and ensures payment of annual fees for on-going participation. The Transportation Management Association shall grant all employees located within the Project site eligibility to participate.			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*			*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	BE-1 Exceed Title 24 California Code of Regulations, known as the California Building Standards Code (Title 24): Use less energy than allowed by Title 24	Mitigation Measure. Mitigation Measure 3.6-3 requires the Project to exceed the 2016 Title 24 requirements by 2 percent.	Prior to issuance of building permits for each construction phase of the Project, including all residential, commercial, and parks and recreation uses, the Project applicant shall demonstrate that the phase exceeds the 2016 Title 24 requirements for energy use and efficiency by a minimum of 2 percent. The documentation shall identify specific Project components, such as building materials and design, lighting improvements beyond the minimum required by LE-1, etc. and the associated reduction with each component.			
	LE-1 Install High Efficiency Lighting: Make use of high-efficient outdoor and public lighting	Incorporated into Project Design. The Project proposes to install energy-efficient (i.e., LED or better) lighting for all outdoor lighting.	Included in Project design as described in the Project Description and SPA Handbook. No additional implementation required.			
	BE-4 Energy Efficient Appliances: Use appliances more energy efficient than standard models	Incorporated into Project Design. The Project proposes to install energy-efficient appliances.	Included in Project design as described in the Project Description and SPA Handbook. No additional implementation required.			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*			*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	AE-1 On-site Renewable Energy: Establish on-site renewable energy. (No Ozone Precursor reductions if NO_X intensity is higher than electric utility.)	Incorporated into Project Design. The Project would generate a minimum of 95% of electricity via renewable energy via either on-site energy generation and/or through a contract with SMUD.	Included in Project design as described in the Project Description and SPA Handbook. No additional implementation required.			
	WUW-2 Apply Water Conservation Strategy: Reduce indoor and outdoor water use	Incorporated into Project Design. The Project landscaping would be drought-tolerant, sufficient to reduce outdoor water reduction by 25% from non-drought tolerant landscaping. The Project would also minimize the use of turf for residential uses to 70% less than the maximum allowed turf area to reduce water use.	Included in Project design as described in the Project Description and described in the SPA Handbook. No additional implementation required.			
	WUW-1 Install Low-Flow Bathroom Faucet, Install Low-Flow Kitchen Faucet, Install Low-flow Toilet, Install Low-flow Shower	Incorporated into Project Design. The Project proposes to install energy-efficient appliances.	Included in Project design as described in the Project Description and identified in the SPA Handbook. No additional implementation required.			
	WUW-5 Reduce Turf in Landscapes and Lawns: Use less turf than normal projects	Incorporated into Project Design. Minimize turf for residential uses to 70% less than the maximum allowed turf area to reduce water	Included in Project design as described in the Project Description and identified in the SPA Handbook. No additional			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*			*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
		use.	implementation required.			
	WUW-4 Use Water-Efficient Irrigation Systems: Install a smart irrigation control system	Incorporated into Project Design. Use water-efficient irrigation systems (automatic rain shut-off, maximum gallon per minute restriction, WiFi connectivity) to reduce water waste.	Included in Project design as described in the Project Description. No additional implementation required.			
	WUW-3 Water Efficient Landscape: Plant native or drought-resistant trees and Vegetation	Mitigation Measure. Mitigation Measure 3.6-3 requires the Project to incorporate a minimum of 50 percent of native or drought-resistant trees and vegetation into the proposed landscaping, including landscaping lots, landscaping associated with parks and recreation facilities, and landscaping associated with residential uses. Project applicant shall demonstrate at least a 25% reduction in outdoor water use from implementation of this measure.	Prior to approval of improvement plans for each phase of construction, the Project applicant shall submit landscaping plans that demonstrate a minimum of 50 percent of of native or drought-resistant trees and vegetation are included in the non-turf component of proposed landscaping, including landscaping lots, parks and recreation lots and facilities, and residential uses.			
	ADDITIONAL MEASURES (NOT MODELED IN CALEEMOD)					
	Purchase Offsets.	Mitigation Measure. This Mitigation Measure 3.6-3 requires the Project applicant to purchase carbon offsets to reduce net project operational and amortized construction emissions to less than SMAQMD's	Prior to issuance of the project's first building permit, the project applicant shall develop a SMAQMD-approved commitment to purchase carbon offsets sufficient to reduce project			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	adopted threshold for GHG emissions. operational emissions and amortized construction emissions to less than SMAQMD's adopted threshold for GHG emissions that is in place at the time of the offset purchase. The purchase of carbon offsets may be prorated so that the offsets are paid concurrent with the approval of each project phase (small lot subdivision maps, multifamily parcel, etc.). [1] *SMAQMD LAND USE EMISSIONS REDUCTIONS VERSION 4 (FOR OPERATIONAL EMISSIONS), SMAQMD, 2017.* [2] *MEASURES LUT-1, LUT-5, LUT-6, PDT-1, PDT-2, TST-1, TST-3, TST-4, WSW-1, WSW-2, AND SW-1 ARE NOT APPLICABLE AS DESCRIBED IN THE DRAFT EIR.*			
HAZARDS AND HAZARDOUS MATERIALS				
Impact 3.7-1: Project implementation has the potential to create a significant hazard through the routine transport, use, or disposal of hazardous materials or through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment	***Mitigation Measure 3.7-1****: Prior to commencement of grading, the applicant shall submit Construction Site Management Plan for review and approval by the City. The Construction Site Management Plan shall establish management practices for handling hazardous materials, including fuels, paints, cleaners, solvents, etc., during construction to reduce the potential for spills and to direct the safe handling of these materials if encountered. The City shall approve the Construction Site Management Plan prior to any earth moving.*	City of Rancho Cordova Building and Safety Division	Prior to commence-ment of grading	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
HYDROLOGY AND WATER QUALITY				
Impact 3.8-1: The Project may violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality during construction	***Mitigation Measure 3.5-1****: Prior to any site disturbance, the Project proponent shall submit a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) to the RWQCB in accordance with the NPDES General Construction Permit requirements. The SWPPP shall be designed to control pollutant discharges utilizing Best Management Practices (BMPs) and technology to reduce erosion and sediments. BMPs may consist of a wide variety of measures taken to reduce pollutants in stormwater runoff from the Project site. Measures shall include temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) that will be employed to control erosion from disturbed areas. Final selection of BMPs will be subject to approval by the City of Rancho Cordova and the RWQCB. The SWPPP will be kept on site during construction activity and will be made available upon request to representatives of the RWQCB. (Note: This measure is also included in Section 3.5.)* ***Mitigation Measure 3.8-1:*** *Prior to the commencement of construction activities, the Project proponent shall submit, and obtain approval of, a Spill Prevention Countermeasure and Control Plan (SPCC) to the Sacramento County Environmental Management Department. The SPCC shall specify measures and procedures to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during all construction activities, and shall meet the requirements specified in the Code of Federal Regulations, title 40, part 112.*	City of Rancho Cordova Planning Department Regional Water Quality Control Board City of Rancho Cordova Planning Department Sacramento County Environmental Management Department	Prior to any site disturbance Prior to the commence-ment of construction activities	
Impact 3.8-2: The Project may violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality during post-construction	***Mitigation Measure 3.8-2:*** *Before approval of the final subdivision map for all Project phases, a detailed Best Management Practice (BMP) and water quality maintenance plan shall be prepared by a qualified engineer retained by the Project applicants that meets the standards of the City's NPDES Permit (No. CAS00853254) and shall document that stormwater runoff from the Project site is treated per the standards in the Stormwater Quality Design Manual for Sacramento and South Placer Regions. Drafts of the plan shall be submitted to the City of Rancho Cordova for review and approval*	City of Rancho Cordova Planning Department	Before approval of the final subdivision map for all Project phases	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	concurrently with development of tentative subdivision maps for all Project phases. The plan shall finalize the water quality improvements and further detail the structural and nonstructural BMPs proposed for the Project. The plan shall include the elements described below. • *A quantitative hydrologic and water quality analysis of proposed conditions incorporating the proposed drainage design features.* • *Pre-development and post-development calculations demonstrating that the proposed water quality BMPs meet or exceed requirements established by the City of Rancho Cordova and including details regarding the size, geometry, and functional timing of storage and release pursuant to the "Stormwater Quality Design Manual for Sacramento and South Placer Regions".* • *Source control programs to control water quality pollutants on the Project site, which may include but are limited to recycling, street sweeping, storm drain cleaning, household hazardous waste collection, waste minimization, prevention of spills and illegal dumping, and effective management of public trash collection areas.* • *A pond management component for the proposed basins that shall include management and maintenance requirements for the design features and BMPs, and responsible parties for maintenance and funding.* • *Low Impact Development (LID) and Hydromodification control measures shall be integrated into the BMP and water quality maintenance plan. These may include, but are not limited to:* o *Bioretention planters;* o *surface swales;* o *replacement of conventional impervious surfaces with pervious surfaces (e.g., porous pavement, green roofs);* o *impervious surfaces disconnection; and* o *trees planted to intercept stormwater.*			
LAND USE				
Impact 3.9-1: Implementation of the Project would not conflict	***Mitigation Measure 3.9-1:*** *The proposed open space areas located under the SMUD transmission line that traverses the site shall be designed and*	City of Rancho Cordova	During review of Project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project adopted to avoid or mitigate an environmental effect	*maintained in accordance with SMUD's Guide for Transmission Encroachment. According to the Guide, certain improvements, for safety and liability reasons, are typically not allowed within transmission corridors. These include, but not limited to the following:* • *Buildings or structures;* • *Covered parking;* • *Excavation, elevation or grade changes;* • *Light Standards over 15' tall;* • *Parallel Utilities;* • *Playground Equipment;* • *Stockpiling of materials;* • *Storage of combustibles;* • *Swimming pools, spas, gazebos, etc.;* • *Tall tree species (over 15' at maturity);* • *Trash enclosures; and* • *Water Detention and/or Retention Basins.* *The proposed open space areas located under the PG&E transmission line that traverses the site shall be designed and maintained in accordance with the PG&E Electric and Gas Service Requirements.* *Future improvement plans that include the transmission lines shall be consistent with the items outlined in Chapter 5, Trails and Parks, of the Guide, as well as other applicable Chapters. This requirement shall be noted on the Project improvement plans, subject to review and approval by the City of Rancho Cordova.*	Planning Department	Improvement Plans for the proposed open space areas located under the on-site SMUD transmission line	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
TRANSPORTATION AND CIRCULATION				
Impact 3.13-1: Under Existing (2017) Plus Project conditions, Project may conflict with an applicable program, plan, ordinance or policy addressing the circulation system – Roadway Segments and Intersections	***Mitigation Measure 3.13-1:*** *Intersection #3, Jackson Road at Eagles Nest Road: The Project applicant shall be responsible for funding the Project's fair share (1.69 percent) of the construction costs, calculated to the satisfaction of the City, in consultation with Sacramento County Department of Transportation, of the following improvement:* • *The intersection shall be converted from side street stop controlled to signalized. The estimated cost of this improvement is $527,880; the Project's fair-share would be $7,020 (Kimley Horn, 2019).*	City of Rancho Cordova Planning Department	Prior to approval of Project Improvement Plans	
	Mitigation Measure 3.13-2: *Intersection #9, Grant Line Road at Sunrise Boulevard: The Project applicant shall be responsible for funding the Project's fair share (2.46 percent) of the construction costs, calculated to the satisfaction of the City, in consultation with Sacramento County Department of Transportation, of the following improvement:* • *The southbound approach shall be changed to include a right turn lane and an all-purpose lane. This would require restriping the southbound approach to move the bicycle lane from its existing location between the two travel lanes to the right shoulder and add striping for the right turns from the inside lane, consistent with the Optional Through Right and Right-Turn-Only lane configuration included in Figure 9C-4a (CA) of the CaMUTCD[1]. The estimated cost of this improvement is $25,000; the Project's fair-share would be $620 (Kimley Horn, 2019).*	City of Rancho Cordova Planning Department	Prior to approval of Project Improvement Plans	
	Mitigation Measure 3.13-3: *Intersection #11, Douglas Road at Sunrise Boulevard: Signal timing optimization and a right-turn overlap signal phase shall be added for the eastbound right-turn, overlapping with the northbound left-turn movement shall be completed prior to construction of the 763rd dwelling unit equivalent (DUE). A single-family residential (non-age-restricted) unit is calculated as 1.0 DUE, a multifamily residential unit is calculated as 0.616 DUE, and an active adult residential unit is calculated as 0.37 DUE.*	City of Rancho Cordova Planning Department	Prior to approval of Project Improvement Plans	

[1] California MUTCD 2014 Edition. Chapter 9C-Markings: Part 9 Traffic Control for Bicycle Facilities. November 2014

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	Mitigation Measure 3.13-4: *Intersection #21, Sunrise Boulevard at White Rock Road: Signal timing optimization shall be completed at this intersection prior to construction of the 1,162nd DUE. A single-family residential (non-age-restricted) unit is calculated as 1.0 DUE, a multifamily residential unit is calculated as 0.616 DUE, and an active adult residential unit is calculated as 0.37 DUE.* ***Mitigation Measure 3.13-5:*** *Intersection #25, Sunrise Boulevard at Zinfandel Drive: The eastbound and westbound approaches shall be restriped to include a left turn lane and through-right lane. It is noted that this improvement, or components thereof, are also required of the Suncreek Specific Plan project (see SunCreek Specific Plan Project DEIR/DEIS Mitigation Measure 3.15-1k, p. 3.15-43) and the Rio del Oro Specific Plan Project (see Rio del Oro Specific Plan Project DEIR/DEIS Mitigation Measure 3.14-1o, p. 3.14-61) and the Project may participate in the funding of the improvement, if constructed by other projects. Project participation in, or completion of, if not constructed by others, the improvement shall occur prior to construction of the 541st DUE. A single-family residential (non-age-restricted) unit is calculated as 1.0 DUE, a multifamily residential unit is calculated as 0.616 DUE, and an active adult residential unit is calculated as 0.37 DUE. Project participation may include Project construction of the improvement subject to reimbursement of the fair-share of any other projects conditioned or otherwise required to construct or fund the improvement or Project payment of the Project's fair-share of the improvement if constructed by others.*	City of Rancho Cordova Planning Department City of Rancho Cordova Planning Department	Prior to approval of Project Improvement Plans Prior to approval of Project Improvement Plans	
Impact 3.13-2: Under Cumulative (2040) Plus Project conditions, Project may conflict with an applicable program, plan, ordinance or policy addressing the circulation system – Roadway Segments and Intersections	***Mitigation Measure 3.13-6:*** *Intersection #10, Douglas Road at Zinfandel Drive: The Project shall pay its fair-share for the westbound right turn to be converted from permitted to a free right turn with a receiving lane. The Project's fair share of the improvement is 10.61 percent.* ***Mitigation Measure 3.13-7:*** *Intersection #27, White Rock Road at Prairie City Road: A second southbound right-turn lane shall be added at this intersection, and a right-turn overlap signal phase shall be added for the southbound right-turn. The Project's fair share of the improvement is 4.77 percent.*	City of Rancho Cordova Planning Department City of Rancho Cordova Planning Department	Prior to approval of Project Improvement Plans Prior to approval of Project Improvement Plans	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	Mitigation Measure 3.13-8: *Roadway Segment #9, Douglas Road between Mather Boulevard and Sunrise Boulevard: The Project shall pay its fair-share for the widening of Douglas Boulevard to six lanes. The Project's fair share of the improvement is 10.05 percent.*	City of Rancho Cordova Planning Department	Prior to approval of Project Improvement Plans	
	Mitigation Measure 3.13-9: *Rancho Cordova Parkway shall be widened from two to four lanes along the project extents. The improvement shall be reflected on the Project's improvement plans. The improvement shall be completed before the 570th market rate single family detached unit and the 566th age-restricted senior unit (or the number of units generating an equivalent amount of trips) is constructed.*	City of Rancho Cordova Planning Department	Prior to approval of Project Improvement Plans	

DRAFT

ENVIRONMENTAL IMPACT REPORT

FOR

THE RANCH PROJECT

(SCH: 2018072011)

AUGUST 2019

Prepared for:

City of Rancho Cordova
2729 Prospect Park Drive
Rancho Cordova, CA 95670
(916) 851-8700

Prepared by:

De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762
(916) 580-9818

De Novo Planning Group

A Land Use Planning, Design, and Environmental Firm

DRAFT
ENVIRONMENTAL IMPACT REPORT

FOR

THE RANCH PROJECT
(SCH: 2018072011)

AUGUST 2019

Prepared for:

City of Rancho Cordova
2729 Prospect Park Drive
Rancho Cordova, CA 95670
(916) 851-8700

Prepared by:

De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762
(916) 580-9818

DRAFT EIR

Chapter **Page Number**

Executive Summary ES-1

1.0 Introduction 1.0-1

1.1 Purpose and Intended Uses of the EIR 1.0-1

1.2 Type of EIR 1.0-2

1.3 CEQA Streamlining 1.0-2

1.4 Known Responsible and Trustee Agencies 1.0-8

1.5 Environmental Review Process 1.0-9

1.6 Organization and Scope 1.0-10

1.7 Significance Criteria 1.0-12

1.8 Comments Received on the Notice of Preparation 1.0-13

1.9 Areas of Controversy 1.0-14

2.0 Project Description 2.0-1

2.1 Project Location and Environmental Setting 2.0-1

2.2 Project Background 2.0-2

2.3 Project Goals, Objectives, and Entitlement Requests 2.0-2

2.4 Project Description 2.0-4

3.1 Aesthetics and Visual Resources 3.1-1

3.1.1 Environmental Setting 3.1-1

3.1.2 Regulatory Setting 3.1-3

3.1.3 Impacts and Mitigation Measures 3.1-6

3.2 Air Quality 3.2-1

3.2.1 Environmental Setting 3.2-1

3.2.2 Regulatory Setting 3.2-11

3.2.3 Impacts and Mitigation Measures 3.2-21

3.3 Biological Resources 3.3-1

3.3.1 Environmental Setting 3.3-1

3.3.2 Regulatory Setting 3.3-11

3.3.3 Impacts and Mitigation Measures 3.3-21

TABLE OF CONTENTS

3.4 Cultural and Tribal Resources 3.4-1
3.4.1 Environmental Setting 3.4-1
3.4.2 Regulatory Setting 3.4-10
3.4.3 Impacts and Mitigation Measures 3.4-13
3.5 Geology and Soils 3.5-1
3.5.1 Environmental Setting 3.5-1
3.5.2 Regulatory Setting 3.5-9
3.5.3 Impacts and Mitigation Measures 3.5-13
3.6 Greenhouse Gases, Climate Change, and Energy 3.6-1
3.6.1 Environmental Setting 3.6-1
3.6.2 Regulatory Setting 3.6-7
3.6.3 Impacts and Mitigation Measures 3.6-19
3.7 Hazards and Hazardous Materials 3.7-1
3.7.1 Environmental Setting 3.7-1
3.7.2 Regulatory Setting 3.7-10
3.7.3 Impacts and Mitigation Measures 3.7-16
3.8 Hydrology and Water Quality 3.8-1
3.8.1 Environmental Setting 3.8-1
3.8.2 Regulatory Setting 3.8-9
3.8.3 Impacts and Mitigation Measures 3.8-16
3.9 Land Use 3.9-1
3.9.1 Environmental Setting 3.9-1
3.9.2 Regulatory Setting 3.9-2
3.9.3 Impacts and Mitigation Measures 3.9-11
3.10 Noise and Vibration 3.10-1
3.10.1 Environmental Setting 3.10-1
3.10.2 Regulatory Setting 3.10-6
3.10.3 Impacts and Mitigation Measures 3.10-10

3.11 Population and Housing 3.11-1
3.11.1 Environmental Setting 3.11-1
3.11.2 Regulatory Setting 3.11-2
3.11.3 Impacts and Mitigation Measures 3.11-5
3.12 Public Services and Recreation 3.12-1
3.12.1 Environmental Setting 3.12-1
3.12.2 Regulatory Setting 3.12-9
3.12.3 Impacts and Mitigation Measures 3.12-12
3.13 Transportation and Circulation 3.13-1
3.13.1 Environmental Setting 3.13-3
3.13.2 Regulatory Setting 3.13-9
3.13.3 Impacts and Mitigation Measures 3.13-13
3.14 Utilities 3.14-1
3.14.1 Wastewater Services 3.14-1
3.14.2 Water Supplies 3.14-8
3.14.3 Solid Waste 3.14-20
4.0 Other CEQA-Required Topics 4.0-1
4.1 Cumulative Setting and Impact Analysis 4.0-1
4.2 Growth-Inducing Effects 4.0-11
4.3 Significant Irreversible Effects 4.0-12
4.4 Significant and Unavoidable Impacts 4.0-13
5.0 Alternatives to the Proposed Project 5.0-1
5.1 CEQA Requirements 5.0-1
5.2 Alternatives Considered in this EIR 5.0-4
5.3 Environmental Analysis 5.0-7
5.4 Comparative Evaluation of the Project and Alternatives to Satisfy Project Objectives 5.0-21
6.0 Report Preparers 6.0-1
7.0 References 7.0-1

TABLE OF CONTENTS

Table **Page Number**

Table ES-1: Comparison of Proposed Project Characteristics to the Alternatives..... ES-3
Table ES-2: Comparison of Alternative Project Impacts to the Proposed Project..... ES-4
Table ES-3: Project Impacts and Proposed Mitigation Measures..... ES-5
Table 2.0-1: Land Use Summary 2.0-5
Table 2.0-2: General Plan Land Use Designations 2.0-11
Table 3.2-1: Federal and State Ambient Air Quality Standards 3.2-9
Table 3.2-2: State and National Attainment Status (Sacramento County).....3.2-10
Table 3.2-3: Sacramento County Ambient Air Quality Monitoring Data Summary – Ozone...3.2-11
Table 3.2-4: Sacramento County Ambient Air Quality Monitoring Data Summary – $PM_{2.5}$ 3.2-11
Table 3.2-5: SVAB Ambient Air Quality Monitoring Data Summary – PM_{10} 3.2-11
Table 3.2-6: Thresholds of Significance for Criteria Pollutants of Concern 3.2-22
Table 3.2-7: Project Operational Emissions (Unmitigated Scenario) (Tons/Year) – Annual 3.2-31
Table 3.2-8: Project Operational Emissions (Unmitigated Scenario) (Pounds/Day) – Summer 3.2-31
Table 3.2-9: Project Operational Emissions (Unmitigated Scenario) (Pounds/Day) – Winter.....3.2-32
Table 3.2-10: Summary of Maximum Construction Daily and Annual Emissions.....3.2-35
Table 3.2-11: CARB Minimum Separation Recommendations on Siting Sensitive Land Uses. 3.2-41
Table 3.3-1: Special-Status Plants within 9-Quadrangle Region for Project Site.....3.3-5
Table 3.3-2: Special-Status Animals within 9-Quadrangle Region for Project Site.....3.3-8
Table 3.3-3: SSHCP EIS/EIR Impacts of SSHCP Proposed Action/Proposed Project.....3.3-26
Table 3.3-4: Aquatic Resources Within the Project Site 3.3-67
Table 3.3-5: Impacts to Biological Communities.....3.3-68
Table 3.5-1: Project Site Soils.....3.5-2
Table 3.5-2: Fault Activity Rating 3.5-5
Table 3.5-3: Modified Mercalli Intensity Scale for Earthquakes.....3.5-6
Table 3.6-1: Recommended Land Use Operational Thresholds of Significance (Metric Tons) 3.6-21
Table 3.6-2: Summary of Construction-Related Greenhouse Gas Emissions (Metric Tons/Year) 3.6-23
Table 3.6-3: Summary of Construction-Related Greenhouse Gas Emissions (Metric Tons/Year) in Years with Concurrent Phases 3.6-24
Table 3.6-4: Unmitigated Operational GHG Emissions at Project Buildout

(Metric Tons/Year) 3.6-27
Table 3.6-5: Unmitigated Operational GHG Emissions at Project Buildout
(Metric Tons/Year) 3.6-28
Table 3.6-6: Unmitigated Operational GHG Emissions at Project Buildout
(Metric Tons/Year) 3.6-28
Table 3.6-7: Unmitigated Operational GHG Emissions at Project Buildout
(Metric Tons/Year) 3.6-29
Table 3.6-8: Project Operational Natural Gas and Electricity Usage
(Unmitigated Scenario) 3.6-38
Table 3.6-9: On-Road Mobile Fuel Generated by Project Construction Activities –
by Phase 3.6-39
Table 3.7-1: GeoTracker Known Hazardous Material Release Sites within 1 Mile 3.7-5
Table 3.8-1: State of California Watershed Hierarchy Naming Convention 3.8-2
Table 3.8-2: Summary of Existing Conditions Subsheds 3.8-4
Table 3.8-3: Soil Hydrologic Rating 3.8-21
Table 3.8-4: Pre-Project and Post-Project Peak Flow Conditions (2-, 10-, and 100-Year Storm
Events) 3.8-24
Table 3.10-1: Typical Noise Levels 3.10-3
Table 3.10-2: Summary of Existing Background Noise Measurement Data 3.10-4
Table 3.10-3: Existing Traffic Noise Levels 3.10-6
Table 3.10-4: Significance of Changes in Noise Exposure 3.10-11
Table 3.10-5: Effects of Vibration on People and Buildings 3.10-12
Table 3.10-6: Existing and Existing Plus Project Traffic Noise Levels 3.10-13
Table 3.10-7: Cumulative and Cumulative + Project Traffic Noise Levels 3.10-14
Table 3.10-8: Cumulative + Project Transportation Noise Levels at Proposed
Residential Uses 3.10-16
Table 3.10-9: Construction Equipment Noise 3.10-19
Table 3.10-10: Vibration Levels for Varying Construction Equipment 3.10-21
Table 3.11-1: Population Growth – Rancho Cordova 3.11-1
Table 3.11-2: Housing Unit Growth – Rancho Cordova 3.11-2
Table 3.12-1: Elk Grove Unified School District: School Inventory and 2016/2017
Enrollment 3.12-5
Table 3.12-2: Existing Cordova Recreation & Park District Facilities 3.12-6
Table 3.12-3: Elk Grove Unified School District Student Generation
(Non-Age-Restricted Units) 3.12-15

TABLE OF CONTENTS

Table 3.13-1: Intersection LOS Criteria 3.13-2
Table 3.13-2: Roadway Segment LOS Criteria 3.13-2
Table 3.13-3: Existing (2017) Intersection LOS 3.13-8
Table 3.13-4: Existing (2017) Roadway Segment LOS 3.13-9
Table 3.13-5: Proposed Project Trip Generation 3.13-15
Table 3.13-6: Existing (2017) Plus Project Intersection LOS 3.13-17
Table 3.13-7: Intersection LOS – Existing (2017) Plus Project Mitigated Condition 3.13-19
Table 3.13-8: Existing (2017) Plus Project Roadway Segment LOS 3.13-21
Table 3.13-9: Cumulative (2040) Baseline and Plus Project Intersection LOS 3.13-24
Table 3.13-10: Intersection LOS – Cumulative (2040) Plus Project Mitigated Condition 3.13-26
Table 3.13-11: Cumulative (2040) Plus Project Roadway Segment LOS 3.13-30
Table 3.14-1: Historical Groundwater Pumping 2011-2015 ..... 3.14-11
Table 3.14-2: Multiple Dry Years Supply and Demand Comparison in Five-Year Increments (AFY) 3.14-12
Table 3.14-3: Proposed Land Use and Water Demands Estimate for the Project 3.14-17
Table 5.0-1: Comparison of Project Characteristics to the Alternatives 5.0-6
Table 5.0-2: Comparison of Project Trips to the Alternatives 5.0-6
Table 5.0-3: Comparison of Alternative Project Impacts to the Proposed Project 5.0-21

Figures

Note: Figures are located at the end of the chapters.

Figure 2.0-1 Regional Location Map
Figure 2.0-2 Project Vicinity Map
Figure 2.0-3 Aerial View of Project Site
Figure 2.0-4 Tentative Subdivision Map
Figure 2.0-5 Existing and Proposed Zoning
Figure 2.0-6 Existing and Proposed General Plan
Figure 3.3-1 Cover Types
Figure 3.3-2 California Natural Diversity Database 9-Quad Search
Figure 3.3-3 Biological Communities and Aquatic Resources
Figure 3.3-4 Impacts to Biological Communities and Aquatic Resources
Figure 3.5-1 Project Site Soils
Figure 3.5-2 Known Faults in the Project Area
Figure 3.5-3 Shrink-Swell Potential of Soils

Figure 3.8-1 Watersheds
Figure 3.10-1 Noise Measurement Sites
Figure 3.10-2 General Plan Table N-1: City Noise Standards – Noise Level Performance Standards for New Projects Affected by or Including Non-Transportation Noise Sources
Figure 3.10-3 General Plan Table N-2: Maximum Transportation Noise Exposure
Figure 3.13-1 Existing (2017) Project Vicinity Map
Figure 3.13-2 Existing (2017) Study Intersections, Traffic Control, and Lane Geometries
Figure 3.13-3 Existing (2017) Peak Hour Traffic Volumes
Figure 3.13-4 Existing (2017) Project Trip Distribution
Figure 3.13-5 Existing (2017) Project Trip Assignment
Figure 3.13-6 Existing (2017) Plus Proposed Project Peak Hour Traffic Volumes
Figure 3.13-7 Cumulative (2040) Study Intersections, Interchanges, and Count Locations
Figure 3.13-8a Cumulative (2040) Study Intersections, Traffic Control, and Lane Geometries
Figure 3.13-8b Cumulative (2040) Study Intersections, Traffic Control, and Lane Geometries (Continued)
Figure 3.13-9a Cumulative (2040) Peak Hour Traffic Volumes
Figure 3.13-9b Cumulative (2040) Peak Hour Traffic Volumes (Continued)
Figure 3.13-10 Cumulative (2040) Project Trip Distribution
Figure 3.13-11a Cumulative (2040) Project Trip Assignment
Figure 3.13-11b Cumulative (2040) Project Trip Assignment (Continued)
Figure 3.13-12a Cumulative (2040) Plus Project Traffic Volumes
Figure 3.13-12b Cumulative (2040) Plus Project Traffic Volumes (Continued)

TABLE OF CONTENTS

Appendices

Appendix A: Initial Study, Notice of Preparation, and NOP Comments

Appendix B: Air Quality, Greenhouse Gas, and Energy Appendices

Appendix B.1: CalEEMod Outputs

Appendix B.2: Energy Outputs

Appendix B.3: Determination of MTP/SCS Consistency Worksheet

Appendix B.4: Analysis of Models and Tools to Correlate Project-Generated Criteria Pollutant Emissions to Health End Points

Appendix C: Biological Resources Appendices

Appendix C.1: Aquatic Resources Delineation Report

Appendix C.2: Biological Resources Assessment

Appendix C.3: Special-Status Plant Survey

Appendix D: Cultural Resources Appendices

Appendix D.1: Determination of Eligibility and Effect

Appendix D.2: The Ranch Updated Cultural Resources Inventory and Evaluation, Rancho Cordova, Sacramento County, California

Appendix E: Preliminary Geotechnical Engineering Report

Appendix F: Phase I Environmental Site Assessment

Appendix G: The Ranch Project Consistency with Rancho Cordova General Plan Policies

Appendix H: Environmental Noise Assessment

Appendix I: Transportation Appendices

Appendix I.1: Traffic Impact Analysis

Appendix I.2: Memorandum RE: Jaeger Ranch Traffic Impact Study, Draft Other Considerations

Appendix I.3: Memorandum RE: Jaeger Ranch Supplemental Traffic Analyses, Draft Traffic Impact Analysis Services

Appendix I.4: Memorandum RE: Jaeger Ranch Supplemental Traffic Analyses, Draft Trip Distribution

Appendix J: Utilities Appendices

Appendix J.1: Drainage Study

Appendix J.2: Level 1 Sewer Study

Appendix J.3: Level 2 Sewer Study

Appendix J.4: Water Supply Assessment

INTRODUCTION

The City of Rancho Cordova (City) has determined that a project-level environmental impact report (EIR) is required for the The Ranch project (Project) pursuant to the requirements of the California Environmental Quality Act (CEQA).

This EIR is a Project EIR as defined in Section 15161 of the State CEQA Guidelines. A Project EIR is an EIR which examines the environmental impacts of a specific development project. This type of EIR should focus primarily on the changes in the environment that would result from the development Project. The EIR shall examine all phases of the Project including planning, construction and operation. The Project EIR approach is appropriate for The Ranch Project because it allows comprehensive consideration of the reasonably anticipated scope of the Project, as described in greater detail in Chapter 2.0.

PROJECT DESCRIPTION

The following provides a brief summary and overview of the Project. Chapter 2.0 of this EIR includes a detailed description of the Project, including maps and graphics. The reader is referred to Chapter 2.0 for a more complete and thorough description of the components of the Project.

The Project site consists of approximately 530 acres located in the City of Rancho Cordova city limits. The Project site is bound by existing single-family residential uses and Douglas Road to the north, vacant land and Grant Line Road to the east, vacant land and Kiefer Boulevard to the south, and Rancho Cordova Parkway, single family residential, and vacant land on the west.

The Project site is currently vacant and has been previously used for agricultural uses (cattle grazing). The topography of the site exhibits low relief topography with elevations ranging between 170 and 210 feet above mean sea level (MSL). The slopes throughout the site range from approximately zero to eight percent. The site is characterized by moderate rolling hills and areas of extensive flatlands, with wetlands, vernal pools, and seasonal drainage courses scattered throughout the site. A headwater tributary of Morrison Creek traverses the Project site, entering at the northeast corner and flowing generally to the southwest. A total of 21.53 acres of jurisdictional aquatic resources have been mapped with the Project site, including: 2.92 acres of depressional seasonal wetlands, 15.04 acres of vernal pools, 1.66 acres of riverine seasonal wetlands, 0.06 acres of riverine seasonal wet swales, 1.54 acres of intermittent drainages, and 0.30 acres of drainage basin outfalls.

The Project includes development of: 1,725 residential units, including 737 age restricted single-family units, 735 non-age restricted single-family units, and up to 253 multifamily units, 38 of which would be age-restricted multifamily units, with a club house for the age-restricted senior community, and other recreational opportunities; dedication of 5.16 net acres for commercial use; and dedication of 8.43 net acres for multi-family residential uses in accordance with the City of Rancho Cordova's Affordable Housing Plan. The Project would also preserve approximately 199.5 acres as a nature preserve that would be deeded to a third-party conservation entity.

On-site infrastructure associated with the Project would include the construction of internal and external access roads and a network of bicycle and pedestrian trails. Primary access would be from Rancho Cordova Parkway. The Project would provide for future connections to an extension of Chrysanthy Boulevard east of the Project site.

The Project site is currently designated Planning Area in the City's General Plan. The Project would require a City of Rancho Cordova General Plan Amendment to the Land Use Element to change land uses on the Project site. Changes to the Land Use Element would include changing the entire Project site from Planning Area to Low Density Residential, Medium Density Residential, High Density Residential, Commercial, Parks/Open Space, and Natural Resources. The Project would also include a rezone to Special Planning Area (SPA).

Refer to Chapter 2.0, Project Description, for a more complete description of the details of the Project.

AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

This Draft EIR addresses environmental impacts associated with the Project that are known to the City of Rancho Cordova, were raised during the Notice of Preparation (NOP) process, or raised during preparation of the Draft EIR. This Draft EIR discusses potentially significant impacts associated with aesthetics, air quality, biological resources, cultural and tribal resources, geology and soils, greenhouse gases and climate change, hazards and hazardous materials, hydrology and water quality, land use, noise, population and housing, public services and recreation, transportation/circulation, and utilities.

The City received seven comments on the NOP for the Project Draft EIR. A copy of each letter is provided in Appendix A of this Draft EIR. A public scoping meeting was held on July 26, 2018 to present the Project description to the public and interested agencies, and to receive comments from the public and interested agencies regarding the scope of the environmental analysis to be included in the Draft EIR.

Aspects of the Project that could be of public concern include the following:

- The size of the Project and the associated potential impacts related to air quality emission levels, without mitigation;
- The proposed park areas and the potential impacts related to the transmission lines, irrigation, operational noise, transportation facilities, and light and glare;
- The proposed uses which would lie beneath the on-site transmission lines;
- Concerns regarding the Project's traffic-related impacts to Sacramento County facilities;
- Concerns regarding the amount of park land provided.

ALTERNATIVES TO THE PROJECT

Section 15126.6 of the CEQA Guidelines requires an EIR to describe a reasonable range of alternatives to the project or to the location of the project which would reduce or avoid significant impacts, and which could feasibly accomplish the basic objectives of the Project. The alternatives analyzed in this EIR include the following three alternatives in addition to the Project:

- No Project Alternative
- Reduced Project Alternative #1
- Reduced Project Alternative #2

Alternatives are described in detail in Section 5.0, Alternatives to the Project, and are summarized in Table ES-1 below.

TABLE ES-1: COMPARISON OF PROJECT CHARACTERISTICS TO THE ALTERNATIVES

COMPONENT	*PROJECT*	*NO PROJECT ALTERNATIVE*	*REDUCED DENSITY ALTERNATIVE #1*	*REDUCED DENSITY ALTERNATIVE #2*
Single Family, Non-Age-Restricted (Units)	735	1,124	637	477
Single Family, Senior Age-Restricted (Units)	737	1,000	643	693
Multifamily, Non-Age-Restricted (Units)	215	400	268	268
Multifamily, Senior Age-Restricted (Units)	38	100	50	50
Subtotal Dwelling Units	*1,1,725*	*2,624*	*1,598*	*1,488*
Senior Community Clubhouse (square feet)	27,000	27,000	27,000	27,000
Commercial Parcels (acres)	5.16	5.08	5.08	5.08
Parks and Recreation (acres)	19.24	19.24	19.24	19.24
Nature Preserve (acres)	199.5	136.8	212.0	221.1

A comparative analysis of the Project and each of the Project alternatives is provided in Table ES-2. The table includes a numerical scoring system, which assigns a score of "2," "3," or "4" to the Project and each of the alternatives with respect to how each alternative compares to the Project in terms of the severity of the environmental topics addressed in this EIR. A score of "2" indicates that the alternative would have a better (or lessened) impact when compared to the Project. A score of "3" indicates that the alternative would have the same (or equal) level of impact when compared to the proposed Project. A score of "4" indicates that the alternative would have a worse (or greater) impact when compared to the Project. The Project alternative with the lowest total score is considered the environmentally superior alternative.

TABLE ES-2: COMPARISON OF ALTERNATIVE PROJECT IMPACTS TO THE PROJECT

ENVIRONMENTAL ISSUE	*PROJECT*	*NO PROJECT ALTERNATIVE*	*REDUCED PROJECT ALTERNATIVE #1*	*REDUCED PROJECT ALTERNATIVE #2*
Aesthetics and Visual Resources	3 – Same	4 - Greater	2 – Less	2 – Less
Air Quality	3 – Same	4 – Greater	2 – Less	2 – Less
Biological Resources	3 – Same	4 - Greater	2 – Less	2 - Less
Cultural and Tribal Resources	3 – Same	3 – Same	3 – Same	3 – Same
Geology and Soils	3 – Same	3 - Same	3 - Same	3 - Same
Greenhouse Gas, Climate Change, and Energy	3 – Same	4 – Greater	4 – Greater	4 - Greater
Hazards and Hazardous Materials	3 – Same	3 – Same	3 – Same	3 – Same
Hydrology and Water Quality	3 – Same	3 – Same	3 – Same	3 – Same
Land Use	3 – Same	3 – Same	3 – Same	3 – Same
Noise and Vibration	3 – Same	4 – Greater	2 – Less	2 – Less
Population and Housing	3 – Same	3 - Same	2 – Less	2 – Less
Public Services and Recreation	3 – Same	4 – Greater	3 – Same	3 - Same
Transportation and Circulation	3 – Same	4 – Greater	2 – Less	2 – Less
Utilities	3 – Same	3 - Same	2 – Less	2 – Less
Summary	**42**	**49**	**35**	**36**

As shown in Table ES-2, the No Project Alternative would result in 49 points, Reduced Project Alternative #1 would result in 35 points, and Reduced Project Alternative #2 would result in 36 points. However, because Reduced Project Alternative #2 would reduce the extent of development, including the acreage and number of residential units and associated population, more than Reduced Project Alternative #1, impacts of Reduced Project Alternative #2 associated with air quality, noise, and traffic would be reduced more than Reduced Project Alternative #1. Therefore, Reduced Project Alternative #2 is the next environmentally superior alternative to the Project. It is noted that the superior alternative would depend on the City's local priorities (i.e., traffic impacts to the regional roadway system, maintenance of public services and utilities services, etc.), as well as the ability to meet the Project's objectives. It is noted, however, that this alternative would not eliminate the significant and unavoidable impact related to aesthetics that would occur under the Project.

SUMMARY OF IMPACTS AND MITIGATION MEASURES

The environmental impacts of the Project, the impact level of significance prior to mitigation, the proposed mitigation measures and/or adopted policies and standard measures that are already in place to mitigate an impact, and the impact level of significance after mitigation are summarized in Table ES-3.

TABLE ES-3: PROJECT IMPACTS AND PROPOSED MITIGATION MEASURES

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
AESTHETICS AND VISUAL RESOURCES			
Impact 3.1-1: Project implementation would result in substantial adverse effects on scenic vistas and resources or substantial degradation of visual character	PS	None feasible.	SU
Impact 3.1-2: Project implementation would not result in substantial light or glare which would adversely affect day or nighttime views in the area	LS	None required.	--
AIR QUALITY			
Impact 3.2-1: The Project has the potential to conflict with or obstruct implementation of the applicable air quality plan or to result in a cumulatively considerable net increase in criteria pollutants for which the region is in non-attainment	LS	None required.	--
Impact 3.2-2: The Project has the potential to generate carbon monoxide hotspot impacts as a result of increased traffic congestion that would exceed the applicable ambient air quality standards	LS	None required.	--
Impact 3.2-3: The Project has the potential for expose sensitive receptors to substantial toxic air contaminants	LS	None required.	--
Impact 3.2-4: The Project has the potential to result in other emissions (such as those leading to odors) that would adversely affect a substantial number of people	LS	None required.	--

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
BIOLOGICAL RESOURCES			
Impact 3.3-1: The Project has the potential to, directly or indirectly, have a substantial adverse effect through habitat modifications or reductions, cause populations to drop below self-sustaining levels, substantially eliminate a community, or substantially reduce the number of, or restrict the range of, an endangered, rare or threatened species, including those considered candidate, sensitive, or special-status, in local or regional plans, policies, regulations, or by the CDFW or USFWS - Invertebrates	PS	***Mitigation Measure 3.3-1:*** *Prior to any ground disturbing activities, the Project proponent shall submit a South Sacramento Habitat Conservation Plan (SSHCP) permit application package to the City of Rancho Cordova ("Land Use Authority Permittee") as a request that the incidental take coverage provided by City's SSHCP Incidental Take Permit (ITP) be extended to the proposed activities. The City of Rancho Cordova shall review the SSHCP permit application for consistency with all of the SSHCP requirements and provide the South Sacramento Conservation Agency ("Implementing Entity) with a copy of the SSHCP requirements for tracking purposes. The Project proponent shall be responsible for paying all SSHCP development fees associated with obtaining coverage from the City of Rancho Cordova. Any proposal to provide land in fee title or provide a conservation easement in lieu of paying all or part of the required SSHCP development fees, shall include a consistency analysis in the application that sufficiently shows that the proposal is consistency with the SSHCP Conservation Strategy.* ***Mitigation Measure 3.3-2:*** *The Project proponent shall implement the following SSHCP Avoidance and Minimization Measures (AMMs) to the satisfaction of the City to avoid direct and indirect effects of Covered Activities on Covered Species:* • *AMM SPECIES-1 (Litter Removal Program): A litter control program shall be instituted for the entire Project site. All workers shall ensure that their food scraps, paper wrappers, food containers, cans, bottles, and other trash are deposited in covered or closed trash containers. All garbage shall be removed from the Project site at the end of each work day, and construction personnel shall not feed or otherwise attract wildlife to the area where construction activities are taking place.* • *AMM SPECIES-2 (No Pets in Construction Areas): To avoid harm and harassment of native species, workers and visitors shall not bring pets onto a Project site.* • *AMM SPECIES-3 (Take Report): If accidental injury or death of any Covered Species occurs, workers shall immediately inform the approved biologist or on-site monitor and site supervisor. The approved biologist or on-site monitor shall phone the appropriate contact person at the Implementing Entity (i.e., the South Sacramento Conservation Agency). The Implementing Entity shall immediately contact the Wildlife Agencies (i.e., the USFWS and CDFW) by*	LS

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		telephone. A memorandum shall be provided to the Implementing Entity and Wildlife Agencies within 1 working day of the incident. The report shall provide the date and location of the incident, number of individuals taken, the circumstances resulting in the take, and any corrective measures taken to prevent additional take. • *AMM SPECIES-4 (Post-Construction Compliance Report): A post-construction compliance report shall be submitted to the SSHCP Implementing Entity within 30 calendar days of completion of construction activities or within 30 calendar days of any break in construction activity that lasts more than 30 days. The report shall detail the construction start and completion dates, any information about meeting or failing to meet species take AMMs, effectiveness of each AMM that was applied at the Project site, and any known Project effects to Covered Species.* • *AMM LID-1 (Stormwater Quality): When the size of a Covered Activity Project exceeds the thresholds established by the State Water Resources Control Board (SWRCB) (see the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions, or future SWRCB-approved design manuals applicable to the Plan Area), incorporate stormwater management into site design to satisfy the requirements outlined in the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions. Stormwater management may include groundwater recharge (LID-2) and natural site features (LID-3).* • *AMM LID-3 (Natural Site Features): Incorporate preservation of a site's natural aquatic features (such as creeks and streams) into Project design to retain natural hydrologic patterns and to retain habitat that might be used by Covered Species.* • *AMM EDGE-1 (Compatible Land Uses): To the maximum extent practicable, development Project Covered Activities will locate compatible land uses (e.g., designated open space such as parks and ball fields, detention basins, and other land uses with less-intensive human activity) in areas immediately adjacent to existing or planned Preserve boundaries. The compatible land use will provide additional buffering of Preserves from potential indirect effects of adjacent urban development. The soil surfaces in a compatible land use area may be re-contoured provided that the soil restrictive layer remains*	

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		undamaged and most of the soil profile above the restrictive layer remains intact. The Land Use Authority will determine when it is not practicable to locate a compatible land use adjacent to existing or planned Preserve boundaries. • *AMM EDGE-2 (Single-Loaded Streets): To the maximum extent practicable, the design of Urban Development Covered Activities will locate single-loaded streets adjacent to existing or planned Preserve. The Land Use Authority will determine when single-loaded streets are not practicable.* • *AMM EDGE-3 (Preserve Setbacks): Urban Development Covered Activities constructed adjacent to existing or planned Preserves must establish a minimum 50-foot-wide setback outward from the boundary of any existing Preserve or planned SSHCP Preserve. This minimum 50-foot-wide setback will function as a transition between Urban Development and the Preserve, and must be managed to maintain the natural community of vegetation present in the adjacent Preserve. As much of the setback as possible should remain in the same natural habitat as the Preserve.* *However, as discussed in Section 5.2.5, Covered Activities in Preserve Setbacks in the UDA, where an existing or planned Preserve is adjacent to an existing roadway (e.g., collectors, arterials, thoroughfares), the 50-foot Preserve Setback will not be required, and any bicycle or pedestrian trail will be established in the road right-of-way. In addition, where a planned roadway crosses an existing or planned Preserve, no Preserve Setback will be required, and any bicycle or pedestrian trail will be established in the road right-of-way.* • *AMM EDGE-4 (Locate Stormwater Control Outside Preserves): Roads, sidewalks, and other impermeable surfaces of Urban Development Covered Activities adjacent to existing or planned Preserves will slope away from Preserves and Preserve Setbacks or intercept drainage with swales or curbs and gutters to preclude drainage from entering Preserves and Preserve Setbacks. Stormwater flows must be directed away from Preserves and Preserve Setbacks and directed into stormwater control facilities inside the development (outside Preserves and Preserve Setbacks) (see EDGE-6 for exception to EDGE-4 in certain SSHCP Linkage Preserves).* • *AMM EDGE-5 (Stormwater Control in Preserve Setbacks): If trails are established in any Preserve Setback in compliance with EDGE-3, the trail must*	

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		be sloped away from the Preserve, and rainwater leaving the trail surface must flow into an adjacent low-velocity bio-retention swale or cell to keep rainwater runoff and trail contaminants from entering the Preserve. Low-velocity bio-retention swales or cells are typically small linear features placed on one or both sides of a trail. As required by EDGE-3, trails and their adjacent bio-retention swales or cells must be located on the side of the Preserve Setback nearest development. • *AMM EDGE-7 (Hardpan/Duripan Protection): To protect the soil perched aquifer and the micro-watersheds supporting existing vernal pool hydrology, activities that have the potential to cut into, disrupt, or remove the soil's restrictive layer (hardpan or duripan) will not occur within Preserves or Preserve Setbacks. However, in certain circumstances, the Covered Activities defined in Section 5.2.6, Covered Activities in Stream Setbacks in the UDA, and Section 5.2.8, Covered Activities in the Laguna Creek Wildlife Corridor of the Preserve System, may result in punctures or other minor disruptions of the soil hardpan or duripan if approved by the Implementing Entity and the Technical Advisory Committee according to the process described in Chapter 9 of the SSHCP. If a Covered Activity on a Preserve or Preserve Setback results in a puncture or other disruption to the soil hardpan or duripan, the puncture will be sealed using bentonite clay or other material that maintains the functionality of the soil's restrictive layer and associated perched aquifer.* • *AMM EDGE-10 (Prevent Invasive Species Spread): Completed Covered Activities (including roads) will be maintained in a manner that avoids the spread of invasive species into Preserve and Open Space areas. Such maintenance measures will include the following:* o *To prevent the transport of non-native invasive species onto Preserves, before bringing any equipment onto an SSHCP Preserve or Preserve Setback, equipment must be cleaned of mud, dirt, and plant material. Cleaning will occur in the infested area or another appropriate location as approved by a Plan Permittee.* o *Mowing rotation will start in un-infested areas and move to infested areas.* o *Invasive plant prevention techniques will be incorporated into maintenance plans.*	

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		o *The SSHCP Implementing Entity will survey road shoulders, ditches, and rights-of-way that border SSHCP Preserves for invasive weeds or other exotic plant species. Where roadside weed infestations have reached a critical control point, the Implementing Entity or Land Use Authority Permittee will apply the appropriate manual, mechanical, or chemical treatment.* • *AMM BMP-9 (Soil Compaction): After construction is complete, all temporarily disturbed areas will be restored similar to pre-Project conditions, including impacts relating to soil compaction, water infiltration capacity, and soil hydrologic characteristics.* • *AMM NATURE TRAIL-1 (Nature Trail Plan): A nature trail plan must be prepared for each Preserve where a trail is allowed by the Preserve Management Plan. Nature trails will be unpaved trails that vary in width depending on terrain and existing constraints, but will never exceed 4 feet in width. Where a trail crosses a swale, wooden walkways elevated to a height no greater than 2 feet will be installed. Trail improvements may include mowing vegetation to create or maintain a trail, minor grading to remove trip hazards, and signs providing directional and educational information. Public access to land acquired for preservation will be prohibited until a trail plan can be prepared by the Implementing Entity and approved by the Permitting Agencies. A trail plan will include the following:* o *Maps identifying areas that contain sensitive habitats or species occurrences.* o *Maps that show the location and footprint of proposed trails.* o *Methods used to control public access.* o *Trail and use monitoring methods, schedules, and responsibilities.* o *Trail operation and maintenance guidelines and responsibilities.* o *Clear triggers for use restrictions or closure based on sensitive biological indicators (e.g., seasonal closures of some trails on the basis of activity periods of Covered Species or sensitive species).* • *AMM NATURE TRAIL-2 (Nature Trail Protection of Duripan): Nature trails will be sited and constructed so as not to interfere with existing soil duripan and the perched aquifer that support the existing hydrologic regime of the Vernal*	

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		Pool–Grassland, and will not interfere with existing pool hydrology. Trails within Preserves will not be paved. • *AMM NATURE TRAIL-3 (Nature Trail Location): Nature trails will be located away from sensitive natural resources (e.g., vernal pools, riparian habitat, woodland habitat, Covered Species occurrences, raptor nesting sites, tricolored blackbird (Agelaius tricolor) colony sites). The Wildlife Agencies will determine the distance necessary to avoid impacts to sensitive natural resources.* • *AMM NATURE TRAIL-4 (Biological Studies Prior to Nature Trail Design): Biological studies will be conducted within the area being considered for nature trail construction prior to Project design. The studies will include land cover type mapping and focused species surveys and/or wetland delineations. The biological studies will include assessments of potential effects of trail construction on Preserve System resources, and recommendations for avoidance and minimization that may be incorporated into Project siting, design, construction, and operation.* • *AMM NATURE TRAIL-5 (Monitoring of Nature Trail Impacts): Impacts that could result from use of a nature trail within a Preserve will be monitored according to the Preserve Management Plan (Chapter 8) to ensure that uses do not conflict with the individual Preserve Management Plan. If use of a trail is found to conflict with the individual Preserve Management Plan, use of that trail will be discontinued until adjustments in the use can be made to reduce or eliminate conflicts. The Implementing Entity will make decisions about discontinuing or modifying use of a trail in consultation with the Preserve Manager or other applicable Preserve management agency or organization.* • *AMM ROAD-1 (Road Project Location): Road projects will be located in the least environmentally sensitive area to avoid, to the maximum extent practicable, impacts on Covered Species, Covered Species habitat, and waters of the United States. Road project alignments will follow existing roads, road easements, and rights-of-way, or be sited in disturbed areas to minimize habitat loss and additional habitat fragmentation.* • *AMM ROAD-3 (Roadside Pesticide Use): If pesticide use is necessary along roadsides, the appropriate SSHCP Permittee will ensure that the pesticide application strictly complies with the pesticide label and all other applicable federal, state, and local authorities pertaining to the use, safety, storage,*	

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		disposal, and reporting of the pesticide. Where roadside weed infestations have reached a critical control point, the Implementing Entity or a Land Use Authority Permittee will apply the appropriate manual, mechanical, or chemical treatment. In addition, the Implementing Entity or appropriate Land Use Authority Permittee will post signs along road shoulders adjacent to sensitive areas that are within the SSHCP Preserve System (e.g., California tiger salamander breeding ponds, endemic plant populations, vertebrates that rely on insects for part of their diet). The signs will identify pesticide use restrictions or other roadside maintenance restrictions. • *AMM RE-ESTABLISHMENT/ESTABLISHMENT-1 (Vernal Pool): Re-establish or establish Vernal Pool Wetland according to the following guidelines:* o *Re-establishment will always take priority over establishment of vernal pools. Establishment will be permitted only after it has been determined that sites with the potential to re-establish vernal pools no longer exist in the Plan Area or cannot be acquired through a willing seller/buyer agreement.* o *When possible, re-established or established sites will be located adjacent to an existing Preserve(s) to maximize connectivity and Preserve area.* o *Re-establishment or establishment will not result in direct or indirect adverse impacts to the hydrologic regime of existing vernal pools. Vernal pool re-establishment or establishment actions will not remove more than 10% of any existing vernal pool watershed, as defined by the SSHCP LIDAR analysis (see Section 3.3 and Conservation Action VPI1.2 in Table 7.1).* o *Vernal pool re-establishment will attempt to restore the historical density and range of vernal pool sizes to the maximum extent feasible using historical aerial photography of the site, if available. Where aerial photography of the site's historical conditions is not available, vernal pool re-establishment will include a range of pool sizes (area and depth) to accommodate the different habitat needs and life history characteristics of the vernal pool invertebrate Covered Species.* o *Established vernal pools must be located on sites with vernal pool*	

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		soils, defined as any Plan Area soil type where vernal pools currently exist. o *Established vernal pool sites will include a range of pool sizes to accommodate the different habitat needs and life history characteristics of the three vernal pool invertebrate Covered Species.* o *The total density of vernal pools will not exceed 10% of the suitable soil areas in any vernal pool re-establishment and/or establishment site, unless it can be shown that the suitable areas of that site historically supported greater densities.* o *Re-establishment or establishment may include inoculation when it is likely that no seed or cyst bank of vernal pool species remains at a site. Vernal Pool inocula will come from nearby vernal pools that are on the same geologic formation and soil type.* • *AMM UTILITY-2 (Utility Maintenance on Preserves): Utility maintenance inside SSHCP Preserves and SSHCP Preserve Setbacks containing vernal pools will occur only when vernal pools have been dry for 30 days, except in emergency situations related to human health and safety.* • *AMM UTILITY-3 (Trenchless Construction Methods): Where a pipeline or conduit crosses an existing or planned Preserve or will be located between adjacent Preserves (e.g., under a roadway that has a Preserve on both sides), trenchless construction methods will be used to minimize impacts to the existing soil profile (including impacts to a hardpan or duripan) to maintain the perched aquifer in Vernal Pool Grassland land cover type.* • *AMM UTILITY-4 (Siting of Entry and Exit Location): The entry and exit locations for the trenchless construction method (see Utility-3) will be sited to avoid impacts to vernal pools and Riparian Woodland, and to avoid direct take of SSHCP Covered Species.*	
Impact 3.3-2: The Project has the potential to, directly or indirectly, have a substantial adverse effect through habitat modifications or reductions, cause populations to drop below self-sustaining levels, substantially eliminate a community, or substantially	PS	***Mitigation Measure 3.3-3:*** *The Project proponent shall implement the following SSHCP AMMs to the satisfaction of the City to avoid direct and indirect effects of Covered Activities on western spadefoot (Spea hammondii):* • *AMM WS-1 (Western Spadefoot Work Window): Ground-disturbing Covered Activities shall occur outside the breeding and dispersal season (after May 15 and before October 15), to the maximum extent practicable.*	LS

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
reduce the number of, or restrict the range of, an endangered, rare or threatened species, including those considered candidate, sensitive, or special-status, in local or regional plans, policies, regulations, or by the CDFW or USFWS - Reptile and Amphibian		• *AMM WS-2 (Western Spadefoot Exclusion Fencing): If Covered Activities must be implemented after October 15 and before May 15, exclusion fencing shall be installed around the Project footprint before October 15, and the Project site must be monitored by an approved biologist following rain events. Temporary high visibility construction fencing shall be installed along the edge of work areas, and silt fencing shall be installed immediately behind the temporary high-visibility construction fencing to exclude western spadefoot from entering the construction area. Fencing shall remain in place until all construction activities within the construction area are completed. No Project activities shall occur outside the delineated Project footprint. If a western spadefoot is encountered. If a western spadefoot is encountered, refer to WS-6, below.* • *AMM WS-3 (Western Spadefoot Monitoring): If Covered Activities must be implemented in the breeding and dispersal season (after October 15 and before May 15), an approved biologist experienced with western spadefoot identification and behavior shall monitor the Project site, including the integrity of any exclusion fencing. The approved biologist shall be on site daily while construction related activities are taking place, and shall inspect the Project site daily for western spadefoot prior to construction activities. The approved biologist shall also train construction personnel on the required avoidance procedures, exclusion fencing, and protocols in the event that a western spadefoot enters an active construction zone (i.e., outside the buffer zone). If a western spadefoot is encountered, refer to WS-6, below.* • *AMM WS-4 (Avoid Western Spadefoot Entrapment): If a Covered Activity occurs in western spadefoot modeled habitat (Figure 3-17), all excavated steep-walled holes and trenches more than 6 inches deep shall be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes and trenches shall be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within western spadefoot modeled habitat shall be inspected for western spadefoot by the approved biologist prior to being moved. If a western spadefoot is encountered, refer to WS-6, below.*	

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		• *AMM WS-5 (Erosion Control Materials in Western Spadefoot Habitat): If erosion control is implemented within western spadefoot modeled habitat, non-entangling erosion control material shall be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material shall be used to ensure that western spadefoots are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.* • *AMM WS-6 (Western Spadefoot Encounter Protocol): If Covered Activities must be implemented during the breeding and dispersal season (after October 15 and before May 15), and a western spadefoot is encountered during construction activities, the approved biologist shall notify the Wildlife Agencies immediately. Construction activities shall be suspended in a 100-foot radius of the animal until the animal leaves the Project site on its own volition. If necessary, the approved biologist shall notify the Wildlife Agencies (i.e., the USFWS and CDFW) to determine the appropriate procedures related to relocation. If the animal is handled, a report shall be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the western spadefoot within 1 business day to the Wildlife Agencies. The biologist shall report any take of listed species to the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife immediately. Any worker who inadvertently injures or kills a western spadefoot or who finds dead, injured, or entrapped western spadefoot(s) must immediately report the incident to the approved biologist.*	
Impact 3.3-3: The Project has the potential to, directly or indirectly, have a substantial adverse effect through habitat modifications or reductions, cause populations to drop below self-sustaining levels, substantially eliminate a community, or substantially reduce the number of, or restrict the range of, an endangered, rare or threatened species, including those considered candidate, sensitive, or special-status, in local or regional plans, policies, regulations, or by the CDFW or	LS	None required.	--

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
USFWS - Fish			
Impact 3.3-4: The Project has the potential to, directly or indirectly, have a substantial adverse effect through habitat modifications or reductions, cause populations to drop below self-sustaining levels, substantially eliminate a community, or substantially reduce the number of, or restrict the range of, an endangered, rare or threatened species, including those considered candidate, sensitive, or special-status, in local or regional plans, policies, regulations, or by the CDFW or USFWS - Birds	PS	***Mitigation Measure 3.3-4:*** *The Project proponent shall implement the following SSHCP AMMs to the satisfaction of the City to avoid direct and indirect effects of Covered Activities on tricolored blackbird:* • *AMM TCB-1 (Tricolored Blackbird Surveys): If modeled habitat for tricolored blackbird is present within a Covered Activity's Project footprint or within 500 feet of a Project footprint, then an approved biologist shall conduct a field investigation to determine if existing or potential nesting or foraging sites are present within the Project footprint and adjacent areas within 500 feet of the Project footprint. Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. Within the Plan Area, potential tricolor blackbird nest sites are often associated with freshwater marsh and seasonal wetlands, or in thickets of willow, blackberry, wild rose, thistle, and other thorny vegetation. Tricolored blackbirds are also known to nest in crops associated with dairy farms. Foraging habitat is associated with annual grasslands, wet and dry vernal pools and other seasonal wetlands, agricultural fields (such as large tracts of alfalfa and pastures with continuous haying schedules and recently tilled fields), cattle feedlots, and dairies. The Third-Party Project Proponent shall map all existing or potential nesting or foraging sites and provide these maps to the Local Land Use Permittees (i.e., City of Rancho Cordova) and Implementing Entity (i.e., the South Sacramento Conservation Agency). Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 of the SSHCP for the process to conduct and submit survey information.* • *AMM TCB-2 (Tricolored Blackbird Pre-Construction Surveys): Pre-construction surveys shall be required to determine if active nests are present within a Project footprint or within 500 feet of a Project footprint if existing or potential nest sites were found during design surveys and construction activities shall occur during the breeding season (March 1 through September 15). An approved biologist shall conduct pre-construction surveys within 30 days and within 3 days of ground-disturbing activities, and within the proposed Project footprint and 500 feet of the proposed Project footprint to determine the presence of nesting tricolored blackbird. Pre-construction*	LS

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		surveys shall be conducted during the breeding season (March 1 through August 31). Surveys conducted in February (to meet pre-construction survey requirements for work starting in March) must be conducted within 14 days and 3 days in advance of ground-disturbing activities. If a nest is present, then TCB-3 and TCB-4 shall be implemented. The approved biologist shall inform the Land Use Authority Permittee and the Implementing Entity of species locations, and they in turn shall notify the Wildlife Agencies (i.e., the USFWS and CDFW). • *AMM TCB-3 (Tricolored Blackbird Nest Buffer): If active nests are found within the Project footprint or within 500 feet of any Project-related Covered Activity, the Third-Party Project Proponent shall establish a 500-foot temporary buffer around the active nest until the young have fledged.* • *AMM TCB-4 (Tricolored Blackbird Nest Buffer Monitoring): If nesting tricolored blackbirds are present within the Project footprint or within 500 feet of any Project-related Covered Activity, then an approved biologist experienced with tricolored blackbird behavior shall be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist shall be on site daily while construction-related activities are taking place near the disturbance buffer. Work within the nest disturbance buffer shall not be permitted. If the approved biologist determines that tricolored blackbirds are exhibiting agitated behavior, construction shall cease until the buffer size is increased to a distance necessary to result in no harm or harassment to the nesting tricolored blackbirds. If the biologist determines that the colonies are at risk, a meeting with the Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies shall be held to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist shall also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a tricolored blackbird flies into an active construction zone (i.e., outside the buffer zone).* • *AMM TCB-5 (Timing of Pesticide Use and Harvest Timing on Agricultural Preserves): On SSHCP Agricultural Preserves, pesticides (including herbicides) shall not be applied from January 1 through July 15.* ***Mitigation Measure 3.3-5:*** *The Project proponent shall implement the following SSHCP*	

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		AMMs to the satisfaction of the City to avoid direct and indirect effects of Covered Activities on Swainson's hawk: • *AMM SWHA-1 (Swainson's Hawk Surveys): If modeled habitat for Swainson's hawk (Figure 3-25) is present within a Covered Activity's Project footprint or within 0.25 mile of a Project footprint, then an approved biologist shall conduct a survey to determine if existing or potential nesting sites are present within the Project footprint and adjacent areas within 0.25 mile of the Project footprint. Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. Nest sites are often associated with Riparian land cover, but also include lone trees in fields, trees along roadways, and trees around structures. Nest trees may include, but are not limited to, Fremont's cottonwood (Populus fremontii), oaks (Quercus spp.), willows (Salix spp.), walnuts (Juglans spp.), eucalyptus (Eucalyptus spp.), pines (Pinus spp.), and Deodar cedar (Cedrus deodara). The Third-Party Project Proponent shall map all existing and potential nesting sites and provide these maps to the Local Land Use Permittees (i.e., City of Rancho Cordova) and Implementing Entity (i.e., the South Sacramento Conservation Agency). Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 for the process to conduct and submit survey information.* • *AMM SWHA-2 (Swainson's Hawk Pre-Construction Surveys): Pre-construction surveys shall be required to determine if active nests are present within a Project footprint or within 0.25 mile of a Project footprint if existing or potential nest sites were found during initial surveys and construction activities shall occur during the breeding season (March 1 through September 15). An approved biologist shall conduct pre-construction surveys within 30 days and 3 days of ground-disturbing activities to determine presence of nesting Swainson's hawk. Pre-construction surveys shall be conducted during the breeding season (March 1 through September 15). If a nest is present, then SWHA-3 and SWHA-4 shall be implemented. The approved biologist shall inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn shall notify the Wildlife Agencies (i.e., the USFWS and CDFW).* • *AMM SWHA-3 (Swainson's Hawk Nest Buffer): If active nests are found within*	

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		the Project footprint or within 0.25 mile of any Project-related Covered Activity, the Third-Party Project Proponent shall establish a 0.25 mile disturbance buffer around the active nest until the young have fledged, with concurrence from the Wildlife Agencies. • *AMM SWHA-4 (Swainson's Hawk Nest Buffer Monitoring): If nesting Swainson's hawks are present within the Project footprint or within 0.25 mile of any Project-related Covered Activity, then an approved biologist experienced with Swainson's hawk behavior shall be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist shall be on site daily while construction-related activities are taking place within the buffer. Work within the temporary nest disturbance buffer can occur with the written permission of the Implementing Entity and Wildlife Agencies. If nesting Swainson's hawks begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the approved biologist shall have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies shall meet to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist shall also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a Swainson's hawk flies into an active construction zone (i.e., outside the buffer zone).* ***Mitigation Measure 3.3-6:*** *The Project proponent shall implement the following SSHCP AMMs to avoid direct and indirect effects of Covered Activities on western burrowing owl:* • *AMM WBO-1 (Western Burrowing Owl Surveys): Surveys within modeled habitat are required for both the breeding and non-breeding season. If the Project site falls within modeled habitat, an approved biologist shall survey the Project site and map all burrows, noting any burrows that may be occupied. Occupied burrows are often (but not always) indicated by tracks, feathers, egg shell fragments, pellets, prey remains, and/or excrement. Surveying and mapping shall be conducted by the approved biologist while walking transects throughout the entire Project site plus all accessible areas within a 250-foot*	

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		radius from the Project site. The centerline of these transects shall be no more than 50 feet apart and shall vary in width to account for changes in terrain and vegetation that can preclude complete visual coverage of the area. For example, in hilly terrain with patches of tall grass, transects shall be closer together, and in open areas with little vegetation, they can be 50 feet apart. This methodology is consistent with current survey protocols for this species (California Burrowing Owl Consortium 1993). Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. If suitable habitat is identified during the initial survey, and if the Project does not fully avoid the habitat, pre-construction surveys shall be required. Burrowing owl habitat is fully avoided if Project-related activities do not impinge on a 250foot buffer established by the approved biologist around suitable burrows. See Chapter 10 for the process to conduct and submit survey information. • *AMM WBO-2 (Western Burrowing Owl Pre-Construction Surveys): Prior to any Covered Activity ground disturbance, an approved biologist shall conduct pre-construction surveys in all areas that were identified as suitable habitat during the initial surveys. The purpose of the pre-construction surveys is to document the presence or absence of burrowing owls on the Project site, particularly in areas within 250 feet of construction activities. To maximize the likelihood of detecting owls, the pre-construction survey shall last a minimum of 3 hours. The survey shall begin 1 hour before sunrise and continue until 2 hours after sunrise (3 hours total), or begin 2 hours before sunset and continue until 1 hour after sunset. Additional time may be required for large project sites. A minimum of two pre-construction surveys shall be conducted (if owls are detected on the first survey, a second survey is not needed). All owls observed shall be counted and their location shall be mapped. Surveys shall conclude no more than 2 calendar days prior to construction. Therefore, the Third-Party Project Proponent must begin surveys no more than 4 days prior to construction (2 days of surveying plus up to 2 days between surveys and construction). To avoid last-minute changes in schedule or contracting that may occur if burrowing owls are found, the Third-Party Project Proponent may also conduct a preliminary survey up to 15 days before construction. This preliminary survey may count as the first of the two required surveys as long as the second survey concludes no more than 2 calendar days in advance of*	

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		construction. • *AMM WBO-3 (Burrowing Owl Avoidance): If western burrowing owl or evidence of western burrowing owl is observed on the Project site or within 250 feet of the Project site during pre-construction surveys, then the following shall occur:* ***During Breeding Season**: If the approved biologist finds evidence of western burrowing owls within a Project site during the breeding season (February 1 through August 31), all Project-related activities shall avoid nest sites during the remainder of the breeding season or while the nest remains occupied by adults or young (nest occupation includes individuals or family groups foraging on or near the site following fledging). Avoidance is establishment of a minimum 250-foot buffer zone around nests. Construction and other Project-related activities may occur outside of the 250-foot buffer zone. Construction and other Project-related activities may be allowed inside of the 250-foot non-disturbance buffer during the breeding season if the nest is not disturbed, and the Third-Party Project Proponent develops an avoidance, minimization, and monitoring plan that is approved by the Implementing Entity (i.e., the South Sacramento Conservation Agency) and Wildlife Agencies (i.e., the USFWS and CDFW) prior to Project construction based on the following criteria:* o *The Implementing Entity (i.e., the South Sacramento Conservation Agency) and Wildlife Agencies (i.e., the USFWS and CDFW) approve of the avoidance and minimization plan provided by the Project applicant.* o *An approved biologist monitors the owls for at least 3 days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction).* o *The same approved biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.* *If there is any change in owl nesting and foraging behavior as a result of construction activities, the approved biologist shall have authority to shut down activities within the 250-foot buffer. Construction cannot resume within the 250-foot buffer until any owls present are no longer affected by nearby construction activities, and with written concurrence from the Wildlife*	

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		Agencies. *If monitoring by the approved biologist indicates that the nest is abandoned prior to the end of nesting season and the burrow is no longer in use, the non-disturbance buffer zone may be removed if approved by the Wildlife Agencies. The approved biologist shall excavate the burrow in accordance with the latest California Department of Fish and Wildlife guidelines for burrowing owl to prevent reoccupation after receiving approval from the Wildlife Agencies.* *The Implementing Entity and Wildlife Agencies shall respond to a request from the Third-Party Project Proponent to review the proposed construction monitoring plan within 21 days.* ***During Non-Breeding Season**: During the non-breeding season (September 1 through January 31), the approved biologist shall establish a minimum 250-foot non-disturbance buffer around occupied burrows. Construction activities outside of this 250-foot buffer shall be allowed. Construction activities within the non-disturbance buffer shall be allowed if the following criteria are met to prevent owls from abandoning overwintering sites:* o *An approved biologist monitors the owls for at least 3 days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).* o *The same approved biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.* o *If there is any change in owl foraging behavior as a result of construction activities, the approved biologist shall have authority to shut down activities within the 250foot buffer.* o *If the owls are gone for at least 1 week, the Third-Party Project Proponent may request approval from the Implementing Entity (i.e., the South Sacramento Conservation Agency) and Wildlife Agencies (i.e., the USFWS and CDFW) that an approved biologist excavate usable burrows and install one-way exclusionary devices to prevent owls from re-occupying the site. After all usable burrows are excavated, the buffer zone shall be removed and construction may continue.* *Monitoring must continue as described above for the non-breeding season as*	

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		long as the burrow remains active. • *AMM WBO-4 (Burrowing Owl Construction Monitoring): During construction of Covered Activities, 250-foot construction buffer zones shall be established and maintained around any occupied burrow. An approved biologist shall monitor the site to ensure that buffers are enforced and owls are not disturbed. The approved biologist shall also train construction personnel on avoidance procedures, buffer zones, and protocols in the event that a burrowing owl flies into an active construction zone.* • *AMM WBO-5 (Burrowing Owl Passive Relocation): Passive relocation is not allowed without the express written approval of the Wildlife Agencies. Passive owl relocation may be allowed on a case-by-case basis on Project sites during the non-breeding season (September 1 through January 31) with the written approval of the Wildlife Agencies if the other measures described in this condition preclude work from continuing. Passive relocation must be done in accordance with the latest California Department of Fish and Wildlife guidelines for burrowing owl. Passive relocation shall only be proposed if the burrow needing to be removed or with the potential to collapse from construction activities is the result of a Covered Activity. If passive relocation is approved by the Wildlife Agencies, an approved biologist can passively exclude birds from their burrows during the non-breeding season by installing one-way doors in burrow entrances. These doors shall be in place for 48 hours to ensure that owls have left the burrow, and then the biologist shall excavate the burrow to prevent reoccupation. Burrows shall be excavated using hand tools only. During excavation, an escape route shall be maintained at all times. This may include inserting an artificial structure into the burrow to avoid having materials collapse into the burrow and trap owls inside. Other methods of passive relocation, based on best available science, may be approved by the Wildlife Agencies over the 50-year Permit Term.* • *AMM WBO-6 (Burrowing Owl Timing of Maintenance Activities): All activities adjacent to existing or planned Preserves, Preserve Setbacks, or Stream Setback areas shall be seasonally timed, when safety permits, to avoid or minimize adverse effects on occupied burrows.* • *AMM WBO-7 (Rodent Control): Rodent control shall be allowed only in developed portions of a Covered Activity Project site within western burrowing*	

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		owl modeled habitat. Where rodent control is allowed, the method of rodent control shall comply with the methods of rodent control discussed in the 4(d) Rule published in the U.S. Fish and Wildlife Service's (2004) final listing rule for tiger salamander. ***Mitigation Measure 3.3-7:*** *The Project proponent shall implement the following SSHCP AMMs to the satisfaction of the City to avoid direct and indirect effects on covered raptor species. This measure applies to loggerhead shrike (Lanius ludovicianus), northern harrier (Circus cyaneus), and white-tailed kite (Elanus leucurus). The following AMMs do not apply to ferruginous hawk (Buteo regalis), as they do not nest in the Plan Area. The following AMMs also do not apply to Swainson's hawk or burrowing owl, as specific AMMs have been developed for these covered raptor species and are included in separate mitigation measures.* • *AMM RAPTOR-1 (Raptor Surveys): An approved biologist shall conduct a field investigation to determine if existing or potential nesting sites are present within the Project footprint and adjacent areas within 0.25 mile of the Project footprint. Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. The Project proponent shall map all existing or potential nesting sites and provide these maps to the Local Land Use Permittees (i.e., City of Rancho Cordova) and Implementing Entity (i.e., the South Sacramento Conservation Agency). Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 for the process to conduct and submit survey information.* • *AMM RAPTOR-2 (Raptor Pre-Construction Surveys): Pre-construction surveys shall be required to determine if active nests are present with a Project footprint or within 0.25 mile of a Project footprint if existing or potential nest sites are found during initial surveys and construction activities shall occur during the raptor breeding season. An approved biologist shall conduct pre-construction surveys within 30 days and 3 days of ground disturbing activities within the proposed Project footprint and within 0.25 mile of the proposed Project footprint to determine presence of nesting covered raptor species. Preconstruction surveys shall be conducted during the raptor breeding season. If a nest is present, then RAPTOR-3 and RAPTOR-4 shall be implemented. The approved biologist shall inform the Land Use Authority Permittee and*	

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		Implementing Entity of species locations, and they in turn shall notify the Wildlife Agencies. • *AMM RAPTOR-3 (Raptor Nest/Roost Buffer): If active nests are found within the Project footprint or within 0.25 mile of any Project-related Covered Activity, the Third-Party Project Proponent shall establish a 0.25 mile temporary nest disturbance buffer around the active nest until the young have fledged.* • *AMM RAPTOR-4 (Raptor Nest/Roost Buffer Monitoring): If Project-related Covered Activities within the temporary nest disturbance buffer are determined to be necessary during the nesting season, then an approved biologist experienced with raptor behavior shall be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist shall be on site daily while construction-related activities are taking place within the disturbance buffer. Work within the temporary nest disturbance buffer can occur with the written permission of the Implementing Entity and Wildlife Agencies. If nesting raptors begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the approved biologist/monitor shall have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies shall meet to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist shall also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a covered raptor species flies into an active construction zone (i.e., outside the buffer zone).* ***Mitigation Measure 3.3-8:*** *The Project proponent shall implement the following measure to avoid or minimize impacts on other protected bird species that may occur on the site:* • *Prior to any ground disturbance a pre-construction survey for protected bird species shall be completed. This survey shall be conducted in the morning or evening hours within 30 days prior to any construction activities. The entire site shall be surveyed for birds, nests and nesting behavior. Common nesting behavior by birds includes; collecting nesting materials, bringing food items to*	

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		a nest and vocalizations from young or from adults to attract a mate and to establish or defend a nesting territory. A construction-free buffer of suitable dimensions must be established around any active migratory bird nests (up to 250 feet, depending on the location and species) for the duration of the Project or until it has been determined that the chicks have fledged and are independent of their parents.	
Impact 3.3-5: The Project has the potential to, directly or indirectly, have a substantial adverse effect through habitat modifications or reductions, cause populations to drop below self-sustaining levels, substantially eliminate a community, or substantially reduce the number of, or restrict the range of, an endangered, rare or threatened species, including those considered candidate, sensitive, or special-status, in local or regional plans, policies, regulations, or by the CDFW or USFWS - Mammals	PS	***Mitigation Measure 3.3-9:*** *The Project proponent shall implement the following SSHCP AMMs to the satisfaction of the City to avoid or minimize impacts on protected bat species that may occur on the site:* • *AMM BAT-1 (Winter Hibernaculum Surveys): An approved biologist shall conduct a field investigation of the Project footprint and adjacent areas within 300 feet of a Project footprint to determine if a potential winter hibernaculum is present, and to identify and map potential hibernaculum sites. Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. If potential hibernaculum sites are found, the Project proponent shall note their locations on Project designs and shall design the Project to avoid all areas within a 300-foot buffer around the potential hibernaculum sites. Winter hibernaculum habitat is fully avoided if Project-related activities do not impinge on a 300-foot buffer established by the approved biologist around an existing or potential winter hibernaculum site.* • *AMM BAT-2 (Winter Hibernaculum Pre-Construction Surveys): If the Project proponent elects not to avoid potential winter hibernaculum sites within the Project footprint plus a 300-foot buffer, additional surveys are required. Prior to any ground disturbance related to Covered Activities, an approved biologist shall conduct a preconstruction survey within 3 days of ground-disturbing activities within the Project footprint and 300 feet of the Project footprint to determine the presence of winter hibernaculum sites. Pre-construction surveys shall be conducted during the winter hibernaculum season (November 1 through March 31). If a winter hibernaculum is present, then BAT-3 and BAT-4 shall be implemented. The approved biologist shall inform the City of Rancho Cordova and Implementing Entity (i.e., the South Sacramento Conservation Agency) of species locations, and they in turn shall notify the Wildlife Agencies (i.e., the USFWS and CDFW).*	LS

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		• *AMM BAT-3 (Winter Hibernaculum Buffer): If active winter hibernaculum sites are found within the Project footprint or within 300 feet of the Project footprint, the Project proponent shall establish a 300-foot temporary disturbance buffer around the active winter hibernaculum site until bats have vacated the hibernaculum and the Implementing Entity and Wildlife Agencies concur.* • *AMM BAT-4 (Bat Eviction Methods): An approved biologist shall determine if non-maternity and non-hibernaculum day and night roosts are present on the Project site. If necessary, an approved biologist shall use safe eviction methods to remove bats if direct impacts to non-maternity and non-hibernaculum day and night roosts cannot be avoided. If a winter hibernaculum site is present, Covered Activities shall not occur until the hibernaculum is vacated, or, if necessary, safely evicted using methods acceptable to the Wildlife Agencies.* ***Mitigation Measure 3.3-10:*** *The Project proponent shall implement the following measure to avoid or minimize impacts on American badger that may occur on the site:* • *A qualified biologist shall conduct a pre-construction survey for American badger within 14 days prior to the start of ground disturbance. If no American badgers are observed, then a letter report documenting the results of the survey shall be provided to the Project proponent for their records, and no additional measures are recommended. If construction does not commence within 14 days of the preconstruction survey, or halts for more than 14 days, a new survey is required. The results of the survey shall be submitted to the City's Planning Department.* • *If American badgers or their dens are found during the survey, additional avoidance measures shall be implemented, including having a qualified biologist conduct a pre-construction survey within 24 hours prior to commencement of construction activities, performing a Worker Awareness Training to all construction workers, and being present on the Project site during grading activities for the purpose of temporarily halting construction activities until the biologist determines that the badger has left the construction footprint on its own accord. The results of the survey shall be submitted to the City's Planning Department.*	

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
Impact 3.3-6: The Project has the potential to, directly or indirectly, have a substantial adverse effect through habitat modifications or reductions, cause populations to drop below self-sustaining levels, substantially eliminate a community, or substantially reduce the number of, or restrict the range of, an endangered, rare or threatened species, including those considered candidate, sensitive, or special-status, in local or regional plans, policies, regulations, or by the CDFW or USFWS - Plants	PS	***Mitigation Measure 3.3-11:*** *The Project proponent shall implement the following measure to the satisfaction of the City to avoid or minimize impacts on special-status plants that may occur on the site:* • *AMM PLANT-1 (Rare Plant Surveys): The Project site shall be surveyed for rare plants, specifically including Ahart's dwarf rush (Juncus leiospermus var. ahartii), Dwarf downingia (Downingia pusilla), pincushion navarretia (Navarretia myersii ssp. myersii), and hoary navarretia (Navarretia eriocephala), by an approved biologist and following the CDFW rare plant survey protocols (CDF 2009) or the most recent CDFW rare plant survey protocols. An approved biologist will conduct the field surveys and will identify and map plant species occurrences according to the protocols.* • *AMM PLANT-2 (Rare Plant Protection): If a rare plant listed in AMM PLANT-1 is detected within an area proposed to be disturbed by a Covered Activity or is detected within 250 feet of the area proposed to be disturbed by a Covered Activity, the Implementing Entity (i.e., the South Sacramento Conservation Agency) will assure one unprotected occurrence of the species is protected within a SSHCP Preserve before any ground disturbance occurs at the Project site.* • *AMM ORCUTT-1 (Orcutt Grass Surveys): The Project site will be surveyed for Sacramento and slender Orcutt grass by an approved biologist following CDFW rare plant survey protocols (CDFG 2009) or most recent CDFW guidelines to determine if Sacramento and/or slender Orcutt grass is present. An approved biologist will conduct the field investigation to identify and map occurrences.* • *AMM ORCUTT-2 (Orcutt Grass Protection): Where known or new Sacramento or slender Orcutt grass occurrences are found, they will be protected within an SSHCP Preserve that is at least 50 acres. The occurrence will be located interior to the Preserve at a distance of no less than 300 feet from the edge of the Preserve boundary. If a Project proponent encounters a previously undiscovered occurrence of Sacramento or slender Orcutt grass on a Covered Activity Project site, the Project proponent will contact the Implementing Entity or City of Rancho Cordova with authority over the Project, who will coordinate with the Wildlife Agencies (i.e., the USFWS and CDFW) for written concurrence of avoidance to ensure that the Project does not cause take of the*	LS

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		species.	
Impact 3.3-7: The Project has the potential to have substantial adverse effect on federally- or state-protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means	PS	*Implement* ***Mitigation Measure 3.5-1.*** ***Mitigation Measure 3.3-11****: Prior to any construction activities that would disturb a jurisdictional feature, The Project proponent shall submit a wetland delineation, site plan, and mitigation methods to the City of Rancho Cordova and the SSHCP. The Project proponent shall submit a SSHCP permit application package to the City of Rancho Cordova ("Land Use Authority Permittee") as a request that coverage provided by City's SSHCP Aquatic Resources Program be extended to the proposed activities. The City of Rancho Cordova shall review the SSHCP permit application for consistency with all of the SSHCP requirements and provide the South Sacramento Conservation Agency ("Implementing Entity) with a copy of the SSHCP requirements for tracking purposes. The Project proponent shall be responsible for paying all SSHCP development fees associated with obtaining coverage from the City of Rancho Cordova.* *Additionally, the Project applicant shall participate in the SSHCP Aquatic Resources Program (ARP) by paying the applicable mitigation fee for the loss of jurisdictional aquatic features. Costs for the aquatic resources compensatory mitigation projects shall be covered through the Covered Activity project mitigation fees collected under the SSHCP. The SSHCP includes a fee structure that is distinguished by land cover type. This approach accounts for variations in costs associated with the particular requirements for each land cover type. The Project proponent shall pay fees based on the land cover types affected by the development Project and the fee schedule.* ***Mitigation Measure 3.3-12****: The Project proponent shall implement the following SSHCP Avoidance and Minimization Measures (AMMs) to the satisfaction of the City to avoid direct and indirect effects of Covered Activities on Aquatic land covers of the Verna Pool Ecosystem:* • *AMM LID-1 (Stormwater Quality): When the size of a Covered Activity project exceeds the thresholds established by the State Water Resources Control Board (SWRCB) (see the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions, or future SWRCB-approved design manuals applicable to the Plan Area), incorporate stormwater management into site design to satisfy the requirements outlined in the most recent*	LS

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		Stormwater Quality Design Manual for the Sacramento and South Placer Regions. Stormwater management may include groundwater recharge (LID-2) and natural site features (LID-3). • *AMM LID-2 (Groundwater Recharge): When siting SSHCP Preserves containing Riparian, Open Water, or Freshwater Marsh SSHCP land cover types, the Implementing Entity (i.e., the South Sacramento Conservation Agency) will prioritize locations that are suitable for groundwater recharge.* • *AMM LID-3 (Natural Site Features): Incorporate preservation of a site's natural aquatic features (such as creeks and streams) into project design to retain natural hydrologic patterns and to retain habitat that might be used by Covered Species.* • *AMM BMP-1 (Construction Fencing): Orange construction fencing will be installed to ensure that ground disturbance does not extend beyond the allowed construction footprint (i.e., the limit of project construction plus equipment staging areas and access roads). Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will mark the outer boundary of any Preserve Setback or Stream Setback adjacent to or within the project site with orange construction fencing prior to ground disturbance. This fencing will remain in place until project completion, as identified by the Plan Permittee.* • *AMM BMP-2 (Erosion Control): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will install temporary control measures for sediment, stormwater, and pollutant runoff as required by the Plan Permittee to protect water quality and species habitat. Silt fencing or other appropriate sediment control device(s) will be installed downslope of any Covered Activity that disturbs soils.* *Fiber rolls and seed mixtures used for erosion control will be certified as free of viable noxious weed seed. As discussed in Section 5.4.2, Covered Species Take Avoidance and Minimization Measures, erosion controls installed in or adjacent to Plan Area modeled habitat for giant gartersnake (Thamnophis gigas), western pond turtle (Actinemys marmorata), California tiger salamander (California tiger salamander), or western spadefoot (see Chapter 3) must be of appropriate design and materials that will not entrap the species (e.g., not contain mesh netting). Regular monitoring and maintenance of the*	

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		project's erosion control measures will be conducted until project completion to ensure effective operation of erosion control measures. • *AMM BMP-3 (Equipment Storage and Fueling): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will ensure that equipment storage and staging will occur in the development footprint only (not sited in any existing on-site Preserve, planned on-site Preserve, Preserve Setback, Stream Setback, or aquatic land cover type). Fuel storage and equipment fueling will occur away from waterways, stream channels, stream banks, and other environmentally sensitive areas within the development footprint.* *However, certain equipment storage and fueling activities can be allowed on Preserves within habitat re-establishment/establishment sites (refer to Section 5.2.7) if no location outside of the site is available. If a Covered Activity results in a spill of fuel, hydraulic fluid, lubricants, or other petroleum products, the spill will be absorbed and waste disposed of in a manner to prevent pollutants from entering a waterway, Preserve, Preserve Setback, or Stream Setback.* • *AMM BMP-4 (Erodible Materials): Plan Permittees and Third-Party Project Proponents implementing Covered Activities must not deposit erodible materials into waterways. Vegetation clippings, brush, loose soils, or other debris material will not be stockpiled within stream channels or on adjacent banks. Erodible material must be disposed of such that it cannot enter a waterway, Preserve, Preserve Setback, Stream Setback, or aquatic land cover type. If water and sludge must be pumped from a subdrain or other structure, the material will be conveyed to a temporary settling basin to prevent sediment from entering a waterway.* • *AMM BMP-5 (Dust Control): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will water active construction sites regularly, if warranted, to avoid or minimize impacts from construction dust on adjacent vegetation and wildlife habitats. No surface water will be used from aquatic land covers; water will be obtained from a municipal source or existing groundwater well.* • *AMM BMP-6 (Construction Lighting): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will direct all temporary construction lighting (e.g., lighting used for security or nighttime*	

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		equipment maintenance) away from adjacent natural habitats, and particularly Riparian and Wetland habitats and wildlife movement areas. • *AMM BMP-7 (Biological Monitor): If a Covered Activity includes ground disturbance within Covered Species modeled habitat, an approved biologist will be on site during the period of ground disturbance, and may need to be on site during other construction activities depending on the Covered Species affected. After ground-disturbing project activities are complete, the approved biologist will train an individual to act as the on-site construction monitor for the remainder of construction, with the concurrence of the Permitting Agencies. The on-site monitor will attend the training described in BMP-8. The approved biologist and the on-site monitor will have oversight over implementation of Avoidance and Minimization Measures, and will have the authority to stop activities if any of the requirements associated with those measures are not met. If the monitor requests that work be stopped, the Wildlife Agencies Agencies (i.e., the USFWS and CDFW) will be notified within one working day by email. The approved biologist and/or on-site monitor will record all observations of listed species on California Natural Diversity Database field sheets and submit them to the California Department of Fish and Wildlife. The approved biologist or on-site monitor will be the contact source for any employee or contractor who might inadvertently kill or injure a Covered Species or who finds a dead, injured or entrapped individual. The approved biologist and on-site monitor's names and telephone numbers will be provided to the Wildlife Agencies prior to the initiation of ground-disturbing activities. Refer to species-specific measures for details on requirements for biological monitors.* • *AMM BMP-11 (Speed Limit): Project-related vehicles will observe the posted speed limits on paved roads and a 10-mile-per-hour speed limit on unpaved roads and during travel in project areas. Construction crews will be given weekly tailgate instruction to travel only on designated and marked existing, cross-country, and project-only roads.* • *AMM ROAD-1 (Road Project Location): Road projects will be located in the least environmentally sensitive area to avoid, to the maximum extent practicable, impacts on Covered Species, Covered Species habitat, and waters of the United States. Road project alignments will follow existing roads, road*	

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE	RESULTING LEVEL OF SIGNIFICANCE
		easements, and rights-of-way, or be sited in disturbed areas to minimize habitat loss and additional habitat fragmentation. • *AMM UTILITY-4 (Siting of Entry and Exit Location): The entry and exit locations for the trenchless construction method (see Utility-3) will be sited to avoid impacts to vernal pools and Riparian Woodland, and to avoid direct take of SSHCP Covered Species.* • *AMM EDGE-4 (Locate Stormwater Control Outside Preserves): Roads, sidewalks, and other impermeable surfaces of Urban Development Covered Activities adjacent to existing or planned Preserves will slope away from Preserves and Preserve Setbacks or intercept drainage with swales or curbs and gutters to preclude drainage from entering Preserves and Preserve Setbacks. Stormwater flows must be directed away from Preserves and Preserve Setbacks and directed into stormwater control facilities inside the development (outside Preserves and Preserve Setbacks) (see EDGE-6 for exception to EDGE-4 in certain SSHCP Linkage Preserves).* • *AMM EDGE-5 (Stormwater Control in Preserve Setbacks): If trails are established in any Preserve Setback in compliance with EDGE-3, the trail must be sloped away from the Preserve, and rainwater leaving the trail surface must flow into an adjacent low-velocity bio-retention swale or cell to keep rainwater runoff and trail contaminants from entering the Preserve. Low-velocity bio-retention swales or cells are typically small linear features placed on one or both sides of a trail. As required by EDGE-3, trails and their adjacent bio-retention swales or cells must be located on the side of the Preserve Setback nearest development.* • *AMM EDGE-6 (Detention Basins in Linkage Preserves): Because planned SSHCP Linkage Preserves L1, L2, L4, L7, L8, L9, and L10 (see Section 7.5) surround natural creeks or streams that must receive stormwater from planned adjacent Urban Development Covered Activities, a limited number of stormwater detention basins will be allowed on those Linkage Preserves. Detention basins within Linkage Preserves (see Section 5.2.7) will be designed and constructed with fill material to build up the perimeter of the detention basin so as not to impact the soil restrictive layer (duripan or hardpan) and function of the soil perched aquifer. Detention basins within Linkage Preserves will capture stormwater flows and runoff, and will discharge water to the*	

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		stream/creek or percolate collected water to the soil perched aquifer. Detention basin structures that collect stormwater entering the basin or convey stormwater leaving the basin must be designed to avoid and minimize effects to Covered Species habitat in the Linkage Preserve. • *AMM EDGE-7 (Hardpan/Duripan Protection): To protect the soil perched aquifer and the micro-watersheds supporting existing vernal pool hydrology, activities that have the potential to cut into, disrupt, or remove the soil's restrictive layer (hardpan or duripan) will not occur within Preserves or Preserve Setbacks. However, in certain circumstances, the Covered Activities defined in Section 5.2.6, Covered Activities in Stream Setbacks in the UDA, and Section 5.2.8, Covered Activities in the Laguna Creek Wildlife Corridor of the Preserve System, may result in punctures or other minor disruptions of the soil hardpan or duripan if approved by the Implementing Entity and the Technical Advisory Committee according to the process described in Chapter 9 of the SSHCP. If a Covered Activity on a Preserve or Preserve Setback results in a puncture or other disruption to the soil hardpan or duripan, the puncture will be sealed using bentonite clay or other material that maintains the functionality of the soil's restrictive layer and associated perched aquifer.*	
Impact 3.3-8: The Project has the potential to have substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service	LS	None required	--
Impact 3.3-9: The Project has the potential to interfere substantially with the movement of native fish or wildlife species or with established wildlife corridors, or impede the use of native wildlife nursery sites	LS	None required	--
Impact 3.3-10: The Project may result in conflicts with local policies or ordinances protecting biological resources, such as a tree	LS	None required	--

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
preservation policy or ordinance			
Impact 3.3-11: The Project may result in conflicts with an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan	LS	None required	--
CULTURAL AND TRIBAL RESOURCES			
Impact 3.4-1: Project implementation has the potential to cause a substantial adverse change to a significant historical or archaeological resource, as defined in CEQA Guidelines §15064.5, or a significant tribal cultural resource, as defined in Public Resources Code §21074	PS	***Mitigation Measure 3.4-1:*** *Prior to any ground-disturbing activities on the Project site, a qualified archaeologist shall conduct pre-construction worker cultural resources sensitivity training. The training session shall focus on the recognition of the types of historical and cultural, including Native American, resources that could be encountered, procedures to be followed if resources are found, and pertinent laws protecting these resources. Representatives from the Shingle Springs Band of Miwok Indians and the United Auburn Indian Community shall be invited to attend the training.* *Representatives from the Shingle Springs Band of Miwok Indians and the United Auburn Indian Community shall be invited to monitor ground-disturbing activities during construction and shall be provided with any safety requirements that shall be followed during any ground-disturbing and construction activities.* *If any cultural resources, including prehistoric or historic artifacts, or other indications of archaeological resources or tribal cultural resources are found during grading and construction activities, all work shall be halted immediately within a 100-foot radius of the discovery until an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, has evaluated the find(s) and until the Shingle Springs Band of Miwok Indians and the United Auburn Indian Community have been contacted and invited to review and document the find.* *Work shall not continue at the discovery site until the archaeologist conducts sufficient research and data collection to make a determination that the resource is either 1) not cultural in origin; or 2) not potentially significant or eligible for listing on the NRHP or CRHR; or 3) not a significant Public Trust Resource.*	LS

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		If a significant finding is made, a plan must be developed for this inadvertent finding. Measures to potentially address a subsurface finding could include one or more of the following depending upon the nature of the find: recordation of the finding; further efforts to define the extent and nature of the resource; preservation in place, and re-design to ensure long-term preservation of the resource; and/or data recovery excavations. *If Native American resources are identified, a Native American monitor, following the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites established by the Native American Heritage Commission, may also be required and, if required, shall be retained at the Applicant's expense. Additionally, if any of these resources are identified, the Shingle Springs Band of Miwok Indian shall be consulted to go over the process to protect any potentially important or sacred resources, particularly if located along the on-site aquatic resources.*	
Impact 3.4-2: Project implementation has the potential to disturb human remains, including those interred outside of formal cemeteries	PS	***Mitigation Measure 3.4-2:*** *If human remains are discovered during the course of construction during any phase of the Project, work shall be halted at the site and at any nearby area reasonably suspected to overlie adjacent human remains until the Sacramento County Coroner has been informed and has determined that no investigation of the cause of death is required. If the remains are of Native American origin, either of the following steps will be taken:* • *The coroner shall contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner shall make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.* • *The Shingle Springs Band of Miwok Indian shall be consulted to go over the process to protect any human remains, particularly if located along the on-site aquatic resources.* • *The landowner shall retain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further*	LS

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		subsurface disturbance when any of the following conditions occurs: o *The Native American Heritage Commission is unable to identify a descendent.* o *The descendant identified fails to make a recommendation.* o *The City of Rancho Cordova or its authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.*	
GEOLOGY AND SOILS			
Impact 3.5-1: Project implementation would not directly or indirectly cause potential substantial adverse effects involving strong seismic ground shaking or seismic related ground failure	LS	None required.	--
Impact 3.5-2: Project construction and implementation has the potential to result in substantial soil erosion or the loss of topsoil	PS	***Mitigation Measure 3.5-1:*** *Prior to any site disturbance, the Project proponent shall submit a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) to the RWQCB in accordance with the NPDES General Construction Permit requirements. The SWPPP shall be designed to control pollutant discharges utilizing Best Management Practices (BMPs) and technology to reduce erosion and sediments. BMPs may consist of a wide variety of measures taken to reduce pollutants in stormwater runoff from the Project site. Measures shall include temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) that will be employed to control erosion from disturbed areas. Final selection of BMPs will be subject to approval by the City of Rancho Cordova and the RWQCB. The SWPPP will be kept on site during construction activity and will be made available upon request to representatives of the RWQCB.*	LS
Impact 3.5-3: The Project has the potential to be located on a geologic unit or soil that is unstable, or that would become unstable as a result of Project implementation, and potentially result in landslide, lateral	PS	***Mitigation Measure 3.5-2:*** *Prior to final design approval and issuance of building permits for each phase of the Project, the Project applicant shall submit to the City of Rancho Cordova Building and Safety Division, for review and approval, a design-level geotechnical engineering report produced by a California Registered Civil Engineer or Geotechnical Engineer. The design-level report shall address, at a minimum, the*	LS

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
spreading, subsidence, liquefaction or collapse		*following:* • *Compaction specifications and subgrade preparation for onsite soils;* • *Structural foundations, including concrete design that addresses potential soils corrosivity;* • *Grading practices; and* • *Expansive/unstable soils.* *The design-level geotechnical engineering report shall include a summary of the site, soil, and groundwater conditions, seismicity, laboratory test data, exploration data and a site plan showing exploratory locations and improvement limits. The report shall include borings/test pits for park sites and include recommendations for park site development, including the potential to amend soils, if necessary, during the preliminary grading of the Project site during the first phase of construction activities. The report shall be signed by a licensed California Geotechnical Engineer. Design-level recommendations shall be included in the foundation and improvement plans and approved by the City of Rancho Cordova Public Works Department prior to issuance of any building permits.*	
Impact 3.5-4: The Project would not be located on expansive soil creating substantial risks to life or property	LS	None required.	--
Impact 3.5-5: Project implementation has the potential to directly or indirectly destroy a unique paleontological resource	PS	***Mitigation Measure 3.5-3:*** *If any paleontological resources are found during grading and construction activities, all work shall be halted immediately within a 200-foot radius of the discovery until a qualified paleontologist has evaluated the find.* *Work shall not continue at the discovery site until the paleontologist evaluates the find and makes a determination regarding the significance of the resource and identifies recommendations for conservation of the resource, including preserving in place or relocating on the* Project *site, if feasible, or collecting the resource to the extent feasible and documenting the find with the University of California Museum of Paleontology.*	LS
GREENHOUSE GASES, CLIMATE CHANGE, AND ENERGY			
Impact 3.6-1: The Project has the potential to generate construction-related GHGs, either	PS	*Implement* ***Mitigation Measure 3.6-1.***	LS

<table>
<tr><th>ENVIRONMENTAL IMPACT</th><th>LEVEL OF SIGNIFICANCE WITHOUT MITIGATION</th><th>MITIGATION MEASURE</th><th>RESULTING LEVEL OF SIGNIFICANCE</th></tr>
<tr><td>directly or indirectly, that may have a significant effect on the environment</td><td></td><td></td><td></td></tr>
<tr><td>Impact 3.6-2: The Project has the potential to generate operation-related GHGs, either directly or indirectly, that may have a significant effect on the environment</td><td>PS</td><td>Mitigation Measure 3.6-1: The Project shall comply with the GHG Reduction Plan for The Ranch throughout all phases of Project construction and operation.

<u>The Ranch GHG Reduction Plan</u>

The Project shall implement all measures shown in the table below that are identified as “Incorporated into Project Design” or “Mitigation Measure” in order to reduce the Project’s net operational emissions, including amortized construction emissions, to an emissions level that meet the SMAQMD threshold for GHG emissions. It is noted that incorporation of the three SMAQMD-Recommended CalEEMod Measures to Reduce GHGs that are identified as “Mitigation Measures” in the below table would reduce the Project’s net operational emissions, including amortized construction emissions, to 5,336.3 MT CO_2e, as shown in Table 3.6-7 of the Draft EIR. Implementation of the required carbon offset purchase, as described in the below table, will ensure that the Project meets SMAQMD thresholds as it ensures the Project will purchase adequate carbon offsets to reduce all remaining emissions over SMAQMD thresholds to a level that meets the threshold.
<table>
<tr><th>GHG REDUCTION MEASURE</th><th>APPLICABILITY</th><th>IMPLEMENTATION</th></tr>
<tr><td colspan="3">SMAQMD-RECOMMENDED CALEEMOD MEASURE TO REDUCE GHGS[1]</td></tr>
<tr><td>LUT-1 Increase Density: Project more dense than typical developments</td><td>Not applicable. Project is under minimum density required (eight units per acre).</td><td>Not applicable.</td></tr>
<tr><td>LUT-3 Increase Diversity of Land Uses: Different types of land uses are near each other</td><td>Incorporated into Project Description. Project provides single family residential, multifamily residential, commercial, senior community clubhouse, parks and recreation, and open space land uses.</td><td>Included in Project design as described in the Project Description. No additional implementation required.</td></tr>
</table>
</td><td>LS</td></tr>
</table>

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*			*RESULTING LEVEL OF SIGNIFICANCE*
		LUT-9 Improve Walkability Design: Walkable street network	Incorporated into Project Description. Project is designed with a walkable street pattern, with 123.53 intersections per square mile, multiple bicycle/pedestrian connections, an off-street trail system, and bicycle lanes to encourage walkability.	Included in Project design as described in the Project Description. No additional implementation required.	
		LUT-4 Improve Destination Accessibility: Project close to regional employment or destination center	Incorporated into Project Description. Project is located 12.3 miles from a regional employment center.	Included in Project design as described in the Project Description. No additional implementation required.	
		LUT-5 Increase Transit Accessibility: Project near high-quality transit	Not applicable. While Project would provide a transit stop for the planned regional transit line, transit is currently limited in the area.	Not applicable.	
		LUT-6 Integrate Below Market Rate Housing: Incorporates affordable housing	Not applicable. The Project includes two multifamily components, but does not include affordable housing.	Not applicable.	
		SDT-1 Improve Pedestrian Network: On-site pedestrian access network links all of project internally and externally	Incorporated into Project Description. Project is designed with a walkable street pattern, with 123.53 intersections per square mile, multiple bicycle/pedestrian connections, an off-street trail system, and bicycle lanes to encourage walkability.	Included in Project design as described in the Project Description. No additional implementation required.	
		SDT-2 Provide Traffic Calming Measures: Projects streets and intersections feature traffic calming	Incorporated into Project Description. Project has been designed to include a range of traffic-calming street design features, such as narrower streets,	Included in Project design as described in the Project Description. No additional implementation required.	

ENVIRONMENTAL IMPACT	LEVEL OF SIGNIFICANCE WITHOUT MITIGATION	MITIGATION MEASURE			RESULTING LEVEL OF SIGNIFICANCE
		features	limited single-loaded streets, parking on both sides of the street, posted speed limit signs, planter strips with street trees, and horizontal shifts (lane centerline that curves or shifts), and intersection traffic calming features, including marked crosswalks, count-down signal timers where appropriate, curb extensions, channelization islands, median islands, and tight corner radii.		
		SDT-3 Implement a Neighborhood Electric Vehicle (NEV) Network: Project provides a viable NEV network	Incorporated into Project Design. While the Project does not include a traditional NEV, the Project would support electric vehicle use through installing EV charging stations throughout the Project site, such that at least 50% of single family residences and 5% of parking spaces within the commercial, park and recreation, and multi-family land uses will have EV charging stations to reduce reliance on gasoline-fueled vehicles.	Included in Project design as described in the Project Description. No additional implementation required.	
		PDT-1 Limit Parking Supply: Parking supply below Institute of Transportation Engineers (ITE) rates	Not applicable. The suburban context of the Project is not appropriate for this measure.	Not applicable.	
		PDT-2 Unbundle Parking Costs: Parking cost separate from property costs	Not applicable. Project design incorporates garages into the single family residential units and does not have significant opportunities	Not applicable.	

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*			*RESULTING LEVEL OF SIGNIFICANCE*
			for unbundled parking costs.		
		TST-1 Provide a Bus Rapid Transit (BRT) System: Establish a BRT line with permanent operational funding stream	Not applicable. While the Project will provide for an expanded transit system through providing a transit stop in accordance with the City's transit plan, it will not create an independent funding source for transit.	Not applicable.	
		TST-3 Expand Transit Network: Establishes or enhances bus line with permanent operational funding stream	Not applicable. While the Project will provide for an expanded transit system through providing a transit stop in accordance with the City's transit plan, it will not create an independent funding source for transit.	Not applicable.	
		TST-4 Increase Transit Frequency: Reduces headways of existing transit	Not applicable. While the Project will provide for an expanded transit system through providing a transit stop in accordance with the City's transit plan, it will not create an independent funding source for transit that would reduce headways.	Not applicable.	
		TRT-1&2 Implement Trip Reduction Program: Transportation Management Association (TMA) membership or other comprehensive services	Mitigation Measure. Mitigation Measure 3.6-1 requires the Project to join a Transportation Management Association (all employees located within the Project site to be eligible to participate).	Prior to issuance of occupancy permits for each construction phase of the Project, the Project applicant shall demonstrate that the residential, commercial, and parks and recreation uses associated with each phase have a permanent commitment, demonstrated through CC&Rs or comparable	

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*			*RESULTING LEVEL OF SIGNIFICANCE*
				permanent mechanisms, have joined a Transportation Management Association and ensures payment of annual fees for on-going participation. The Transportation Management Association shall grant all employees located within the Project site eligibility to participate).	
		BE-1 Exceed Title 24 California Code of Regulations, known as the California Building Standards Code(Title 24): Use less energy than allowed by Title 24	Mitigation Measure. Mitigation Measure 3.6-1 requires the Project to exceed the 2016 Title 24 requirements by 2 percent	Prior to issuance of building permits for each construction phase of the Project, including all residential, commercial, and parks and recreation uses, the Project applicant shall demonstrate that the phase exceeds the 2016 Title 24 requirements for energy use and efficiency by a minimum of 2 percent. The documentation shall identify specific Project components, such as building materials and design, lighting improvements beyond the minimum required by LE-1, etc. and the associated reduction with each component beyond the Title 24 requirements.	

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*			*RESULTING LEVEL OF SIGNIFICANCE*
		LE-1 Install High Efficiency Lighting: Make use of high-efficient outdoor and public lighting	Incorporated into Project Design. The Project proposes to install energy-efficient (i.e., LED or better) lighting for all outdoor lighting.	Included in Project design as described in the Project Description. No additional implementation required.	
		BE-4 Energy Efficient Appliances: Use appliances more energy efficient than standard models	Incorporated into Project Design. The Project proposes to install energy-efficient appliances.	Included in Project design as described in the Project Description. No additional implementation required.	
		AE-1 On-site Renewable Energy: Establish on-site renewable energy. (No Ozone Precursor reductions if NO_X intensity is higher than electric utility.)	Incorporated into Project Design. The Project would generate a minimum of 95% of electricity via renewable energy via either on-site energy generation and/or through a contract with SMUD.	Included in Project design as described in the Project Description. No additional implementation required.	
		WUW-2 Apply Water Conservation Strategy: Reduce indoor and outdoor water use	Incorporated into Project Design. The Project would	Included in Project design as described in the Project Description. No additional implementation required.	
		WSW-1 Use Reclaimed Water: Project utilizes non-potable water	Not applicable. Nonpotable water is not available to the Project site.	Not applicable.	
		WSW-2 Use Grey Water: Project reuses onsite water	Not applicable. The Project does not have significant opportunities to reuse onsite water.	Not applicable.	

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*			*RESULTING LEVEL OF SIGNIFICANCE*
		WUW-1 Install Low-Flow Bathroom Faucet, Install Low-Flow Kitchen Faucet, Install Low-flow Toilet, Install Low-flow Shower	Incorporated into Project Design. The Project proposes to install energy-efficient appliances.	Included in Project design as described in the Project Description. No additional implementation required.	
		WUW-5 Reduce Turf in Landscapes and Lawns: Use less turf than normal projects	Incorporated into Project Design. Minimize turf for residential uses to 70% less than the maximum allowed turf area to reduce water use.	Included in Project design as described in the Project Description. No additional implementation required.	
		WUW-4 Use Water-Efficient Irrigation Systems: Install a smart irrigation control system	Incorporated into Project Design. Use water-efficient irrigation systems (automatic rain shut-off, maximum gallon per minute restriction, WiFi connectivity) to reduce water waste.	Included in Project design as described in the Project Description. No additional implementation required.	
		WUW-3 Water Efficient Landscape: Plant native or drought-resistant trees and Vegetation	Mitigation Measure. Mitigation Measure 3.6-1 requires the Project to incorporate a minimum of 50 percent of native or drought-resistant trees and vegetation into the proposed landscaping, including landscaping lots, landscaping associated with parks and recreation facilities, and landscaping associated with residential uses. Project applicant shall demonstrate at least a 25% reduction in outdoor water use from implementation of this measure.	Prior to approval of improvement plans for each phase of construction, the Project applicant shall submit landscaping plans that demonstrate a minimum of 50 percent of of native or drought-resistant trees and vegetation are included in the non-turf component of proposed landscaping, including landscaping lots, parks and recreation lots and facilities, and residential uses.	

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*			*RESULTING LEVEL OF SIGNIFICANCE*
		SW-1 Institute Recycling and Composting Services: Project Recycles, Reduces, and Reuses	Incorporated into Project Design. The Project will comply with the City's recycling requirements. Credit is not taken for this measure.	Not applicable.	
		ADDITIONAL MEASURES (NOT MODELED IN CALEEMOD)			
		Purchase Offsets.	Mitigation Measure. This Mitigation Measure 3.6-1 requires the Project applicant to purchase carbon offsets to reduce net project operational and amortized construction emissions to less than SMAQMD's adopted threshold for GHG emissions.	Prior to issuance of the project's first building permit, the project applicant shall develop a SMAQMD-approved commitment to purchase carbon offsets sufficient to reduce project operational emissions and amortized construction emissions to less than SMAQMD's adopted threshold for GHG emissions that is in place at the time of the offset purchase. The purchase of carbon offsets may be prorated so that the offsets are paid concurrent with the approval of each project phase (small lot subdivision maps, multifamily parcel, etc.).	
Impact 3.6-3: The Project has the potential to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases	PS	*Implement* ***Mitigation Measure 3.6-1.***			LS

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
Impact 3.6-4: Project implementation has the potential to result in the inefficient, wasteful, or unnecessary use of energy resources, or conflict with or obstruct a state or local plan for renewable energy or energy efficiency	LS	None required.	--
HAZARDS AND HAZARDOUS MATERIALS			
Impact 3.7-1: Project implementation has the potential to create a significant hazard through the routine transport, use, or disposal of hazardous materials or through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment	PS	***Mitigation Measure 3.7-1****: Prior to commencement of grading, the applicant shall submit Construction Site Management Plan for review and approval by the City. The Construction Site Management Plan shall establish management practices for handling hazardous materials, including fuels, paints, cleaners, solvents, etc., during construction to reduce the potential for spills and to direct the safe handling of these materials if encountered. The City shall approve the Construction Site Management Plan prior to any earth moving.*	LS
Impact 3.7-2: The Project is not located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would not create a significant hazard to the public or the environment	LS	None required.	--
Impact 3.7-3: Project implementation would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school	LS	None required.	--
Impact 3.7-4: Project implementation would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan	LS	None required.	--
Impact 3.7-5: Project implementation would not expose people or structures to a risk of loss, injury or death from wildland fires	LS	None required.	--

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
HYDROLOGY AND WATER QUALITY			
Impact 3.8-1: The Project may violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality during construction	PS	***Mitigation Measure 3.5-1****: Prior to any site disturbance, the Project proponent shall submit a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) to the RWQCB in accordance with the NPDES General Construction Permit requirements. The SWPPP shall be designed to control pollutant discharges utilizing Best Management Practices (BMPs) and technology to reduce erosion and sediments. BMPs may consist of a wide variety of measures taken to reduce pollutants in stormwater runoff from the Project site. Measures shall include temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) that will be employed to control erosion from disturbed areas. Final selection of BMPs will be subject to approval by the City of Rancho Cordova and the RWQCB. The SWPPP will be kept on site during construction activity and will be made available upon request to representatives of the RWQCB. (Note: This measure is also included in Section 3.5.)* ***Mitigation Measure 3.8-1:*** *Prior to the commencement of construction activities, the Project proponent shall submit, and obtain approval of, a Spill Prevention Countermeasure and Control Plan (SPCC) to the Sacramento County Environmental Management Department. The SPCC shall specify measures and procedures to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during all construction activities, and shall meet the requirements specified in the Code of Federal Regulations, title 40, part 112.*	LS
Impact 3.8-2: The Project may violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality during post-construction	PS	***Mitigation Measure 3.8-2:*** *Before approval of the final subdivision map for all Project phases, a detailed Best Management Practice (BMP) and water quality maintenance plan shall be prepared by a qualified engineer retained by the Project applicants that meets the standards of the City's NPDES Permit (No. CAS00853254) and shall document that stormwater runoff from the Project site is treated per the standards in the Stormwater Quality Design Manual for Sacramento and South Placer Regions. Drafts of the plan shall be submitted to the City of Rancho Cordova for review and approval concurrently with development of tentative subdivision maps for all Project phases. The plan shall finalize the water quality improvements and further detail the structural and nonstructural BMPs proposed for the Project. The plan shall include the elements described below.*	LS

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		• *A quantitative hydrologic and water quality analysis of proposed conditions incorporating the proposed drainage design features.* • *Pre-development and post-development calculations demonstrating that the proposed water quality BMPs meet or exceed requirements established by the City of Rancho Cordova and including details regarding the size, geometry, and functional timing of storage and release pursuant to the "Stormwater Quality Design Manual for Sacramento and South Placer Regions".* • *Source control programs to control water quality pollutants on the Project site, which may include but are limited to recycling, street sweeping, storm drain cleaning, household hazardous waste collection, waste minimization, prevention of spills and illegal dumping, and effective management of public trash collection areas.* • *A pond management component for the proposed basins that shall include management and maintenance requirements for the design features and BMPs, and responsible parties for maintenance and funding.* • *Low Impact Development (LID) and Hydromodification control measures shall be integrated into the BMP and water quality maintenance plan. These may include, but are not limited to:* o *Bioretention planters;* o *surface swales;* o *replacement of conventional impervious surfaces with pervious surfaces (e.g., porous pavement, green roofs);* o *impervious surfaces disconnection; and* o *trees planted to intercept stormwater.*	
Impact 3.8-3: The Project would not decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin	LS	None required.	--

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
Impact 3.8-4: The Project would not alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion, siltation, surface runoff, flooding, or polluted runoff	LS	None required.	--
Impact 3.8-5: The Project may conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan	LS	None required.	--
LAND USE			
Impact 3.9-1: Implementation of the Project would not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project adopted to avoid or mitigate an environmental effect	PS	***Mitigation Measure 3.9-1:*** *The proposed open space areas located under the SMUD transmission line that traverses the site shall be designed and maintained in accordance with SMUD's Guide for Transmission Encroachment. According to the Guide, certain improvements, for safety and liability reasons, are typically not allowed within transmission corridors. These include, but not limited to the following:* • *Buildings or structures;* • *Covered parking;* • *Excavation, elevation or grade changes;* • *Light Standards over 15' tall;* • *Parallel Utilities;* • *Playground Equipment;* • *Stockpiling of materials;* • *Storage of combustibles;* • *Swimming pools, spas, gazebos, etc.;* • *Tall tree species (over 15' at maturity);* • *Trash enclosures; and* • *Water Detention and/or Retention Basins.* *The proposed open space areas located under the PG&E transmission line that traverses the site shall be designed and maintained in accordance with the PG&E Electric and Gas*	LS

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
		Service Requirements. *Future improvement plans that include the transmission lines shall be consistent with the items outlined in Chapter 5, Trails and Parks, of the Guide, as well as other applicable Chapters. This requirement shall be noted on the Project improvement plans, subject to review and approval by the City of Rancho Cordova.*	
NOISE			
Impact 3.10-1: The Project may result in exposure of persons to or generation of substantial temporary or permanent increase in ambient noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies – Project Operation	LS	None required.	--
Impact 3.10-2: The Project may result in exposure of persons to or generation of substantial temporary increase in ambient noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies – Project Construction	LS	None required.	--
Impact 3.10-3: The Project may result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels	LS	None required.	--
Impact 3.10-4: The Project would not expose people residing or working in the Project area to excessive noise levels as a result of nearby airstrips or airports	LS	None required.	--
POPULATION AND HOUSING			
Impact 3.11-1: Project implementation would not induce substantial population growth	LS	None required.	--

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
PUBLIC SERVICES AND RECREATION			
Impact 3.12-1: The Project is not anticipated to result in substantial adverse physical impacts associated with the provision of or need for new or physically altered police facilities	LS	None required.	--
Impact 3.12-2: The Project is not anticipated to result in substantial adverse physical impacts associated with the provision of or need for new or physically altered fire protection facilities	LS	None required.	--
Impact 3.12-3: The Project has the potential to require the new or physically altered school facilities, the construction of which may cause substantial adverse physical environmental impacts	LS	None required.	--
Impact 3.12-4: The Project has the potential to require the construction of park and recreational facilities which may cause substantial adverse physical environmental impacts	LS	None required.	--
Impact 3.12-5: The Project would not increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated	LS	None required.	--
Impact 3.12-6: The Project is not anticipated to result in substantial adverse physical impacts associated with the provision of or need for new or physically altered other public facilities	LS	None required.	--

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
TRANSPORTATION AND CIRCULATION			
Impact 3.13-1: Under Existing (2017) Plus Project conditions, Project may conflict with an applicable program, plan, ordinance or policy addressing the circulation system – Roadway Segments and Intersections	PS	***Mitigation Measure 3.13-1:*** *Intersection #3, Jackson Road at Eagles Nest Road: The intersection shall be converted from side street stop controlled to signalized. Prior to issuance of the occupancy permit for the 400th dwelling unit, the Project applicant shall fund its fair share of the improvement. The Project's fair share of the improvement is 1.69 percent..* ***Mitigation Measure 3.13-2:*** *Intersection #9, Grant Line Road at Sunrise Boulevard: The southbound approach shall be changed to include a right turn lane and an all-purpose lane. This would require restriping the southbound approach to move the bicycle lane from its existing location between the two travel lanes to the right shoulder and add hatching for the right turns, consistent with the Optional Through Right and Right-Turn-Only lane configuration included in Figure 9C-4a (CA) of the CaMUTCD[1]. Prior to issuance of the occupancy permit for the 400th dwelling unit, the Project applicant shall fund its fair share of the improvement. The Project's fair share of the improvement is 2.46 percent. .* ***Mitigation Measure 3.13-3:*** *Intersection #11, Douglas Road at Sunrise Boulevard: Signal timing optimization shall be completed at this intersection. Additionally, a right-turn overlap signal phase shall be added for the eastbound right-turn, overlapping with the northbound left-turn movement. The improvement shall be completed prior to issuance of the occupancy permit for the 400th dwelling unit.* ***Mitigation Measure 3.13-4:*** *Intersection #21, Sunrise Boulevard at White Rock Road: Signal timing optimization shall be completed at this intersection. The improvement shall be completed prior to issuance of the occupancy permit for the 400th dwelling unit.* ***Mitigation Measure 3.13-5:*** *Intersection #25, Sunrise Boulevard at Zinfandel Drive: The eastbound and westbound approaches shall be restriped to include a left turn lane and through-right lane. The improvement shall be completed prior to issuance of the occupancy permit for the 400th dwelling unit.*	SU

[1] California MUTCD 2014 Edition. Chapter 9C-Markings: Part 9 Traffic Control for Bicycle Facilities. November 2014

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
Impact 3.13-2: Under Cumulative (2040) Plus Project conditions, Project may conflict with an applicable program, plan, ordinance or policy addressing the circulation system – Roadway Segments and Intersections	PS	***Mitigation Measure 3.13-6:*** *Intersection #10, Douglas Road at Zinfandel Drive: Prior to issuance of the occupancy permit for the 400th dwelling unit, the Project shall pay its fair-share for the westbound right turn to be converted from permitted to a free right turn with a receiving lane. The Project's fair share of the improvement is 10.61 percent.* ***Mitigation Measure 3.13-7:*** *Intersection #27, White Rock Road at Prairie City Road: A second southbound right-turn lane shall be added at this intersection, and a right-turn overlap signal phase shall be added for the southbound right-turn. The Project's fair share of the improvement is 4.77 percent. The improvement fair-share shall be paid prior to issuance of the occupancy permit for the 400th dwelling unit.* ***Mitigation Measure 3.13-8:*** *Roadway Segment #9, Douglas Road between Mather Boulevard and Sunrise Boulevard: Prior to issuance of the occupancy permit for the 400th dwelling unit, the Project shall pay its fair-share for the widening of Douglas Boulevard to six lanes. The Project's fair share of the improvement is 10.05 percent.* ***Mitigation Measure 3.13-9:*** *Rancho Cordova Parkway shall be widened from two to four lanes along the Project extents. The improvement shall be reflected on the Project's improvement plans. The improvement shall be completed before the 570th market rate single family detached unit and the 566th Active Adult Residential unit is constructed.*	SU
Impact 3.13-3: Project implementation would not conflict with an applicable program, plan, ordinance, or policy addressing the transit system	LS	None required.	--
Impact 3.13-4: Project implementation would not conflict with an applicable program, plan, ordinance, or policy addressing the bicycle and pedestrian system	LS	None required.	--
Impact 3.13-5: Project implementation would not substantially increase hazards due to geometric design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)	LS	None required.	--
Impact 3.13-6: Project implementation would result in adequate emergency vehicle access	LS	None required.	--

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
UTILITIES			
Impact 3.14-1: The Project would not result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the providers existing commitments, or require or result in the relocation or construction of new or expanded wastewater facilities, the construction or relocation of which could cause significant environmental effects	LS	None required.	--
Impact 3.14-2: The Project would not require or result in the relocation of new or expanded water facilities, and would have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years	LS	None required.	--
Impact 3.14-3: The Project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste, and would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals	LS	None required.	--
OTHER CEQA-REQUIRED TOPICS			
Impact 4.1: The Project may contribute to cumulative impacts on known and undiscovered tribal cultural resources	LCC	None required.	--

ENVIRONMENTAL IMPACT	*LEVEL OF SIGNIFICANCE WITHOUT MITIGATION*	*MITIGATION MEASURE*	*RESULTING LEVEL OF SIGNIFICANCE*
Impact 4.2: The Project may contribute to cumulative impacts on greenhouse gases and climate change	LCC	None required.	--

This section summarizes the purpose of the Environmental Impact Report (EIR) for the proposed Project (the "Project"). The following discussion addresses the environmental procedures that are to be followed according to State law, the intended uses of the EIR, the Project's relationship to the City's General Plan, the EIR scope and organization, and a summary of the agency and public comments received during the public review period for the Notice of Preparation (NOP).

1.1 PURPOSE AND INTENDED USES OF THE EIR

The City of Rancho Cordova (City), as lead agency, determined that proposed Project is a "project" within the definition of the California Environmental Quality Act (CEQA). CEQA requires the preparation of an environmental impact report prior to approving any project that may have a significant impact on the environment. For the purposes of CEQA, the term "project" refers to the whole of an action, which has the potential for resulting in a direct physical change or a reasonably foreseeable indirect physical change in the environment (CEQA Guidelines Section 15378[a]).

An EIR must disclose the expected environmental impacts, including impacts that cannot be avoided, growth-inducing effects, impacts found not to be significant, and significant cumulative impacts, as well as identify mitigation measures and alternatives to the proposed project that could reduce or avoid its adverse environmental impacts. CEQA requires government agencies to consider and, where feasible, minimize environmental impacts of proposed development. CEQA further requires public agencies to balance a variety of public objectives, including economic, environmental, and social factors in making a decision to approve a development project with significant and unavoidable environmental impacts.

The City has prepared this Draft EIR to provide the public and responsible and trustee agencies with an objective analysis of the potential environmental impacts resulting from construction and operation of proposed Project. The environmental review process enables interested parties to evaluate the proposed Project in terms of its environmental consequences, to examine and recommend methods to eliminate or reduce potential adverse impacts, and to consider a reasonable range of alternatives to the Project. While CEQA requires that consideration be given to avoiding adverse environmental effects, the lead agency must balance adverse environmental effects against other public objectives, including the economic and social benefits of a project, in determining whether a project should be approved.

This EIR will be used by the City to determine whether to approve, modify, or deny the proposed Project and associated approvals in light of the Project's environmental effects. The EIR will be used as the primary environmental document to evaluate full project development, along with all associated infrastructure improvements, and permitting actions associated with The Ranch Project. All of the actions and components of the proposed project are described in detail in Section 2.0 of this Draft EIR.

1.2 TYPE OF EIR

This EIR is a Project EIR as defined in Section 15161 of the State CEQA Guidelines. A Project EIR is an EIR which examines the environmental impacts of a specific development project. This type of

EIR should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all phases of the project including planning, construction and operation. The Project EIR approach is appropriate for The Ranch Project because it allows comprehensive consideration of the reasonably anticipated scope of the Project, as described in greater detail in Section 2.0.

1.3 CEQA STREAMLINING

CEQA Guidelines Section 15168

The City Council certified the Rancho Cordova General Plan EIR (General Plan EIR) on June 26, 2006 (State Clearinghouse Number 2005022137). The General Plan EIR was prepared as a Program EIR pursuant to State CEQA Guidelines Section 15168. According to Section 15168(a):

(a) General. A program EIR is an EIR which may be prepared on a series of actions that can be characterized as on large project and are related either:

> *(1) Geographically,*
>
> *(2) As logical parts in the chain of contemplated actions,*
>
> *(3) In connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program, or*
>
> *(4) As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.*

The General Plan was intended to evaluate the environmental impacts of the General Plan to the greatest extent possible and is used as the primary environmental document to evaluate all subsequent planning and permitting actions associated with projects in the City. State CEQA Guidelines Section 15168(c) establishes the requirement that the Lead Agency (the City) determine if subsequent projects require additional environmental analysis.

According to State CEQA Guidelines Section 15168(c), additional review is required: (1) If a later activity would have effects that were not examined in the program EIR, a new initial study would need to be prepared leading to either an EIR or negative declaration. In addition to the rules governing the preparation and use of Program EIRs, other provisions of CEQA govern site-specific review of the proposed project.

Public Resources Code Section 21083.3

Public Resources Code Section 21083.3 limits CEQA review of certain projects consistent with an approved general plan, community plan, or zoning action for which an EIR was prepared to environmental effects that are "peculiar" to the parcel or to the project and which were not addressed as significant effects in a prior EIR, or which new information shows will be more significant than described in the prior EIR. The proposed project is a qualified project pursuant to Section 21083.3(b), which states "*(b) If a development project is consistent with the general plan of a local agency and an Environmental Impact Report was certified with respect to that general plan, the application of this division to the approval of that development project shall be limited to effects on the environment which are peculiar to the parcel or to the project and which were not addressed as significant effects in the prior Environmental Impact Report, or which substantial new information shows will be more significant than described in the prior Environmental Impact Report."*

The proposed Project was generally described in the General Plan EIR. However, specific information about the proposed Project was not known at the time of the preparation of the GP-EIR and the Project-specific impacts resulting from implementation of the proposed Project were not fully identified or mitigated in the General Plan EIR. Therefore, additional analysis and potential mitigation of the Project-specific environmental effects of the proposed Project are required. State CEQA Guidelines Section 15183 provides guidance as to the scope of this subsequent analysis.

CEQA Guidelines Section 15183 provides a streamlined environmental review process for projects that are consistent with the densities established by existing zoning, community plan, or general plan policies for which an EIR was certified. As discussed throughout this EIR, including Section 3.9, Land Use, the Project is consistent with the City's General Plan vision for the Project site and the policies and requirements of the General Plan that address the development density of the Project site. The impacts of development of the City's Planning Area, which includes the proposed Project site, are analyzed in the City's General Plan EIR (which was certified and adopted in 2006).

Under Section 15183 and the statute on which it is based, Public Resources Code Section 21083.3, additional environmental review for projects that are consistent with the development density established by a general plan for which an EIR was certified generally applies only to the project-specific impacts that are "peculiar to the project or its site" and have not been previously disclosed, except where "substantial new information" shows that previously identified impacts would be more significant than previously assumed. Notably, impacts are considered not to be "peculiar to the parcel or to the project" if they can be substantially mitigated pursuant to previously adopted, uniformly applied development policies or standards. Moreover, lead agencies need not revisit impacts previously addressed as significant effects in the prior EIR. The City has determined that, in light of the extensive coverage of particular topics in the General Plan EIR, this EIR need not revisit particular cumulative environmental topics. See Chapter 4.0.

The provisions contained in Section 15183 of the CEQA Guidelines are presented below.

15183. PROJECTS CONSISTENT WITH A COMMUNITY PLAN OR ZONING

(a) CEQA mandates that projects which are consistent with the development density established by existing zoning, community plan, or general plan policies for which an EIR was certified shall not require additional environmental review, except as might be necessary to examine whether there are project-specific significant effects which are peculiar to the project or its site. This streamlines the review of such projects and reduces the need to prepare repetitive environmental studies.

(b) In approving a project meeting the requirements of this section, a public agency shall limit its examination of environmental effects to those which the agency determines, in an initial study or other analysis:

(1) Are peculiar to the project or the parcel on which the project would be located,

(2) Were not analyzed as significant effects in a prior EIR on the zoning action, general plan, or community plan, with which the project is consistent,

(3) Are potentially significant off-site impacts and cumulative impacts which were not discussed in the prior EIR prepared for the general plan, community plan or zoning action, or

(4) Are previously identified significant effects which, as a result of substantial new information which was not known at the time the EIR was certified, are determined to have a more severe adverse impact than discussed in the prior EIR.

(c) If an impact is not peculiar to the parcel or to the project, has been addressed as a significant effect in the prior EIR, or can be substantially mitigated by the imposition of uniformly applied development policies or standards, as contemplated by subdivision (e) below, then an additional EIR need not be prepared for the project solely on the basis of that impact.

(d) This section shall apply only to projects which meet the following conditions:

(1) The project is consistent with:

(A) A community plan adopted as part of a general plan,

(B) A zoning action which zoned or designated the parcel on which the project would be located to accommodate a particular density of development, or

(C) A general plan of a local agency, and

(2) An EIR was certified by the lead agency for the zoning action, the community plan, or the general plan.

(e) This section shall limit the analysis of only those significant environmental effects for which:

(1) Each public agency with authority to mitigate any of the significant effects on the environment identified in the planning or zoning action undertakes or requires others to

undertake mitigation measures specified in the EIR which the lead agency found to be feasible, and

(2) The lead agency makes a finding at a public hearing as to whether the feasible mitigation measures will be undertaken.

(f) An effect of a project on the environment shall not be considered peculiar to the project or the parcel for the purposes of this section if uniformly applied development policies or standards have been previously adopted by the City or county with a finding that the development policies or standards will substantially mitigate that environmental effect when applied to future projects, unless substantial new information shows that the policies or standards will not substantially mitigate the environmental effect. The finding shall be based on substantial evidence which need not include an EIR. Such development policies or standards need not apply throughout the entire City or county, but can apply only within the zoning district in which the project is located, or within the area subject to the community plan on which the lead agency is relying. Moreover, such policies or standards need not be part of the general plan or any community plan, but can be found within another pertinent planning document such as a zoning ordinance. Where a City or county, in previously adopting uniformly applied development policies or standards for imposition on future projects, failed to make a finding as to whether such policies or standards would substantially mitigate the effects of future projects, the decision-making body of the City or county, prior to approving such a future project pursuant to this section, may hold a public hearing for the purpose of considering whether, as applied to the project, such standards or policies would substantially mitigate the effects of the project. Such a public hearing need only be held if the City or county decides to apply the standards or policies as permitted in this section.

(g) Examples of uniformly applied development policies or standards include, but are not limited to:

(1) Parking ordinances.

(2) Public access requirements.

(3) Grading ordinances.

(4) Hillside development ordinances.

(5) Flood plain ordinances.

(6) Habitat protection or conservation ordinances.

(7) View protection ordinances.

(8) Requirements for reducing greenhouse gas emissions, as set forth in adopted land use plans, policies, or regulations.

(h) An environmental effect shall not be considered peculiar to the project or parcel solely because no uniformly applied development policy or standard is applicable to it.

(i) Where the prior EIR relied upon by the lead agency was prepared for a general plan or community plan that meets the requirements of this section, any rezoning action consistent with the general plan or community plan shall be treated as a project subject to this section.

> *(1) "Community plan" is defined as a part of the general plan of a City or county which applies to a defined geographic portion of the total area included in the general plan, includes or references each of the mandatory elements specified in Section 65302 of the Government Code, and contains specific development policies and implementation measures which will apply those policies to each involved parcel.*
>
> *(2) For purposes of this section, "consistent" means that the density of the proposed project is the same or less than the standard expressed for the involved parcel in the general plan, community plan or zoning action for which an EIR has been certified, and that the project complies with the density-related standards contained in that plan or zoning. Where the zoning ordinance refers to the general plan or community plan for its density standard, the project shall be consistent with the applicable plan.*

(j) This section does not affect any requirement to analyze potentially significant offsite or cumulative impacts if those impacts were not adequately discussed in the prior EIR. If a significant offsite or cumulative impact was adequately discussed in the prior EIR, then this section may be used as a basis for excluding further analysis of that offsite or cumulative impact.

This Draft EIR addresses Project-specific impacts that were not fully addressed in the General Plan EIR. Additionally, this Draft EIR summarizes the findings of the City relating to the General Plan EIR and how the criteria set forth in Guidelines Section 15183 have been met.

The General Plan EIR analyzed the environmental effects of the General Plan and the twelve policy elements and the Land Use Map "implementation element". The twelve policy elements concentrated on providing policy guidance in the following areas:

- Land Use
- Urban Design
- Economic Development
- Housing
- Circulation
- Open Space, Parks, and Trails
- Infrastructure, Services, and Finance
- Natural Resources
- Cultural and Historic Resources
- Safety
- Air Quality
- Noise

The "implementation element" concerned the General Plan Land Use Map for the City which combines specific land use designations in some areas of the City and more general descriptions of

land uses in special areas planned for future growth referred to as "Planning Areas". The proposed Project lies within one of these Planning Areas (SunCreek/Preserve Planning Area), which is described in the General Plan and specific assumptions for the Project site are detailed in the General Plan EIR, which anticipated 2,624 residential units on 303.5 acres, a village center, parks, and wetland preserve, as discussed under the impact analysis provided in Section 3.9, Land Use.

In adopting the General Plan and certifying the General Plan EIR as complete and adequate, the City Council adopted findings of fact and a statement of overriding considerations for those impacts that could not be mitigated to less than significant levels. Impacts deemed in the General Plan EIR to be significant and unavoidable:

- Conflicts with applicable land use plans.
- Various impacts on agricultural land.
- Conflicts with Williamson Act contracts.
- Substantial population, housing, and employment growth.
- Deficient traffic level of service by 2030.
- Worsening of already unacceptable operations on US-50.
- Conflicts with the Regional Ozone Attainment Plan.
- Significant construction-based pollutant emissions.
- Significant operational pollutant emissions.
- Significant emissions of Toxic Air Contaminants.
- Creation of construction, traffic, and operational noise above standards.
- Creation of new noise-sensitive land uses within airport noise areas.
- Loss of availability of aggregate resources.
- Impacts on water supply (both availability of water and infrastructure required).
- Impacts to habitat and individuals of special status species.
- Impacts to raptors, migratory birds, and other wildlife.
- Impacts to jurisdictional waters of the U.S.
- Impacts to animal movement corridors.
- Loss of native and landmark trees.
- Disturbance of cultural resources and human remains.
- Environmental impacts resulting from the need for more wastewater infrastructure.
- Degradation of the existing visual character of the area.

The General Plan EIR also identified cumulative impacts that would be cumulatively considerable and significant and unavoidable. Those impacts included:

- Conflicts with area land use plans.
- Conversion of farmland to other uses and agricultural/urban interface conflicts.
- Substantial population, housing, and employment growth.
- Significant impacts to area traffic level of service.
- Increases in regional ozone and particulate matter emissions.
- Increases in regional traffic and operational noise.

- Cumulative loss of mineral resources.
- Increased regional demand for water supply and need for water infrastructure.
- Cumulative loss of biological resources.
- Cumulative loss of cultural resources.
- Increases in wastewater treatment capacity and infrastructure.
- Changes in area visual character and landscape.

Detailed information regarding both the General Plan's project impacts and cumulative impacts identified above is included in the General Plan EIR. The General Plan EIR is available online at https://www.cityofranchocordova.org/government/planning/general-plan and on request at the City at the following address:

City of Rancho Cordova Planning Department
2729 Prospect Park Drive
Rancho Cordova, CA 95670

This EIR hereby incorporates the General Plan EIR by reference.

1.4 KNOWN RESPONSIBLE AND TRUSTEE AGENCIES

As required by CEQA, this EIR defines lead, responsible, and trustee agencies. The City of Rancho Cordova is the "Lead Agency" for the Project because it holds principal responsibility for approving the Project. The term "Responsible Agency" includes all public agencies other than the Lead Agency that have discretionary approval power over the Project or an aspect of the Project (CEQA Guidelines Section 15381). For the purpose of CEQA, a "Trustee" agency has jurisdiction by law over natural resources that are held in trust for the people of the State of California (CEQA Guidelines Section 15386).

The following agencies are considered Responsible or Trustee Agencies for this Project, and may be required to issue permits or approve certain aspects of the proposed Project:

- Take permits from the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) under the Federal and State Endangered Species Acts;
- Water quality permitting (NPDES and water quality certifications) under the Clean Water Act by the Central Valley Regional Water Quality Control Board;
- Wetland fill permits under Section 404 of the Clean Water Act by the U.S. Army Corps of Engineers;
- Approval of infrastructure details for water supply facilities by the Sacramento County Water Agency; and
- Approval of infrastructure details for wastewater collection facilities by Sacramento Area Sanitation District.

1.5 ENVIRONMENTAL REVIEW PROCESS

The review and certification process for the EIR has involved, or will involve, the following general procedural steps:

NOTICE OF PREPARATION AND INITIAL STUDY

The City circulated an Initial Study and NOP of an EIR for the proposed Project on July 6, 2018 to trustee agencies, the State Clearinghouse, and the public. A public scoping meeting was held on July 26, 2018 to present the Project description to the public and interested agencies, and to receive comments from the public and interested agencies regarding the scope of the environmental analysis to be included in the Draft EIR. Concerns raised in response to the NOP were considered during preparation of the Draft EIR. The NOP and responses to the NOP by interested parties are presented in Appendix A.

DRAFT EIR

This document constitutes the Draft EIR. The Draft EIR contains a description of the Project, description of the environmental setting, identification of Project impacts, and mitigation measures for impacts found to be significant, as well as an analysis of Project alternatives, identification of significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. This Draft EIR identifies issues determined to have no impact or a less than significant impact, and provides detailed analysis of potentially significant and significant impacts. Comments received in response to the NOP were considered in preparing the analysis in this EIR. Upon completion of the Draft EIR, the City has filed the Notice of Completion (NOC) with the State Clearinghouse of the Governor's Office of Planning and Research to begin the public review period.

PUBLIC NOTICE/PUBLIC REVIEW

The City has provided a public notice of availability for the Draft EIR, and invites comment from the general public, agencies, organizations, and other interested parties. Consistent with CEQA, a forty-five (45) day review period is required for this Draft EIR. Public comment on the Draft EIR will be accepted in written form. All comments or questions regarding the Draft EIR should be addressed to:

June Cowles, Senior Planner
City of Rancho Cordova
Planning Department
2729 Prospect Park Drive
Rancho Cordova, CA 95670
jcowles@cityofranchocordova.org

RESPONSE TO COMMENTS/FINAL EIR

Following the public review period, a Final EIR will be prepared. The Final EIR will respond to written comments received during the public review period and to oral comments received at a public hearing during such review period.

CERTIFICATION OF THE EIR/PROJECT CONSIDERATION

The City will review and consider the Final EIR. If the City finds that the Final EIR is "adequate and complete", the City Council may certify the Final EIR in accordance with CEQA. The rule of adequacy generally holds that an EIR can be certified if:

1) The EIR shows a good faith effort at full disclosure of environmental information; and

2) The EIR provides sufficient analysis to allow decisions to be made regarding the proposed project in contemplation of environmental considerations.

The level of detail contained throughout this EIR is consistent with Section 15151 of the CEQA Guidelines and recent court decisions, which provide the standard of adequacy on which this document is based. The Guidelines state as follows:

> *An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of the environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure.*

Following review and consideration of the Final EIR, the City may take action to approve, modify, or reject the Project. A Mitigation Monitoring and Reporting Program, as described below, would also be adopted in accordance with Public Resources Code Section 21081.6(a) and CEQA Guidelines Section 15097 for mitigation measures that have been incorporated into or imposed upon the Project to reduce or avoid significant effects on the environment. This Mitigation Monitoring and Reporting Program will be designed to ensure that these measures are carried out during Project implementation, in a manner that is consistent with the EIR.

1.6 ORGANIZATION AND SCOPE

Sections 15122 through 15132 of the State CEQA Guidelines identify the content requirements for Draft and Final EIRs. An EIR must include a description of the environmental setting, an environmental impact analysis, mitigation measures, alternatives, significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. Discussion of the environmental issues addressed in the Draft EIR was established through review of environmental and planning documentation developed for the Project, environmental and planning

documentation prepared for recent projects located within the City of Rancho Cordova, applicable local and regional planning documents, and responses to the NOP.

This Draft EIR is organized in the following manner:

EXECUTIVE SUMMARY

This Executive Summary summarizes the characteristics of the proposed Project, known areas of controversy and issues to be resolved, and provides a concise summary matrix of the Project's environmental impacts and possible mitigation measures. This chapter identifies alternatives that reduce or avoid at least one significant environmental effect of the proposed Project.

CHAPTER 1.0 – INTRODUCTION

Chapter 1.0 briefly describes the purpose of the environmental evaluation, identifies the lead, trustee, and responsible agencies, summarizes the process associated with preparation and certification of an EIR, and identifies the scope and organization of the Draft EIR.

CHAPTER 2.0 – PROJECT DESCRIPTION

Chapter 2.0 provides a detailed description of the proposed Project, including the location, intended objectives, background information, the physical and technical characteristics, including the decisions subject to CEQA, related infrastructure improvements, and a list of related agency action requirements.

CHAPTER 3.0 – ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

Chapter 3.0 contains an analysis of environmental topic areas as identified below. Each subchapter addressing a topical area is organized as follows:

Environmental Setting. A description of the existing environment as it pertains to the topical area.

Regulatory Setting. A description of the regulatory environment that may be applicable to the Project.

Impacts and Mitigation Measures. Identification of the thresholds of significance by which impacts are determined, a description of Project-related impacts associated with the environmental topic, identification of appropriate mitigation measures, and a conclusion as to the significance of each impact after the incorporation of mitigation measures.

The following environmental topics are addressed in this section:

- Aesthetics and Visual Resources
- Air Quality
- Biological Resources
- Cultural and Tribal Resources
- Geology and Soils

- Greenhouse Gases, Climate Change, and Energy
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use
- Noise
- Population and Housing
- Public Services and Recreation
- Transportation and Circulation
- Utilities

CHAPTER 4.0 – OTHER CEQA-REQUIRED TOPICS

Chapter 4.0 evaluates and describes the following CEQA required topics: impacts considered less-than-significant, significant and irreversible impacts, growth-inducing effects, cumulative, and significant and unavoidable environmental effects.

CHAPTER 5.0 – ALTERNATIVES TO THE PROJECT

State CEQA Guidelines Section 15126.6 requires that an EIR describe a range of reasonable alternatives to the Project, which could feasibly attain the basic objectives of the Project and avoid and/or lessen any significant environmental effects of the Project. Chapter 5.0 provides a comparative analysis between the environmental impacts of the Project and the selected alternatives.

CHAPTER 6.0 – REPORT PREPARERS

This section lists all authors and agencies that assisted in the preparation of the EIR, by name, title, and company or agency affiliation.

CHAPTER 7.0 – REFERENCES

This section lists all source documents used in the preparation of the EIR.

APPENDICES

This section includes all notices and other procedural documents pertinent to the EIR, as well as technical material prepared to support the analysis. The EIR appendices are available in electronic format. The appendices can be viewed online at:

https://www.cityofranchocordova.org/government/planning/environmental-review/environmental-documents

1.7 SIGNIFICANCE CRITERIA

In general, CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial" adverse change in the physical environment. A potential impact is considered significant if a project would substantially degrade the environmental quality of land,

air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance (CEQA Guidelines §§15360, 15382).

Definitions of significance vary with the physical condition affected and the setting in which the change occurs. The CEQA Guidelines set forth physical impacts that trigger the requirement to make "mandatory findings of significance" (CEQA Guidelines §15065).

This CEQA document relies on three levels of impact significance:

1. Less-than-significant impact, for which no mitigation measures are warranted;
2. Significant impact that can be mitigated to a level that is less than significant; and
3. Significant impact that cannot be mitigated to a level that is less than significant. Such impacts are significant and unavoidable.

Each resource area uses a distinct set of significance criteria. For example, a proposed project resulting in an exposure of persons to noise levels in excess of standards established in the local general plan or community plan would be considered a significant impact. If existing levels, without the proposed project, already exceed the standards, an increase in noise levels of 3 dB attributable to the proposed would be considered significant. Construction of appropriate sound walls could reduce the impact to a less-than-significant level. If criteria for determining significance relative to a specific environmental resource impact are not identified in the Guidelines, criteria were developed for this Draft EIR consistent with the past pattern and practice of the City of Rancho Cordova.

The significance criteria are identified at the beginning of the impacts discussion for each resource area. These significance criteria promote consistent evaluation of impacts for all alternatives considered, even though significance criteria are necessarily different for each resource considered.

1.8 COMMENTS RECEIVED ON THE NOTICE OF PREPARATION

The City received seven comments on the NOP for the proposed Project Draft EIR. A brief summary of each comment letter is provided in the list below. A copy of each letter is provided in Appendix A of this Draft EIR. A public scoping meeting was held on July 26, 2018 to present the project description to the public and interested agencies, and to receive comments from the public and interested agencies regarding the scope of the environmental analysis to be included in the Draft EIR.

1. California Department of Fish and Wildlife (August 6, 2018);
2. Central Valley Regional Water Quality Control Board (July 30, 2018);
3. Cordova Recreation & Park District (August 3, 2018);
4. County of Sacramento, Department of Transportation (July 8, 2018);
5. Sacramento Area Sewer District (August 6, 2018);
6. Sacramento Metropolitan Air Quality Management District (July 13, 2018); and
7. Sacramento Municipal Utilities District (August 6, 2018).

1.9 AREAS OF CONTROVERSY

Aspects of the proposed project that could be of public concern include the following:

- The size of the proposed project and the associated potential impacts related to air quality emission levels, without mitigation;
- The proposed park areas and the potential impacts related to the transmission lines, irrigation, operational noise, transportation facilities, and light and glare;
- The proposed uses which would lie beneath the on-site transmission lines;
- Concerns regarding the project's traffic-related impacts to Sacramento County facilities;
- Concerns regarding the amount of park land provided.

This chapter provides a comprehensive description of The Ranch Project (Project), including proposed land uses, infrastructure improvements, off-site improvements, requested entitlements, and Project objectives.

Figures referenced throughout this section are located at the end of the chapter.

2.1 PROJECT LOCATION AND ENVIRONMENTAL SETTING

PROJECT LOCATION

The Project site consists of approximately 530 acres located in the City of Rancho Cordova city limits. The Project site is bound by existing single-family residential uses to the north, vacant land to the east, vacant land to the south, and Rancho Cordova Parkway, single family residential, and vacant land on the west. The Project parcel is Sacramento County Assessor's Parcel Number (APN) 067-004-0008. The Project's regional location is shown in Figure 2.0-1 and the Project area and site boundary are shown in Figure 2.0-2.

PROJECT SITE AND SURROUNDING LAND USES

The Project site is currently vacant and has been previously used for agricultural uses (cattle grazing). The topography of the site exhibits low relief topography with elevations ranging between 170 and 210 feet above mean sea level (MSL). The slopes throughout the site range from approximately zero to eight percent. The site is characterized by moderate rolling hills and areas of extensive flatlands, with wetlands, vernal pools, and seasonal drainage courses scattered throughout the site. A headwater tributary of Morrison Creek traverses the Project site, entering at the northeast corner and flowing generally to the southwest. A total of 21.53 acres of jurisdictional aquatic resources have been mapped with the Project site, including: 2.92 acres of depressional seasonal wetlands, 15.04 acres of vernal pools, 1.66 acres of riverine seasonal wetlands, 0.06 acres of riverine seasonal wet swales, 1.54 acres of intermittent drainages, and 0.30 acres of drainage basin outfalls. An aerial view of the site is shown in Figure 2.0-3.

The property is traversed by a 275-foot-wide utility easement occupied by a 230-kV Pacific Gas and Electric (PG&E) transmission line, one 230-kV Sacramento Municipal Utility District (SMUD) transmission line, and one 69-kV SMUD sub-transmission line. No other public utilities (water, sewer, drainage) are located on site.

The Project site is bound by the Sunridge Specific Plan to the north, east, and west, and by the SunCreek Specific Plan to the south and east. Land uses anticipated to the east and south of the Project site by the Sunridge Specific Plan and the SunCreek Specific Plan include low, medium, and high density residential uses, commercial mixed uses (retail, office, and retail professional), and neighborhood parks. Other land uses located nearby include new elementary, junior and senior high schools.

2.2 PROJECT BACKGROUND

The Project site has been the subject of previous environmental review. The Project site is located within the Sunrise Douglas Community Plan and Sunridge Specific Plan areas, which were approved by Sacramento County prior to the incorporation of the City.

In 2006, the City certified the Preserve at Sunridge EIR and subsequently approved entitlements for the Preserve at Sunridge project. The Preserve at Sunridge project was proposed on the same site as the currently proposed The Ranch Project. The Preserve at Sunridge included 2,703 dwelling units (both single family and multi-family residential) commercial and office, neighborhood parks, an elementary school, detention/water quality basins, an open space/wetland preserve, pedestrian facilities, bikeways, and parkways/drainage corridors. This previous project included a 92.4-acre wetland preserve located at the southwest corner of the site. On September 5, 2006 following the City's approval of the Preserve at Sunridge project, the California Native Plant Society (CNPS) filed a petition for writ of mandate in Sacramento County Superior Court seeking to set aside the City's actions. The case was litigated in Superior Court and appealed to the Court of Appeal, Third Appellate District. On March 24, 2009, the Third Appellate District filed an opinion upholding the judgment of the Superior Court with respect to the determination of the Preserve at Sunridge project's inconsistency with the City's General Plan regarding interconnection of preserved habitat areas that support special-status plant and animal species, and regarding mitigation on such species. The case was sent back to the Sacramento County Superior Court, which entered final judgment issuing a peremptory writ of mandate on September 28, 2009. The writ of mandate nullified all of the City's approvals for the Preserve at Sunridge project, including certification of the EIR.

During the course of the court proceedings, ownership of the Project site was transferred to K. Hovnanian Communities. The Preserve at Sunridge project was redesigned and resubmitted as The Ranch at Sunridge to the City in 2010. In 2011, the City issued a Notice of Preparation for an Environmental Impact Report/Environmental Impact Statement. The Environmental Impact Report/Environmental Impact Statement (EIR/EIS) was not completed.

The Project Applicant Team has submitted an application to the U.S. Army Corps of Engineers for a Clean Water Act (CWA) Section 404 permit associated with discharges of fill material into waters of the United States for fill of 6.37 acres of waters of the United States and temporary impacts to approximately 0.01 acres of waters of the United States. The permit is being processed by the U.S. Army Corps of Engineers.

2.3 PROJECT GOALS, OBJECTIVES, AND ENTITLEMENT REQUESTS

GOALS AND OBJECTIVES

Consistent with California Environmental Quality Act (CEQA) Guidelines Section 15124(b), a clear statement of objectives and the underlying purpose of the Project shall be discussed. The principal objective of the Project is the approval and subsequent implementation of The Ranch Project. The quantifiable objectives of the Project include development of the approximately 530-acre site

with: 1,725 residential units, including 737 age restricted single-family units, 735 non-age restricted single-family units, and up to 253 multifamily units, 38 of which would be age-restricted multifamily units, with a club house for the age-restricted senior community, and other recreational opportunities; dedication of 5.16 net acres for commercial use for development of a neighborhood-serving shopping center of approximately 32,000 square feet (s.f.); and dedication of 8.43 net acres for multi-family residential uses in accordance with the City of Rancho Cordova's Affordable Housing Plan.

The Project also identifies the following objectives:

- Create a high-quality development that implements the vision of the General Plan, which designates the Project site for development with a local town center, a mix of residential densities, and a natural resources preserve;
- Respect the Project site's existing natural features through preservation of 199.5 acres of wetlands, vernal pools, and open space;
- Provide a residential development that would assist the City in meeting its housing needs, including a range of housing types to serve the senior population;
- Provide a residential development that would assist the City in meeting its affordability goals providing housing at many price points and attract residents from different areas;
- Create a unique age-restricted community that provides a mix of housing types and amenities, including a club house and recreation facility;
- Accommodate neighborhood-serving commercial uses as part of the town center;
- Implement the City's Bicycle and Pedestrian Master Plans through providing an on-site bicycle and pedestrian network that is accessible by the general public and provides opportunities for connectivity with bicycle and pedestrian facilities on adjacent properties; and
- Implement the City's Transit Master Plan through providing a Signature Transit Station and accommodating the Signature Transit Route along Rancho Cordova Parkway.

ENTITLEMENT REQUESTS AND OTHER APPROVALS

The City of Rancho Cordova is the Lead Agency for the Project, pursuant to the State Guidelines for Implementation of the CEQA, Section 15050.

Implementation of the Project would require the following entitlements and approvals from the City of Rancho Cordova:

- Certification of the EIR;
- Adoption of the Mitigation Monitoring and Reporting Program;
- Approval of the General Plan Amendment from Planning Area to Low Density Residential (LDR), Medium Density Residential (MDR), Residential Mixed Use (RMU), Commercial Mixed Use (CMU), Parks and Open Space (P/OS), and Natural Resources (NR);
- Approval of the Community Plan Amendment from UDA to LDR, MDR, RMU, CMU, P/OS, and NR;

- Approval of the Rezone from Agriculture, 80-Acre Minimum (AG-80) (County) to The Ranch Special Planning Area (SPA) (City);
- Approval of The Ranch Special Planning Area regulatory document;
- Approval of a Large Lot Map;
- Approval of the Tentative Subdivision Map; and
- Approval of design review, improvement plans, and building permits.

Other discretionary approvals that may be required by other governmental agencies may include, but are not limited to, the following:

- Participation in the South Sacramento Habitat Conservation Plan (SSHCP) and issuance of incidental take under the SSHCP;
- Take permits from the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) under the Federal and State Endangered Species Acts;
- Water quality permitting (NPDES and water quality certifications) under the CWA by the Central Valley Regional Water Quality Control Board;
- Wetland fill permits under Section 404 of the CWA by the U.S. Army Corps of Engineers;
- Approval of infrastructure details for water supply facilities by the Sacramento County Water Agency; and
- Approval of infrastructure details for wastewater collection facilities by Sacramento Area Sanitation District.

2.4 PROJECT DESCRIPTION

PROJECT OVERVIEW

The Project proposes an approximately 530-acre residential community. Development would include approximately 1,725 residential units, including 737 age restricted single-family units, 735 non-age restricted single-family units, and up to 253 multifamily units (38 of which would be age-restricted), two commercial parcels totaling 5.16 net acres, a community clubhouse, a park and trail system, open space, and supporting infrastructure. Figure 2.0-4 depicts the Project characteristics and Table 2.0-1 summarizes the proposed uses.

TABLE 2.0-1: LAND USE SUMMARY

PROPOSED USE	*GROSS ACRES*	*NET ACRES*	*DWELLING UNITS*	*NON-RESIDENTIAL (SQUARE FEET)*	*GROSS DENSITY (DU/AC)*	*NET ACREAGE AS % OF TOTAL*
Single Family Residential – Non-Age Restricted						
Village 1 (60x105)	19.58	14.10	86	-	4.4	2.7%
Villages 2, 3 (50x105)	22.48	15.99	114	-	5.1	3.0%
Village 4 (45x105)	19.05	14.57	116	-	6.1	2.7%
Villages 5, 6, 7 (45x85)	16.57	10.98	113	-	6.8	2.1%
Village 8 (36x78.5)	14.11	8.47	132	-	9.4	1.6%
Villages 9, 10, 11 (35x78)	23.62	13.76	174	-	7.4	2.6%
Subtotal	*115.41*	*77.87*	*735*	-	*6.4*	*14.7%*
Single Family Residential – Age Restricted						
Village 12 (60x105)	31.98	19.27	112	-	3.5	3.6%
Village 13 (varying lot sizes)	11.41	7.32	43	-	3.8	1.4%
Villages 14, 15, 17, 19 (50x105)	43.98	32.2	256	-	5.8	6.1%
Village 16 (40x105)	7.96	6.37	64	-	8.0	1.2%
Villages 18 (40x110)	5.37	4.34	43	-	8.0	0.8%
Village 20 (56x70)	7.80	5.78	55	-	7.1	1.1%
Village 21 (35x110)	7.93	6.25	68	-	8.6	1.2%
Village 22 (56x70)	14.5	9.38	96	-	6.6	1.8%
Subtotal	*130.93*	*90.91*	*737*	-	*5.6*	*17.1%*
Multifamily Residential						
Village 23	7.17	7.17	215	-	30.0	1.4%
Lot A (Multifamily)	1.26	1.26	38	-	30.0	0.2%
Subtotal	*8.43*	*8.43*	*253*	-	*30.0*	*1.6%*
Commercial						
Villages 24, 25	5.41	5.16	-	32,000	-	1.0%
Subtotal	*5.41*	*5.16*	-	*32,000*	-	*1.0%*
Parks and Community Facilities						
Park and Recreation Center (Lot A)	5.17	4.19	-	21,000	-	0.8%
Private Park (Lots B-C)	3.30	2.98	-	-	-	0.6%
Public Park (Lot D)	10.96	10.78	-	-	-	2.0%
Passive Park/Open Space (Lot T)	2.10	2.10	-	-	-	0.2%
Subtotal	*21.53*	*20.05*	-	21,000	-	*3.6%*
Open Space						
Protected Areas (Lots E-F)	199.50	199.50	-	-	-	37.6%
Protected Area / Landscape (Lots G-O)	10.70	26.37	-	-	-	5.0%
Water Quality / Detention (Lots P)	6.11	5.98	-	-	-	1.1%
Open Space (Lots Q-S, U)	14.74	14.18	-	-	-	2.8%
Public Landscape Lot (Lots V-GGG)	-	7.75	-	-	-	1.5%
Private Landscape Lot (Lots HHH-XXX)	-	2.57	-	-	-	0.5%
Subtotal	*231.05*	*256.35*	-	-	-	*48.5%*
Roads						
Private Drive (Lots 1-25)	-	1.10	-	-	-	0.2%
Private Right-of-Way (Lots 26-27)	-	32.30	-	-	-	6.1%
Minor Right-of-Way	-	20.59	-	-	-	3.9%
Major Right-of-Way	17.34	17.34	-	-	-	3.3%
Subtotal	*17.34*	*71.33*	-	-	-	*13.7%*
TOTAL	**530.10**	**530.10**	**1,725 (1,472 SF, 253 MF)**	**53,000**	**6.77**	**100.0%**

NOTE: THE GROSS ACREAGES SHOWN HERE EXCLUDE RANCHO CORDOVA PARKWAY AND CHRYSANTHY BOULEVARD ONLY. VILLAGE NET ACREAGE EXCLUDES THE PROTECTED AREA/LANDSCAPE LOTS, PRIVATE AND PUBLIC LANDSCAPE LOTS, PRIVATE DRIVES, AND PRIVATE AND PUBLIC RIGHT-OF-WAYS.

RESIDENTIAL

The Project includes three primary residential components: an unrestricted single-family community, an age-restricted community with both single family and multifamily components, and a non-age restricted multifamily parcel.

Single Family – Unrestricted

The single-family community, comprised of Villages 1 through 11, is located in the northwest area of the Project site, abutting residential neighborhoods to the north and Rancho Cordova Parkway to the west. This area would include 735 single family residences within 11 residential neighborhoods. Village 1 would have 86 residential lots with a typical dimension of 60' by 105'. Villages 2 and 3 would have 114 residential lots with a typical dimension of 50' by 105'. Village 4 would have 116 residential lots with a typical dimension of 45' by 105'. Villages 5, 6, and 7 would have 113 residential lots with a typical dimension of 45' by 85'. Village 8 would have 132 residential lots with a typical dimension of 36' by 78.5'. Villages 9, 10, and 11 would have 174 residential lots with a typical dimension of 35' by 78'.

Multifamily – Unrestricted

An 7.17-acre multifamily lot (Village 23) is designated High Density Residential and would accommodate approximately 215 multifamily units.

Single Family and Multifamily – Four Seasons Age-Restricted

The Four Seasons age-restricted single-family community is located in the southeast portion of the Project site, and borders the approved Sunridge Specific Plan to the south and east. The Four Seasons community is separated from the unrestricted single-family community by the wetlands preserve that traverses the Project site from the northeast to the southwest. Village 12 would have 112 residential lots with a typical dimension of 60' by 105'. Village 13 would have 43 residential lots with varying lot sizes. Villages 14, 15, 17, and 19 would have 256 residential lots with a typical dimension of 50' by 105'. Village 16 would have 64 residential lots with a typical dimension of 40' by 105'. Village 18 would have 43 residential lots with a typical dimension of 40' by 110'. Village 20 would have 55 residential lots with a typical dimension of 56' by 70'. Village 21 would have 68 residential lots with a typical dimension of 35' by 110'. Village 22 would have 96 residential lots with a typical dimension of 56' by 70'. Additionally, a 21,000 s.f. community clubhouse would be developed in this area. Lot A near the community clubhouse would also allow for 38 multifamily residential units.

COMMERCIAL

Two commercial parcels (Villages 24 and 25) are located in the northwest portion of the site along Rancho Cordova Parkway, near the entrances to the unrestricted single-family community with primary access from from Rancho Cordova Parkway. The parcels are approximately 1.00 and 4.16 net acres and would accommodate approximately 32,000 s.f. of commercial uses.

POPULATION AND EMPLOYMENT

The Project would accommodate a population of approximately 4,319 residents and 106 employees. The Project residents estimate was calculated using the following persons per housing unit rates: 2.84 persons per non-age restricted single-family unit, 2.89 persons per non-age-restricted multifamily unit, 2.08 persons per age-restricted single-family units, and 2.05 persons per age-restricted multifamily units.[1]The Project employees estimate was calculated using a rate of one employee per 500 s.f.[2]

OPEN SPACE

The Project would preserve approximately 199.5 acres as a nature preserve that would be deeded to a third-party conservation entity. The Project includes approximately 14.8 acres of existing aquatic resources, including 1.85 acres of depressional seasonal wetlands, 9.97 acres of vernal pools, 1.15 acres of riverine seasonal wetlands, 1.53 acres of intermittent drainages, and 0.30 acres of drainage basin outfalls. The Project applicant would incorporate protections for the preservation of wetland resources within the preserve, including preserve fencing, long-term funding and management of the preserve in perpetuity, and protection of the preserve from drainage and runoff generated from development areas through the construction of several detention basins throughout the site.

RECREATION

Park and recreation facilities totaling 20.05 acres (7.17 net acres of private facilities provided in Lots A, B, and C and 12.88 net acres of public parks provided in Lots D and T) would be provided by the Project. The Project would use a combination of land dedication and in-lieu fees to comply with the requirements of Chapter 22.40 of the City of Rancho Zoning Ordinance. In addition to the proposed park lots, the Project would provide parks and recreation facilities on approximately 0.2575 acres within Village 23 to serve the proposed multifamily use.

Approximately 2.5 miles of public trails would be developed throughout the Project site, as described below under Pedestrian and Bicycle Connectivity. Trails along the preserve boundaries would be designed in accordance with the South Sacramento Habitat Conservation Plan (SSHCP) standards.

[1] The persons per housing unit rates are based on the persons per household rates from the 2013-2017 American Community Survey 5-Year Estimates data for the City of Rancho Cordova, California, Table S0102. The American Community Survey includes average household size based on tenure for both the general population and the 60+ year old cohort.

2 Table LU-6 of the General Plan projects 15,026 employees associated with 7,513,133 s.f. of commercial uses under General Plan buildout conditions; these projections yield a rate of 1 employee per 500 s.f. (15,026 divided by 7,513,133 s.f.).

As part of the public recreational facilities, a public park (10.78 net acres) would be provided within the single family (unrestricted) community. The utility corridor would be located along the eastern boundary of the park and would provide an additional 7.86 net acres of public open space that would include passive uses that would complement the park site. A 2.1-acre passive park (Lot T) would also be developed in the single family (unrestricted) community.

Within the age-restricted portion of the Project, approximately 7.17 acres would be dedicated for recreational purposes. The recreation center (4.19 net acres) would include a clubhouse serving as a recreation, community gathering, activity, and information hub for residents. A separate 1.58-acre community garden (Lot B) and a 1.4-acre linear park (Lot C) would be provided within the age-restricted community. In addition, multiple paseos would be provided throughout the age-restricted community to provide connectivity and off-road walkability.

CIRCULATION

The proposed vehicular, pedestrian, and bicycle circulation improvements are discussed in detail below.

Vehicular Circulation

On-site infrastructure associated with the Project would include the construction of internal and external access roads and a network of bicycle and pedestrian trails. Primary access would be from Rancho Cordova Parkway. The Project would provide for future connections to an extension of Chrysanthy Boulevard east of the Project site.

Rancho Cordova Parkway would be constructed as a minor arterial roadway with an exception along existing and proposed nature preserves. Portions of the roadway along existing and proposed nature preserves would be constructed with an attached sidewalk, as is currently constructed at the western side of the road, and an eight-foot-wide divided median landscaped with trees and shrubs. The primary entrance to the Project site at the intersection of Chrysanthy Boulevard and Rancho Cordova Parkway would be controlled by a four-way stop or traffic signal. A second right-in, right-out entrance from Rancho Cordova Parkway would be located to the south of the primary entrance.

Chrysanthy Boulevard would be constructed as a minor arterial with 74-foot right-of-way, with a 12-foot travel lane, 11-foot travel lane, 4-foot bike lane, and 3-foot gutter in each direction separated by a 14-foot landscaped median, and a 15- to 25-foot landscape corridor for landscaping and sidewalks. At the Preserve crossing, Chrysanthy Boulevard's 14' median would be replaced by a 10' turn pocket and 1- to 3-foot hardscape median, and the landscaping and sidewalks would be reduced to 10 feet on each side of the road, as shown on Figure 2.0-4.

North Campus Road, located along the southern boundary of the age-restricted community, would include one travel lane and frontage improvements along the residential portion of the Project site.

Interior streets serving the residential communities would have attached sidewalks and rolled curbs along residential frontages.

Pedestrian and Bicycle Circulation

A bicycle/pedestrian trail located along the existing utility corridor would connect to an existing trail located north of the site and would provide connections to the two trails located along the preserve. On the northern side of Chrysanthy Boulevard, a preserve trail would extend from the bike/pedestrian trail located within the utility corridor along Chrysanthy Boulevard, then would follow the northern boundary of the age-restricted community to the eastern border of the Project site. A southern preserve trail would extend along Rancho Cordova Parkway, south of the entrances to the Project site, and would cross the Project site south of the unrestricted community, connecting with Chrysanthy Boulevard in two locations, then following the western edge of the age-restricted community to the south.

In addition, the Project will include sidewalks, stop signs, standard pedestrian crossing warning signs, lane striping to provide a bicycle lane along applicable roadways, bicycle parking, signs to identify pedestrian and bicycle paths, pedestrian signal heads, and a tunnel crossing for the Class I trail at Chrysanthy Boulevard. Sidewalks will be constructed as part of the frontage improvements along all new roadway construction for Jaeger Road/Rancho Cordova Parkway and Chrysanthy Boulevard in conformance with applicable design standards.

Traffic calming features incorporated into the Project include street design features, such as narrower streets, limited single-loaded streets, parking on both sides of the street, posted speed limit signs, planter strips with street trees, and horizontal shifts (lane centerline that curves or shifts), and intersection traffic calming features, including marked crosswalks, count-down signal timers where appropriate, curb extensions, channelization islands, median islands, and tight corner radii.

Parking and Other Paved Areas

The Project is anticipated to include approximately 1.0 acres of paved parking areas associated with proposed parks and recreation uses and is anticipated to have approximately 1.0 acres of paved trail surfaces.

SUSTAINABILITY FEATURES

The Project proposes a number of sustainability features to reduce water consumption, reduce energy and natural gas consumption, and reduce greenhouse gas emissions. These features include:

- Tree Planting: A minimum of 2,240 new trees would be planted as part of the residential, commercial, multifamily, park, and trail uses.
- Lighting: All outdoor lighting will be energy-efficient (i.e., LED or better).
- Renewable Energy: Generate 95% of electricity via renewable energy via either on-site energy generation and/or through a contract with SMUD.

- All-Electric. 306 units will be all-electric homes, with no natural gas.
- Energy-efficient Appliances: Install energy-efficient (i.e., Energy Star) appliances.
- Low-Flow Appliances: Install low-flow kitchen and bathroom appliances to reduce water consumption.
- Irrigation: Use water-efficient irrigation systems (automatic rain shut-off, maximum gallon per minute restriction, WiFi connectivity) to reduce water waste.
- Turf: Minimize turf for residential uses to 70% less than the maximum allowed turf area to reduce water use.
- Electric Vehicle: Install EV charging stations throughout the Project site, such that at least 50% of single family residences and 5% of parking spaces within the commercial, park and recreation, and multi-family land uses will have EV charging stations to reduce reliance on gasoline-fueled vehicles.

UTILITIES INFRASTRUCTURE

The proposed water, sewer, and drainage improvements are discussed in detail below.

Water System

The Project is located within the Sacramento County Water Agency (SCWA) Zone 40 water service area. The Project would connect to SCWA existing water supply infrastructure located at the intersection of Rancho Cordova Parkway and Chrysanthy Boulevard. New water distribution pipelines and valves would be provided within the Project site, primarily within the roadway right-of-ways, to serve the proposed development. The Project would use water-efficient irrigation systems.

Sewer System

The Project is located within the Sacramento Area Sewer District (SASD) and Sacramento Regional County Sanitation District (Regional San) service areas. New sewer conveyance pipelines would be provided within the Project site, primarily within the roadway right-of-ways, to serve the proposed development. Project sewer infrastructure included 8-inch in-tract gravity sewer pipes that will collect Project sewer flows from individual lots and convey the flows to a 12- to 21-inch trunk main sewer pipe in Chrysanthy Boulevard extending from the eastern Project boundary to the western boundary of the Project, and a 24-inch gravity sewer that will connect the trunk main in Chrysanthy Boulevard to the existing trunk main in Rancho Cordova Parkway, located at the intersection of Rancho Cordova Parkway and Chrysanthy Boulevard. Sewer flows from the Project would be conveyed by SASD facilities to Regional San interceptor, collector, and trunk facilities and would then be conveyed to the Sacramento Regional Wastewater Treatment Plant for treatment.

Off-site improvements may include upgrades, such as replacement of pumps, electrical equipment, and the diesel generator, to the existing sewer pump station, SASD S-1114-32, located southwest of Chrysanthy Boulevard and Anatolia Drive, that serves the eastern part of Rancho Cordova.

Storm Drainage System

The Project would include development of on-site drainage and water quality basins to accommodate post-construction peak stormwater flows and provide for water quality treatment. The on-site system would connect to the City's stormwater drainage system.

PUBLIC SERVICES

The public services which would serve the Project are described below.

Electricity, Natural Gas, and Solid Waste

Electricity would be provided by SMUD. The residential portion of the Project's electricity demand would be provided by either on-site renewable energy or supplied via a contract with SMUD for purchase of renewable energy. Additionally, all of the on-site lighting would be LED, high-efficiency lighting. Natural gas would be provided by PG&E. Solid waste collection would be provided by Republic Services.

Public Services

Police services would be provided by the City of Rancho Cordova. Fire protection would be provided by Sacramento Metropolitan Fire District. Public school services would be provided by Elk Grove Unified School District.

GENERAL PLAN AMENDMENT

The Project site is currently designated Planning Area by the General Plan Land Use Map and is identified as part of the Suncreek/Preserve Planning Area by the City's General Plan. Table 2.0-2 summarizes the proposed General Plan land use designations:

TABLE 2.0-2: GENERAL PLAN LAND USE DESIGNATIONS

LAND USE DESIGNATION	*EXISTING*	*PROPOSED*
Planning Area	530.1	--
Low Density Residential (LDR)	--	31.97
Medium Density Residential (MDR)	--	223.85
High Density Residential (HDR)	--	8.81
Commercial (C)	--	10.16
Parks and Open Space (P/OS)	--	38.03
Natural Resources (NR)	--	199.5
Right-of-Way	--	17.8

The existing and proposed land use designations are shown in Figure 2.0-5.

REZONE

The Project site is currently zoned Agriculture, 80-Acre Minimum (AG-80). The entire Project site would be rezoned from AG-80 to Special Planning Area (SPA). The Ranch SPA zoning will establish development standards and design guidelines to ensure quality and consistency in the design and implementation of the Project. The SPA document is regulatory in nature and will serve as zoning

for the Project site. Development plans, subdivision maps, and site plans for the Project must be consistent with both the SPA and the City of Rancho Cordova General Plan.

SPECIAL PLANNING AREA HANDBOOK

The purpose of The Ranch SPA Handbook is to guide future development within The Ranch Project site and allow for a more creative implementation of the General Plan. Chapter 2, Regulatory Framework, describes the Project's relationship to the existing regulatory framework, including the City's General Plan and Zoning Code. Sections 3.1 and 3.2 address land use designations and zoning, respectively. Section 3.3 addresses permitted land uses, density, and establishing design requirements for each neighborhood area (Gateway Neighborhood, Parkview Neighborhood, and Four Seasons Neighborhood). Section 3.4, Architectural Styles, describes architectural styles permitted by the SPA Handbook. Section 3.5, Development Standards, addresses lot size, width, depth, and coverage, coverage, building heights, and setbacks for single family, multifamily, and commercial uses. Section 3.6, Circulation Design Standards, establishes the circulation plan, including street sections, transit, and sections. The Parks + Open Space Design Program, Section 3.7, establishes the overall park and open space plan, as well as addressing requirements and design for public and private parks, landscape standards, and signage and entry monumentation. Section 3.8, Wetland Preserve, establishes standards and requirements related to the open space and wetland area proposed for preservation. Section 3.9, Infrastructure, addresses provision of sanitary sewer, water service, and drainage, and phasing of the SPA.

PROJECT CONSTRUCTION

The Project Applicant Team has indicated that the Project will be constructed in a series of five phases, with construction anticipated to commence in January 2020 and conclude in December 2035.

Phase 1 (January 2020 – August 2023)

- Site preparation for Phase 1 and 2 components: January 1, 2020 – March 30, 2020
- Grading for Phase 1 and 2 and improvements for Chrysanthy Boulevard and Phase 1: April 1, 2020 – November 1, 2020.
- Paving backbone infrastructure and Phase 1: November 1, 2020 – January 30, 2020
- Building construction: February 1, 2021 – May 1, 2023
- Architectural coating: May 1, 2021 – August 1, 2023
- This phase includes the following:
    - Phase 1 Clubhouse and associated landscaping (Lot A) – 7,000 s.f. of the clubhouse complex and approximately 1/3 of lot improvements
    - 270 single family residential units
    - 232 single family residential units – age restricted

Phase 2 (April 2022 – November 2025):

- Improvements for Phase 2: April 2021 – September 2022

- Paving: October 2022 – December 2022
- Building Construction: April 2023 – July 2025
- Architectural Coating: August 2023 – November 2025
- This phase includes the following:
    - 197 single family residential units
    - 210 single family residential units – age restricted
    - Phase 2 Clubhouse and associated landscaping (Lot A) – 7,000 s.f. of the clubhouse complex and approximately 1/3 of lot improvements
    - Park (Lot C) – 1.4 acres
    - Open Space (Lot Q) – 2.1 acres

Phase 3 (March 2025 – April 2029):

- Site Preparation for Phase 3: February 2025 – April 2025
- Grading: April 2025 – October 1, 2025
- Paving: October 1, 2025 – December 31, 2025
- Building Construction: January 2026 – September 2028
- Architectural Coating: April 2026 – December 2028
- Site Preparation for Rancho Cordova widening: January 2027-October 2027
- Paving for Rancho Cordova widening: October 2027-January 2028
- This phase includes the following:
    - 2656 single family residential units
    - 298 single family residential units – age restricted
    - 16 senior multifamily residential units
    - Phase 3 Clubhouse and associated landscaping (Lot A) – 7,000 s.f. of the clubhouse complex and approximately 1/3 of lot improvements
    - Park (Lot D) - 10.78 acres
    - Park (Lot B) – 1.9 acres
    - Passive Park (Lot T) – 1.2 acres

Phase 4 (March 2030 – June 2033):

- Site preparation for multifamily residential (7.2 acres): March 2030 – April 2030
- Grading and improvements: April 2030 – August 2030
- Paving: August 2030 –October 2030
- Building Construction: April 2031 – January 2033
- Architectural Coating: January 2033 – May 2033
- This phase includes the following:
    - 215 multifamily residential units
    - 22 senior multifamily residential units

Phase 5 (March 2034 – December 2035):

- Site preparation for commercial (5.2 acres): March 2034 – April 2034
- Grading and improvements: April 2034 – July 2034
- Paving: August 2034 –September 2034
- Building Construction: April 2034 – August 2035
- Architectural Coating: September 2035 – December 2035
- This phase includes the following:
    - Commercial center

Project construction would export approximately 152,708 net cubic yards of soil (The Ranch Preliminary Grading & Drainage Plan, cta Engineering & Surveying, 2019). Table 2.0-3 identifies the off-road construction equipment anticipated for each phase of Project construction.

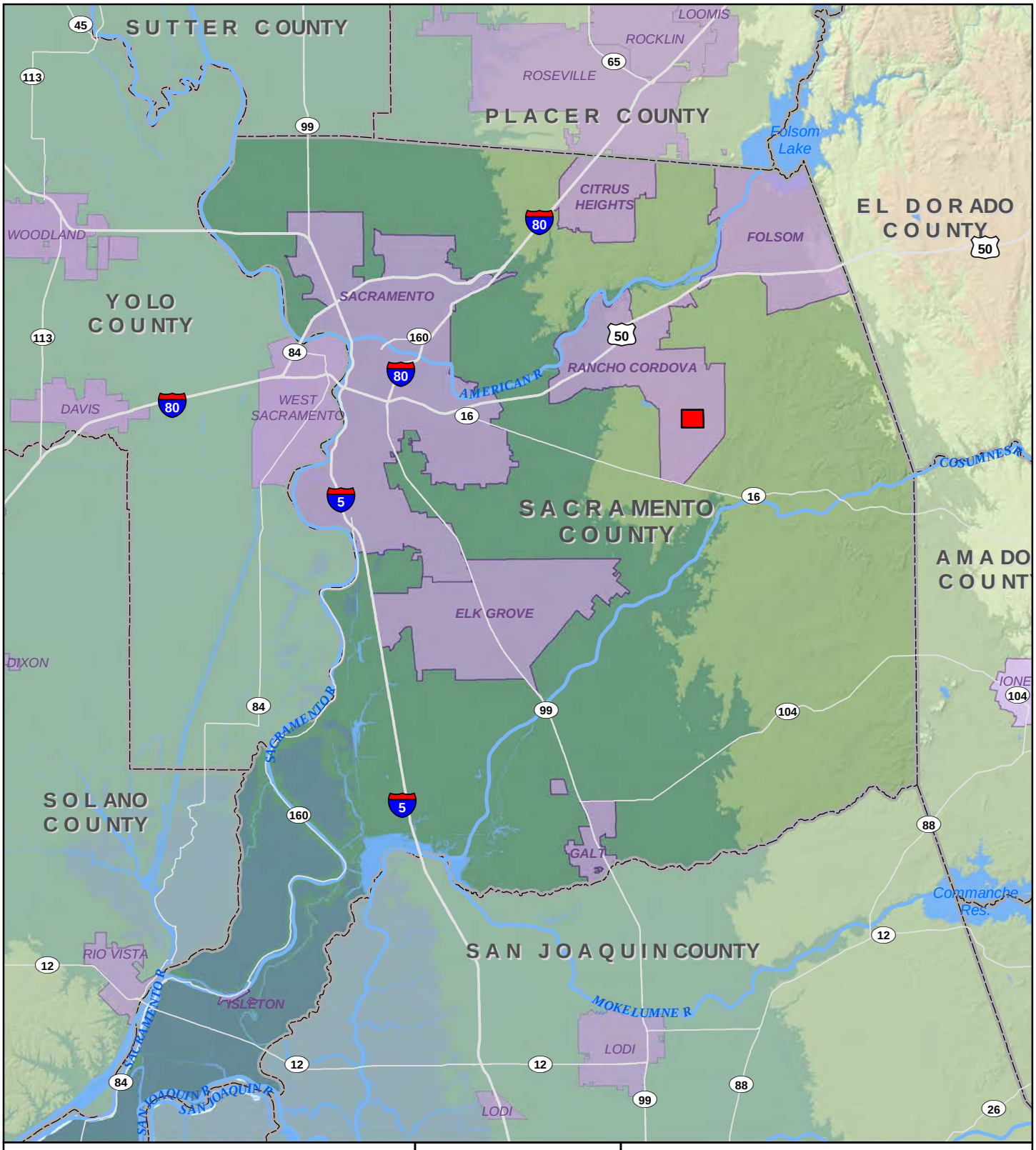
TABLE 2.0-3: PROPOSED OFF-ROAD CONSTRUCTION EQUIPMENT

PHASE	*OFFROAD EQUIPMENT TYPE*	*AMOUNT*	*USAGE HOURS PER DAY (5 DAYS PER WEEK)*
PHASE 1			
Site Preparation	Rubber Tired Dozers	3	8
Site Preparation	Tractors/Loaders/Backhoes	4	8
Grading	Excavators	2	8
Grading	Graders	1	8
Grading	Rubber Tired Dozers	1	8
Grading	Scrapers	2	8
Grading	Tractors/Loaders/Backhoes	2	8
Building Construction	Cranes	1	7
Building Construction	Forklifts	2	8
Building Construction	Generator Sets	1	8
Building Construction	Tractors/Loaders/Backhoes	1	7
Building Construction	Welders	1	8
Paving	Pavers	2	8
Paving	Paving Equipment	2	8
Paving	Rollers	2	8
Architectural Coating	Air Compressors	1	6
PHASE 2			
Building Construction	Cranes	1	7
Building Construction	Forklifts	3	8
Building Construction	Generator Sets	1	8
Building Construction	Tractors/Loaders/Backhoes	3	7
Building Construction	Welders	1	8
Paving	Pavers	2	8
Paving	Paving Equipment	2	8
Paving	Rollers	2	8
Architectural Coating	Air Compressors	1	6

PHASE	*OFFROAD EQUIPMENT TYPE*	*AMOUNT*	*USAGE HOURS PER DAY (5 DAYS PER WEEK)*
	PHASE 3		
Site Preparation	Rubber Tired Dozers	3	8
Site Preparation	Tractors/Loaders/Backhoes	4	8
Grading	Excavators	2	8
Grading	Graders	1	8
Grading	Rubber Tired Dozers	1	8
Grading	Scrapers	2	8
Grading	Tractors/Loaders/Backhoes	2	8
Building Construction	Cranes	1	7
Building Construction	Forklifts	3	8
Building Construction	Generator Sets	1	8
Building Construction	Tractors/Loaders/Backhoes	3	7
Building Construction	Welders	1	8
Paving	Pavers	2	8
Paving	Paving Equipment	2	8
Paving	Rollers	2	8
Architectural Coating	Air Compressors	1	6
	PHASE 4		
Building Construction	Cranes	1	7
Building Construction	Forklifts	3	8
Building Construction	Generator Sets	1	8
Building Construction	Tractors/Loaders/Backhoes	3	7
Building Construction	Welders	1	8
Paving	Pavers	2	8
Paving	Paving Equipment	2	8
Paving	Rollers	2	8
Architectural Coating	Air Compressors	1	6

SOURCE: K. HOVNANIAN, 2019

This page left intentionally blank.



Legend

- Project Location
- City Areas
- County Boundary

Sources: CalAtlas; Yolo County; Sacramento County, Solano County; Placer County; San Joaquin County. Map date: April 23, 2018.

N

0 2½ 5

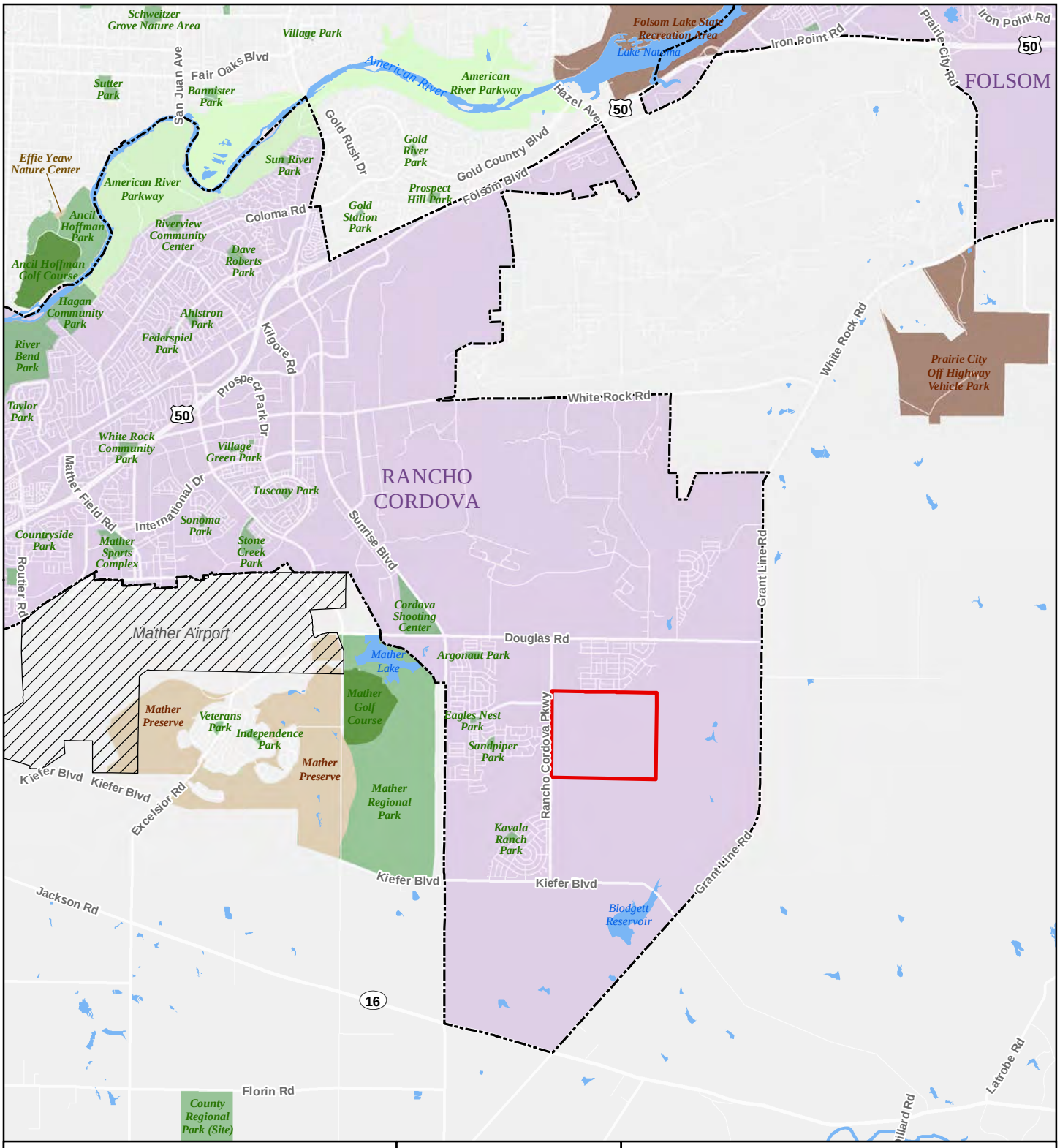
Miles

THE RANCH

Figure 2.0-1. Regional Location Map

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.



Legend

- Project Location (APN 067-004-0008)
- City Area
- Airport
- Park
- Parkway
- Golf Course
- Ecological Preserve/Nature Area
- State Recreation Area

Data sources: Sacramento County GIS; Map date: April 25, 2018.

N

0 ½ 1

Miles

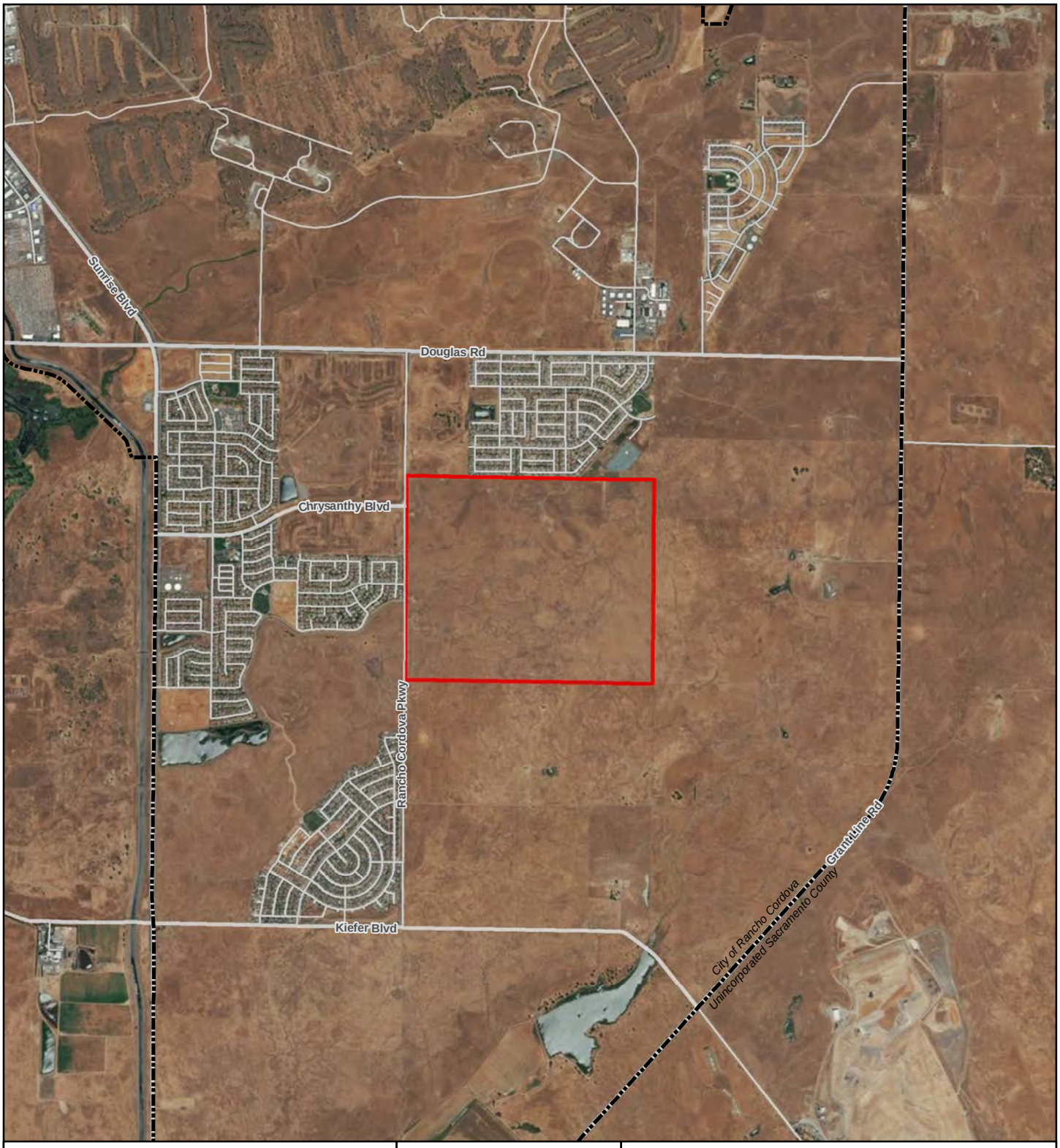
1:85,000

THE RANCH

Figure 2.0-2. Project Vicinity Map

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.



Legend

- Project Location (APN 067-004-0008)
- Rancho Cordova City Boundary

N

0 750 1,500
Feet

1:36,000

Data sources: Sacramento County GIS; ArcGIS Online World Imagery Map Service. Map date: April 25, 2018.

THE RANCH

Figure 2.0-3. Aerial View of Project Site

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.

THE RANCH
SACRAMENTO COUNTY,
CALIFORNIA

Figure 2.0-4.
Tentative Subdivision Map

Legend

Project Location (APN 067-004-0008)

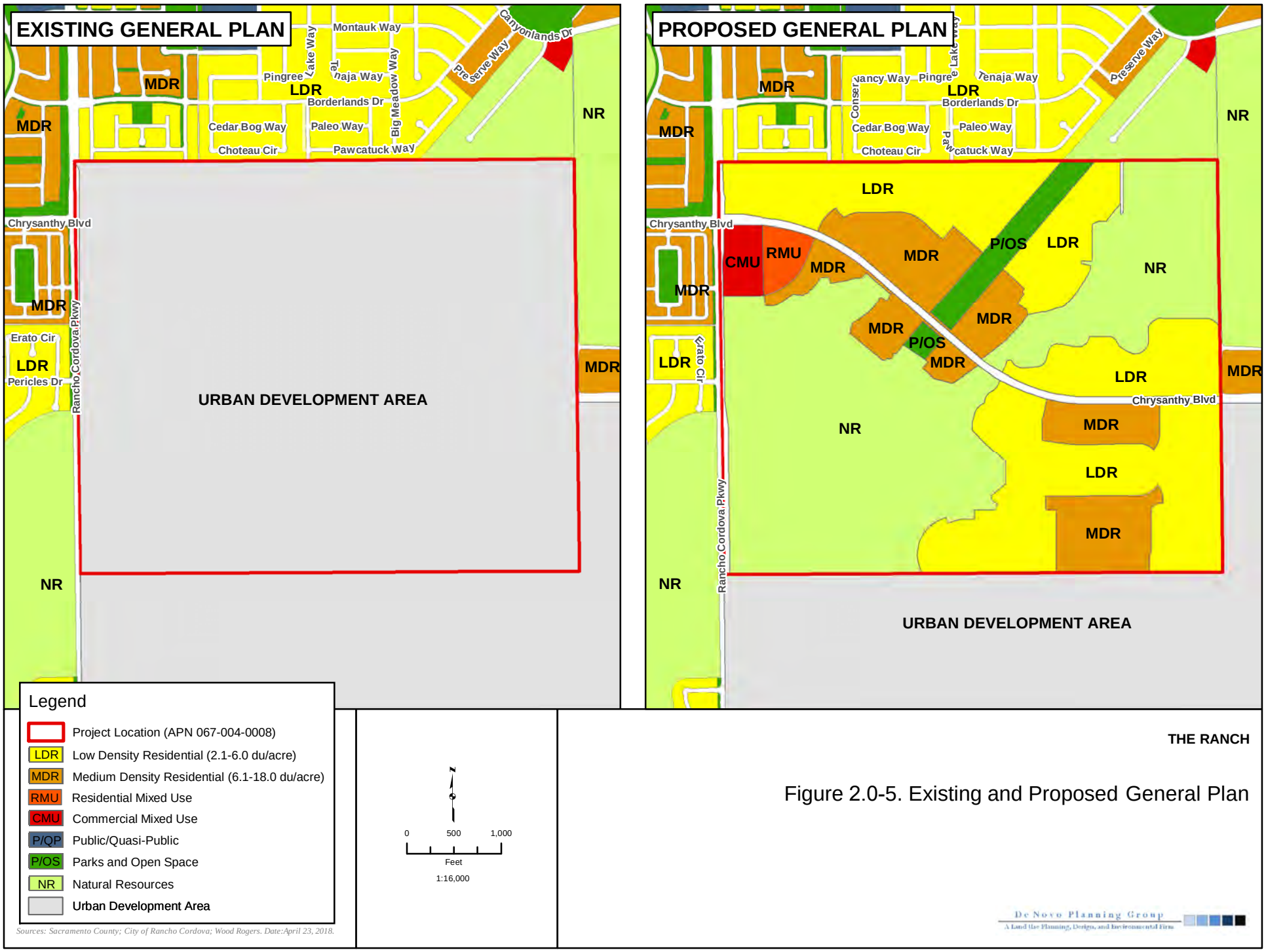
0 250 500
Feet

1:6,000

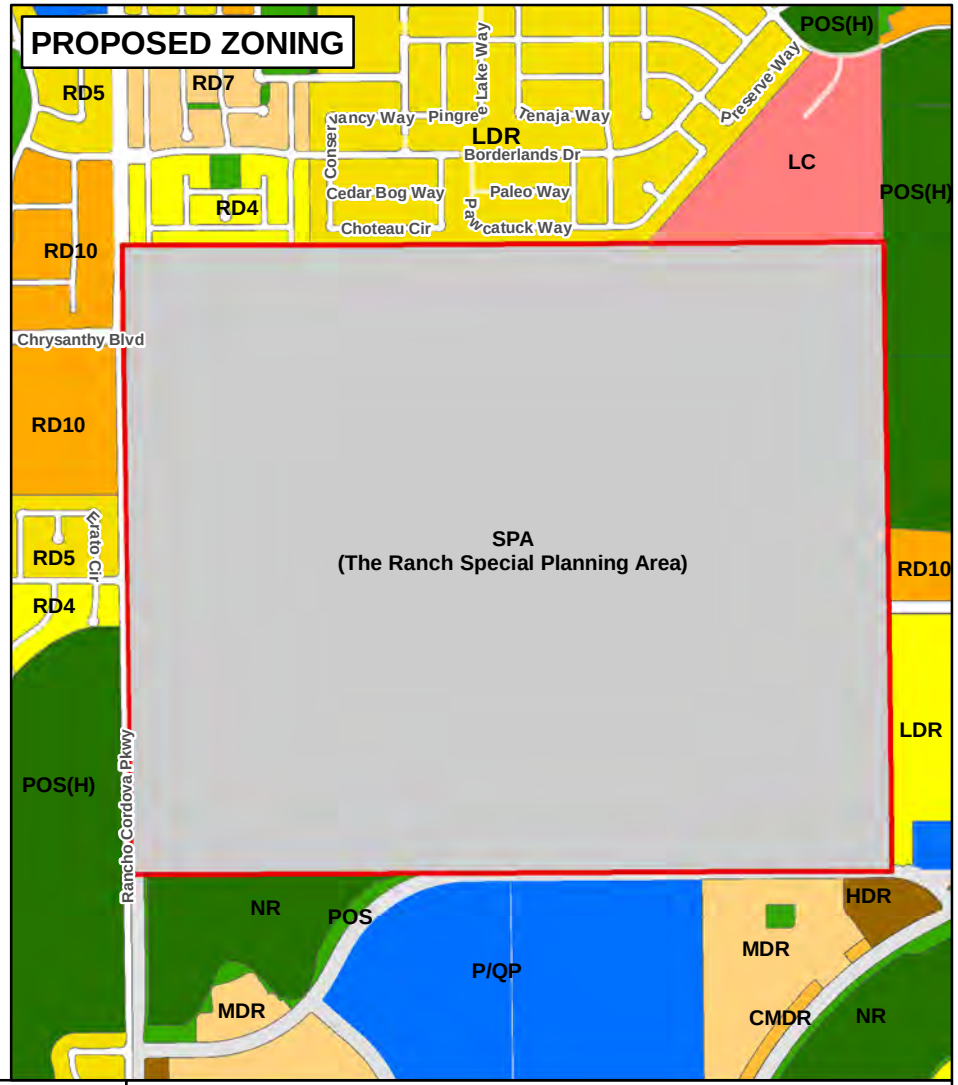
Data sources: Sacramento County, Wood Rogers, The Ranch, Small Lot Tentative Subdivision Map, June 2018, revised May 2019. Map date: August 29, 2019

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.


EXISTING GENERAL PLAN
PROPOSED GENERAL PLAN
Montauk Way
Canyonlands Dr
Lake Way
Pingree
Preserve Way
Big Meadow Way
Borderlands Dr
Cedar Bog Way
Paleo Way
Choteau Cir
Pawcatuck Way
Chrysanthy Blvd
Erato Cir
Pericles Dr
Rancho Cordova Pkwy
MDR
LDR
NR
CMU
RMU
P/OS
URBAN DEVELOPMENT AREA
Legend
Project Location (APN 067-004-0008)
Low Density Residential (2.1-6.0 du/acre)
Medium Density Residential (6.1-18.0 du/acre)
Residential Mixed Use
Commercial Mixed Use
Public/Quasi-Public
Parks and Open Space
Natural Resources
Urban Development Area
Sources: Sacramento County; City of Rancho Cordova; Wood Rogers. Date:April 23, 2018.
N
0
500
1,000
Feet
1:16,000
THE RANCH
Figure 2.0-5. Existing and Proposed General Plan
De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.



Legend

- AG-80 (Agricultural 80)
- RD-4 (Residential 4)
- LDR (SCSP)
- RD-5 (Residential 5)
- RD-7 (Residential 7)
- CMDR (SCSP)
- RD-10 (Residential 10)
- HDR (SCSP)
- LC (SDSP) (Limited Commercial)
- P/QP (SCSP)
- POS (Parks and Open Space)
- POS (SCSP)
- NR (SCSP)
- POS (Habitat)
- SPA (See SPA for designations)
- Project Boundary

N

0 500 1,000

Feet

1:16,000

Sources: Sacramento County; City of Rancho Cordova; Wood Rogers. Date:April 23, 2018.

THE RANCH

Figure 2.0-6. Existing and Proposed Zoning

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.

This section provides an overview of the visual character, scenic resources, views, scenic highways, and sources of light and glare that are encountered on the Project site and the surrounding area. This section concludes with an evaluation of the impacts and recommendations for mitigating impacts. Information in this section is derived primarily from the following:

- *Rancho Cordova General Plan* (City of Rancho Cordova, Adopted June 26, 2006);
- *Rancho Cordova General Plan Draft Environmental Impact Report* (City of Rancho Cordova, March 2006);
- *Rancho Cordova Municipal Code, Chapter 725* (current through February 4, 2019);
- *Cordova Recreation & Park District (CRPD) Design & Construction Standards Manual; and*
- *The Ranch Special Planning Area Handbook (SPA Handbook)* (K Hovnanian Homes, March 2019).

A comment was received during the public review period for the Notice of Preparation regarding this topic from the following: Cordova Recreation & Park District (CRPD) (August 3, 2018). The portion of the comment related to this topic is addressed within this section.

3.1.1 ENVIRONMENTAL SETTING

REGIONAL SETTING

In general, the dominant visual characteristics within the City's General Plan Planning Area are the open sections of the valley floor, urbanized land uses, agricultural land uses, rivers and creeks, and various species of trees. Because the entire Planning Area consists of relatively flat terrain, views of these resources are available from roadways throughout the City.

Oak trees, streams, creeks, and the American and Cosumnes Rivers are among the most significant natural visual features in the City's Planning Area. Distant views of the Sierra Nevada and Coastal ranges can be visible under clear conditions.

There are several rivers, creeks, and waterways located within or adjacent to the General Plan Planning Area that serve as a visual transition from natural scenic corridors to the City's urbanized development areas. The most prominent waterways in the vicinity of the Planning Area include: the American River, Cosumnes River, Morrison Creek, Laguna Creek, and Elder Creek.

The American River makes up the Planning Area's northern boundary and flows westward from the crest of the Sierra Nevada above Lake Tahoe to its confluence with the Sacramento River near downtown Sacramento. The American River corridor through the planning area is a part of the American River Parkway, which is an open space greenbelt that extends approximately 29 miles from the Folsom Dam to its confluence with the Sacramento River. The Cosumnes River is located approximately two miles southeast of the Planning Area's southeastern boundary. The Cosumnes River corridor contains thousands of acres of wetlands and adjacent uplands that provide critical habitat to a diverse group of plants and animal species.

3.1 AESTHETICS AND VISUAL RESOURCES

Many portions of the Rancho Cordova Planning Area south of US 50 are currently being developed. The undeveloped areas of the City south of US 50 are characterized by large areas of grazing and pasture land, which reinforces the existing uniform rural visual character of the area. These areas provide panoramic views of open space and distant views of the Sierra Nevada range and the foothills of El Dorado County.

The Planning Area has no officially designated scenic highways, corridors, vistas, or viewing areas.

PROJECT SITE AND SURROUNDING AREA

The Project site consists of approximately 530 acres located in the city limits. The Project site is bound by existing single-family residential uses and Douglas Road to the north, vacant land and Grant Line Road to the east, vacant land and Kiefer Boulevard to the south, and Rancho Cordova Parkway, single family residential, and vacant land on the west.

The Project site is currently vacant and has been previously used for agricultural uses (cattle grazing). The topography of the site exhibits low relief topography with elevations ranging between 170 and 210 feet above mean sea level (MSL). The slopes throughout the site range from approximately zero to eight percent. The site is characterized by moderate rolling hills and areas of extensive flatlands, with wetlands, vernal pools, and seasonal drainage courses scattered throughout the site. A headwater tributary of Morrison Creek traverses the Project site, entering at the northeast corner and flowing generally to the southwest. A total of 21.53 acres of jurisdictional aquatic resources have been mapped with the Project site, including: 2.92 acres of depressional seasonal wetlands, 15.04 acres of vernal pools, 1.66 acres of riverine seasonal wetlands, 0.06 acres of riverine seasonal wet swales, 1.54 acres of intermittent drainages, and 0.30 acres of drainage basin outfalls.

The property is traversed by a 275-foot-wide utility easement occupied by a 230-kV Pacific Gas and Electric (PG&E) transmission line, one 230-kV Sacramento Municipal Utility District (SMUD) transmission line, and one 69-kV SMUD sub-transmission line. No other public utilities (water, sewer, drainage) are located on site.

The Project site is bound by the Sunridge Specific Plan to the north, east, and west, and by the SunCreek Specific Plan to the south and east. Land uses anticipated to the east and south of the Project site by the Sunridge Specific Plan and the SunCreek Specific Plan include low, medium, and high density residential uses, commercial mixed uses (retail, office, and retail professional), and neighborhood parks. Other land uses located nearby include new elementary, junior and senior high schools.

LIGHT AND GLARE

There are two typical types of light intrusion. First, light emanates from the interior of structures and passes out through windows. Secondly, light projects from exterior sources such as street lighting, security lighting, balcony lighting, and landscape lighting. “Light spill” is typically defined as the presence of unwanted and/or misdirected light on properties adjacent to the property being illuminated.

Glare is the sensation produced by luminance within the visual field that is significantly greater than the luminance to which the eyes are adapted, which causes annoyance, discomfort, or loss in visual performance and visibility.

The Project site currently has minimal sources of light and glare. Street lighting exists on the west side of Rancho Cordova Parkway immediately west of the Project site. Street lighting is also provided along the local residential roadways in the development to the north of the Project site. Sources of daytime glare include direct beam sunlight and reflections from windows, architectural coatings, glass and other shiny reflective surfaces. Nighttime light illumination and associated glare can be divided into stationary and mobile sources. Stationary sources of nighttime light include structure illumination, decorative landscape lighting, lighted signs, sports field lighting and streetlights. The source of mobile nighttime light is primarily headlights of motor vehicles. During winter nighttime hours, the ambient light in the Planning Area can be accentuated during periods of low cloudiness or fog, which reflects light, resulting in intensification of the amount of light.

Existing sources of light or glare are not currently located on the Project site, although existing parking lot lighting, building lighting, and street lighting are located in the vicinity of the site. Specifically, the existing residential developments to the north, west, and southwest result in significant light and glare. Additionally, street lighting currently exists along Rancho Cordova Parkway.

3.1.2 REGULATORY SETTING

STATE

California Scenic Highway Program

The intent of the California Scenic Highway Program is "to protect and enhance California's natural scenic beauty and to protect the social and economic values provided by the State's scenic resources." Caltrans administers the program, which was established in 1963 and is governed by the California Streets and Highways Code (§260 et seq.). The goal of the program is to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of the adjacent land. Caltrans has compiled a list of state highways that are designated as scenic and county highways that are eligible for designation as scenic.

As described above, there are no designated Scenic Highway Corridors in the vicinity of the Project site.

LOCAL

Rancho Cordova General Plan

The Rancho Cordova General Plan contains the following goals and policies that are relevant to aesthetics and visual resources:

LAND USE ELEMENT

Goal LU.1: Achieve a balanced and integrated land use pattern throughout the community.

Policy LU.1.4: Promote high quality, efficient, and cohesive land utilization that minimizes negative impacts (e.g., traffic congestion and visual blight) and environmental hazards (e.g. flood, soil instability) on adjacent neighborhoods and infrastructure and preserve existing and future residential neighborhoods from encroachment of incompatible activities and land uses.

NATURAL RESOURCES ELEMENT

Goal NR.3: Preserve and maintain creek corridors and wetland preserves with useable buffer zones throughout the new development areas as feasible.

Policy NR.3.1: Coordinate with groups such as the Sacramento Urban Creeks Council to restore, enhance, and preserve creeks in Rancho Cordova.

Policy NR.3.2: Create or retain the natural topographic relief and meandering alignment of natural creek corridors in the construction of new channels and the modification of existing channels, and discourage the placement of concrete within creeks and channels.

Policy NR.3.3: Encourage the creation of secondary flood control channels where the existing channel supports extensive riparian vegetation.

Policy NR.3.4: Encourage projects that contain wetland preserves or creeks, or are located adjacent to wetland preserves or creeks, to be designed for maximum visibility and, as appropriate, access.

Goal NR.4: Encourage the planting and preservation of high-quality trees throughout the City.

Policy NR.4.1: Conserve native oak and landmark tree resources for their historic, economic, aesthetic, and environmental value.

Policy NR.4.2: Improve overall landscaping quality and sustainability in all areas visible to the public.

Policy NR.4.3: Promote trees as economic and environmental resources for the use, education, and enjoyment of current and future generations.

URBAN DESIGN ELEMENT

Goal UD.1: Development in keeping with the building block concepts of neighborhoods, villages, and districts.

Policy UD.1.1: Promote the design of residential neighborhoods in accordance with the desired character of the village and district in which it is located. All City codes and

regulations shall be updated to reflect the City's vision for Urban Design neighborhoods, villages, and districts as the building blocks of the City.

Goal UD.2: Redefine the Identity for Rancho Cordova through community and district design.

Policy UD.2.3: Transition the density and intensity of uses from an urban to rural character with a clear City edge and establish a sense of entry and arrival to the City.

Goal UD.4: Ensure that projects are designed in keeping with the context of surrounding areas and overall community.

Policy UD.4.2: Design new development to be compatible with surrounding development in ways that contribute to the desired character of the City and District.

City of Rancho Cordova Zoning Code

Chapter 23.716, Landscaping, of the Municipal Code establishes minimum landscape standards to enhance the appearance of developments, reduce heat and glare, control soil erosion, conserve water, ensure the ongoing maintenance of landscape areas, and ensure that landscape installations do not create hazards for motorists or pedestrians. This chapter of the code required a landscape plan and irrigation plan for new development (and existing development as identified in Section 23.716.020). This plan would conceptually show locations for trees, shrubs, ground cover, etc. Additionally, this would also include a list of tree species and size and the location of any required purple pipe system. Section 23.716.100 and 23.716.110 outline the landscape care, maintenance, and tree pruning requirements.

Chapter 23.725, Outdoor Lighting, of the Municipal Code regulates lighting to balance the safety and security needs for lighting with the City's desire to preserve dark skies and to ensure that light trespass and glare have negligible impact on surrounding property (especially residential) and roadways. This chapter of the code contains prohibited lighting types, as well as general lighting standards. The lighting standards include requirements to prevent nuisance lighting, through requiring lighting to be designed, installed, directed, shielded, and maintained to prevent glare, light trespass, and light pollution. With the exception of exempt lights, such as holiday, special event, and emergency lighting, outdoor lighting must be fully shielded or recessed to reduce light trespass from adjoining properties and generally must be designed to illuminate the minimum level necessary for safety and security.

CRPD Design and Construction Standards

The CRPD's Design & Construction Standards Manual contains the following general standards for lighting:

A. All lighting design shall be compliant with 2013 Energy Efficiency standards set by the California Energy Commission.
B. Park security lighting shall be provided in all park settings.
C. Activity nodes such as playgrounds and picnic areas shall be lit at an average of 1/4 foot-candle.

D. City and County requirements for parking lot lighting shall prevail.
E. Penetration of unwanted light into adjacent neighborhoods shall be mitigated as much as possible.
F. Parking lot lighting shall comply with all applicable codes including the California Energy Commission Standards.
G. When possible, lighting standards shall comply with the Model Lighting Ordinance (MLO).

3.1.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, except as provided in Public Resources Code Section 21099, the Project will have significant impact on aesthetics if it will:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality; and/or
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

As discussed in the Initial Study, the Project site is not located adjacent to or in the vicinity of a state scenic highway. The Project would have no impact related to the potential to substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, within a state scenic highway. Therefore, this impact would be ***less than significant***. This issue will not be addressed further.

IMPACTS AND MITIGATION MEASURES

Impact 3.1-1: Project implementation would result in substantial adverse effects on scenic vistas and resources or substantial degradation of visual character (Significant and Unavoidable)

Development of the Project would convert the site from its existing use as undeveloped land with a corridor of multiple power lines, poles and tall towers and previously used for agricultural uses to developed residential housing (age-restricted and unrestricted), a commercial mixed-use area, a residential mixed use area, a continuing care retirement community, protected natural areas, and park/trail areas.

The Project site is not designated as a scenic vista by the City of Rancho Cordova General Plan, nor does it contain any unique or distinguishing features that would qualify the site for designation as a scenic vista.

While the Project site is not designated as a scenic vista, it does provide public views of open grasslands and some public views across the site include the Sierra Nevada mountain range in the background. These rural, open views are generally considered to be visually pleasing. The Project site is highly visible from Rancho Cordova Parkway; views from Rancho Cordova Parkway are of the open grasslands of the site with the Sierra Nevada mountain range in the background. The site is visible in the background in views of the site from Douglas Road and lends to the open character of views from this vantage point. There are also limited public views of the site from the Sunridge development to the north, primarily from Big Meadow Way where it dead-ends at the Project site. Implementation of the Project would change the existing visual character of the site from an undeveloped, open grasslands to an urban residential neighborhood.

Impacts related to a change in visual character are largely subjective and very difficult to quantify. People have different reactions to the visual quality of a project or a project feature, and what is considered "attractive" to one viewer may be considered "unattractive" to other viewers. The Project site currently consists of undeveloped grassland previously used for agricultural purposes. Agricultural and vacant lands provide visual relief from urban and suburban developments, and help to define the character of a region.

Upon development of the Project site, views from Rancho Cordova Parkway for the northern portion of the site would include proposed landscaping and ornamental trees, proposed single-family homes, the proposed commercial mixed use area. Views from Rancho Cordova Parkway in the central and southern portions of the Project site would continue to have views of expansive open and aquatic areas; however, views in the background would be of the proposed residential communities. The proposed urban areas would be landscaped upon development of the Project site, and the Project includes approximately 225.87 acres of protected areas, including 199.5 acres of open space preserve that would remain in the existing condition, 10.39 acres of protected/drainage uses, and 15.98 acres of protected/landscape uses. In total, protected areas represent 43 percent of the total Project site.

In addition to the preservation of a substantial amount of open space, the Project would include visual components that would assist in enhancing the appearance of the site following site development. These improvements would include building design and site layout consistent with the City's Design Guidelines and landscaping improvements such as new street trees and other vegetation landscaping, and multi-use trails.

The Project's SPA Handbook includes Architectural + Site Design Guidelines for multi-family parcels and commercial parcels which create a framework within which developers, builders, and designers can have flexibility to create unique and desirable design opportunities. The Guidelines cover circulation, building placement and orientation, public spaces and pedestrian amenities, massing scale and form, and general style and design.

While implementation of the Project would change the existing visual character of the site, it would not result in substantial adverse effects on a designated scenic vista. The Project would result in the conversion of undeveloped open grassland to urban uses, which would contribute to changes in the regional landscape and visual character of the area. In order to reduce visual impacts, development within the Project site is required to be consistent with the General Plan and the Rancho Cordova Design Guidelines which includes design standards in order to ensure quality and cohesive design of the Project site. The Rancho Cordova General Plan includes goals and policies designed to protect visual resources and promote quality design in urban areas. As noted previously, these provisions provide a framework to evaluate new development projects against the City's adopted vision and are intended to reflect the City's desires relative to land planning, as well as individual site design and architecture. The guidelines and standards set forth in Chapter 2, Community Design, are applicable to all project types and cover a wide range of topics from general circulation and project signage to landscaping and sustainable development. The subsequent chapters provide additional provisions that are applicable to unique project types, including commercial and commercial mixed use, office and office mixed use, residential (all types from single family detached to residential mixed use), community facilities, and industrial.

Various temporary visual impacts could occur as a result of construction activities as the Project develops, including grading, equipment and material storage, and staging. Though temporary, some of these impacts could last for several weeks or months during any single construction phase. These construction-related impacts would be temporary and viewer sensitivity in the majority of cases would be slight to moderate.

Nevertheless, the loss of the visual appearance of the existing views, primarily of open grassland, on the site will change the visual character of the Project site in perpetuity. Compliance with the City's General Plan and design review process, implemented through the SPA Handbook, would reduce visual impacts to the greatest extent feasible; however, the Project would permanently convert the undeveloped site to urbanized uses. This is considered a ***significant and unavoidable*** impact. There is no additional feasible mitigation available that would reduce this impact to a less than significant level.

Impact 3.1-2: Project implementation would not result in substantial light or glare which would adversely affect day or nighttime views in the area (Less than Significant)

Implementation of the Project would introduce new sources of light and glare into the Project area.

GLARE

New sources of glare would occur primarily from the windshields of vehicles travelling to and from the Project site and from vehicles parked at the site. Glare associated with lighting is discussed under Lighting below. Parking areas would be provided for the commercial and high density residential parcels (Villages 22, 23, and 24), for the public park (Lot D), and for the age-restricted clubhouse (Lot A) and adjacent multifamily housing. The majority of the on-site residential parking

would be located throughout the northern, central, and southeastern portions of the Project site. Headlights and windshields would be shielded by the proposed residential and mixed use structures.

The Project includes plans for extensive landscaping and protected open space areas throughout the site, which would provide visual screening and block potential windshield glare to areas surrounding the Project site. The SPA Handbook also requires that use of reflective materials be avoided for the residential, commercial, and parks and recreation uses. Due to the distance between the sources of windshield glare and the nearest sensitive receptors and that use of reflective materials is not allowed for the residential, commercial, and parks uses, impacts from glare would be ***less than significant***.

LIGHTING

The Project would introduce new sources of lighting, including sources which may result in increased nighttime lighting or glare in the Project vicinity. A detailed lighting plan has not been prepared for the Project, but for the purposes of this analysis, it has been conservatively assumed that exterior lighting would be located throughout most of the outdoor areas of the Project site, including in the commercial, residential, and parks lots, and along the landscaped sidewalks and trails, with the exception of the trails within the preserve and associated protected buffer areas which will not be lit or landscaped. This includes, but is not necessarily limited to: street lighting in the residential areas; exterior lighting on the buildings; lighting for the bicycle and pedestrian paths; courtyard lighting; parking lot lighting for guest parking in the multifamily areas, and lighting of park and recreation facilities. Lighting at the park and recreation facilities may include night-time, stadium-style lighting associated with sports fields or other similar uses to allow for night games and activities. It is assumed that nighttime field lighting will be installed in association with potential sports fields and recreation uses at Lot D, for up to two sports fields or similar uses. It is also assumed that security lighting will be installed within the various parking areas and the exterior of restrooms within Lot D. Light sources from the proposed development may have a significant adverse impact on the surrounding areas, by introducing nuisance light into the area and decreasing the visibility of nighttime skies. Additionally, on-site light sources may create light spillover impacts on surrounding land uses in the absence of mitigation. However, the Project's residential, commercial, private parks, and landscaping uses will be required to comply with the City's Outdoor Lighting Ordinance and the public parks will be required to comply with the CRPD lighting requirements, identified in Chapter 6, Lighting, of the CRPD Design & Construction Standards Manual.

Compliance with the Outdoor Lighting Ordinance would ensure that all exterior lighting associated with the Project, including the residential, multi-family, commercial, and private parks and recreation components, is properly shielded and directed downward in order to eliminate light spillage onto adjacent properties and avoids excessive illumination, and reduces impacts to "dark skies" to the greatest extent feasible. While compliance with the Outdoor Lighting Ordinance and submittal of an outdoor lighting plan will ensure that potential impacts would be less than significant associated with the residential, commercial, landscaping, and private parks and recreation facilities, there is the potential for the public park and potential sports fields to result in

excessive lighting. The CRPD's standards reduce the potential for impacts, but do not provide adequate detail to ensure that potential impacts associated with lighting at the public park and recreation facilities are less than significant. However, the SPA Handbook requires that lighting associated with the parks and recreation facilities facilities, including any sports field uses, would be designed to minimize light trespass off the Project site and requires that a lighting plan be prepared for each park site that demonstrates the lighting has been designed to minimize light spillage onto adjacent properties and to minimize light pollution that would affect the night sky. Implementation of the City's Outdoor Lighting Ordinance, the CRPD lighting requirements, and the SPA Handbook would reduce the impact to ***less than significant***.

This section describes the regional air quality, current attainment status of the air basin, local sensitive receptors, emission sources, and impacts that are likely to result from Project implementation. Following this discussion is an assessment of consistency of the Project with applicable policies and local plans. The Greenhouse Gases, Climate Change, and Energy analysis is located in Section 3.6.

This section is based in part on the following resources:

- *Air Quality and Land Use Handbook: A Community Health Perspective* (California Air Resources Board, 2005);
- *Guide to Air Quality Assessment in Sacramento County* (Sacramento Metropolitan Air Quality Management District [SMAQMD], 2009, Revised September 2018);
- *California Emissions Estimator Model* (CalEEMod), v.2016.3.2 (California Air Pollution Control Officers Association [CAPCOA], 2017);
- *Friant Ranch Interim Recommendation* (SMAQMD, 2019);
- *Recommended Guidance for Land Use Emission Reductions Version 4 (for Operational Emissions)* (SMAQMD, 2017).

Comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic from the Sacramento Metropolitan Air Quality Management District (SMAQMD) (July 13, 2018) and the Sacramento Municipal Utility District (SMUD) (August 6, 2018). Each of the comments related to this topic are addressed within this section.

3.2.1 ENVIRONMENTAL SETTING

SACRAMENTO VALLEY AIR BASIN

The City of Rancho Cordova is located within the Sacramento Valley Air Basin (SVAB). The SVAB encompasses eleven counties including all of Shasta, Tehama, Glenn, Colusa, Butte, Sutter, Yuba, Sacramento, and Yolo Counties, the westernmost portion of Placer County and the northeastern half of Solano County. The SVAB is the northern half of California's Great Valley and is bordered on three sides (west, north, and east) by mountain ranges, with peaks in the eastern range above 9,000 feet. The SVAB is bounded by the North Coast Ranges on the west and Northern Sierra Nevada Mountains on the east. The SVAB is approximately 13,700 square miles and essentially a smooth valley floor with elevations ranging from 40 to 500 feet. The rolling valley is interrupted by the Sutter Buttes, an area of 80 square miles in northern Sutter County, which rise abruptly to more than 2,100 feet above the valley floor.

Topography and Meteorology

Hot dry summers and mild rainy winters characterize the Mediterranean climate of the SVAB. During the year the temperature may range from 20 to 115 degrees Fahrenheit with summer highs usually in the 90s and winter lows occasionally below freezing. Average annual rainfall is about 19 inches, and the rainy season generally occurs from November through March. The prevailing winds

are moderate in strength and vary from moist clean breezes from the south to dry land flows from the north.

The mountains surrounding the SVAB create a barrier to airflow, which can trap air pollutants under certain meteorological conditions. The highest frequency of air stagnation occurs in the autumn and early winter when large high-pressure cells collect over the Sacramento Valley. The lack of surface wind during these periods and the reduced vertical flow caused by less surface heating reduces the influx of outside air and allows air pollutants to become concentrated in a stable volume of air. The surface concentrations of pollutants are highest when these conditions are combined with temperature inversions that trap pollutants near the ground.

The ozone season (May through October) in the Sacramento Valley is characterized by stagnant morning air or light winds, with the delta sea breeze arriving in the afternoon out of the southwest. Usually the evening breeze transports the airborne pollutants to the north out of the Sacramento Valley. During about half of the days from July to September, however, a phenomenon called the "Schultz Eddy" prevents this from occurring. Instead of allowing for the prevailing wind patterns to move north carrying the pollutants out, the Schultz Eddy causes the wind pattern to circle back to the south. This phenomenon has the effect of exacerbating the pollution levels in the area and increases the likelihood of violating federal or state standards.

CRITERIA POLLUTANTS

All criteria pollutants can have human health and environmental effects at certain concentrations. The United States Environmental Protection Agency (USEPA) uses six "criteria pollutants" as indicators of air quality, and has established for each of them a maximum concentration above which adverse effects on human health may occur. These threshold concentrations are called National Ambient Air Quality Standards (NAAQS). In addition, California establishes ambient air quality standards, called California Ambient Air Quality Standards (CAAQS). California law does not require that the CAAQS be met by a specified date as is the case with NAAQS.

The ambient air quality standards for the six criteria pollutants (as shown in Table 3.2-1) are set to public health and the environment within an adequate margin of safety (as provided under Section 109 of the Federal Clean Air Act). Epidemiological, controlled human exposure, and toxicology studies evaluate potential health and environmental effects of criteria pollutants, and form the scientific basis for new and revised ambient air quality standards. Principal characteristics and possible health and environmental effects from exposure to the six primary criteria pollutants generated by the Project are discussed below.

Ozone (O_3) is a photochemical oxidant and the major component of smog. While O_3 in the upper atmosphere is beneficial to life by shielding the earth from harmful ultraviolet radiation from the sun, high concentrations of O_3 at ground level are a major health and environmental concern. O_3 is not emitted directly into the air but is formed through complex chemical reactions between precursor emissions of volatile organic compounds (VOC)[1] and oxides of nitrogen (NOx) in the

[1] The CARB uses the term "Reactive Organic Gases" (ROG) in place of "Volatile Organic Compounds" (VOC).

presence of sunlight. These reactions are stimulated by sunlight and temperature so that peak O_3 levels occur typically during the warmer times of the year. Both VOCs and NOx are emitted by transportation and industrial sources. VOCs are emitted from sources as diverse as autos, chemical manufacturing, dry cleaners, paint shops and other sources using solvents.

The reactivity of O_3 causes health problems because it damages lung tissue, reduces lung function and sensitizes the lungs to other irritants. Scientific evidence indicates that ambient levels of O_3 not only affect people with impaired respiratory systems, such as asthmatics, but healthy adults and children as well. Exposure to O_3 for several hours at relatively low concentrations has been found to significantly reduce lung function and induce respiratory inflammation in normal, healthy people during exercise. This decrease in lung function generally is accompanied by symptoms including chest pain, coughing, sneezing and pulmonary congestion.

Studies show associations between short-term ozone exposure and non-accidental mortality, including deaths from respiratory issues. Studies also suggest long-term exposure to ozone may increase the risk of respiratory-related deaths (U.S. Environmental Protection Agency 2019a). The concentration of ozone at which health effects are observed depends on an individual's sensitivity, level of exertion (i.e., breathing rate), and duration of exposure. Studies show large individual differences in the intensity of symptomatic responses, with one study finding no symptoms to the least responsive individual after a 2-hour exposure to 400 parts per billion of ozone and a 50 percent decrement in forced airway volume in the most responsive individual. Although the results vary, evidence suggest that sensitive populations (e.g., asthmatics) may be affected on days when the 8-hour maximum ozone concentration reaches 80 parts per billion (U.S. Environmental Protection Agency 2019b). The average background level of ozone in the California and Nevada is approximately 48.3 parts per billion, which represents approximately 77 percent of the total ozone in the western region of the U.S. (NASA, 2015).

In addition to human health effect, ozone has been tied to crop damage, typically in the form of stunted growth, leaf discoloration, cell damage, and premature death. O_3 can also act as a corrosive and oxidant, resulting in property damage such as the degradation of rubber products and other materials.

Ozone concentrations tend to be highest in summer and lowest in winter. In 2018, the lowest and highest daily average ozone concentrations at the highest site in Sacramento County were 8 parts per billion (on January 30th) and 62 parts per billion (on August 9th), respectively (California Air Resources Board, 2019a). According to the California Air Resources Board (CARB) Almanac, ozone concentrations in Sacramento have remained relatively steady from 1992 to 2012. However, over longer-term timeframes, ozone concentrations in Sacramento County have decreased (California Air Resources Board, 2019b).

Carbon monoxide (CO) is a colorless, odorless and poisonous gas produced by incomplete burning of carbon in fuels. Carbon monoxide is harmful because it binds to hemoglobin in the blood, reducing the ability of blood to carry oxygen. This interferes with oxygen delivery to the body's organs. The most common effects of CO exposure are fatigue, headaches, confusion, and dizziness due to inadequate oxygen delivery to the brain. For people with cardiovascular disease, short-term

CO exposure can further reduce their body's already compromised ability to respond to the increased oxygen demands of exercise, exertion, or stress. Inadequate oxygen delivery to the heart muscle leads to chest pain and decreased exercise tolerance. Unborn babies whose mothers experience high levels of CO exposure during pregnancy are at risk of adverse developmental effects (California Air Resources Board, 2019c). Exposure to CO at high concentrations can also cause fatigue, headaches, confusion, dizziness, and chest pain. There are no ecological or environmental effects to ambient CO (California Air Resources Board, 2019d).

Very high levels of CO are not likely to occur outdoors. However, when CO levels are elevated outdoors, they can be of particular concern for people with some types of heart disease. These people already have a reduced ability for getting oxygenated blood to their hearts in situations where the heart needs more oxygen than usual. They are especially vulnerable to the effects of CO when exercising or under increased stress. In these situations, short-term exposure to elevated CO may result in reduced oxygen to the heart accompanied by chest pain also known as angina (USEPA, 2016). Such acute effects may occur under current ambient conditions for some sensitive individuals, while increases in ambient CO levels increases the risk of such incidences.

CO concentrations tend to be highest in fall and winter and lowest in spring and summer. In 2018, the lowest and highest daily average carbon monoxide concentrations at the highest site in Sacramento County were 151 parts per billion (on March 1st) and 2,153 parts per billion (on November 15th), respectively (California Air Resources Board, 2019a). Over the long-term, CO concentrations have decreased throughout the United States, including the Sacramento region. Average concentrations of CO have reduced from approximately 333 parts per billion in 2000 to approximately 132 parts per billion in 2017, in California and Nevada (i.e. the West region, as defined by the USEPA) (USEPA, 2018).

Nitrogen dioxide (NO_2) is a brownish, highly reactive gas that is present in all urban atmospheres. The main effect of increased NO_2 is the increased likelihood of respiratory problems. Under ambient conditions, NO_2 can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections. Nitrogen oxides are an important precursor both to ozone (O_3) and acid rain, and may affect both terrestrial and aquatic ecosystems. Longer exposures to elevated concentrations of NO_2 may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. People with asthma, as well as children and the elderly, are generally at greater risk for the health effects of NO_2.

NO2 is a member of a family of chemicals comprised of nitrogen and oxygen that are collectively known as nitrogen oxides (NOx). The major mechanism for the formation of NO2 in the atmosphere is the oxidation of the air pollutant nitric oxide (NO). NOx plays a major role, together with VOCs, in the atmospheric reactions that produce O3. NOx forms when fuel is burned at high temperatures. The two major emission sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers.

NO_2 concentrations tend to be highest in winter and lowest in summer. In 2018, the lowest and highest daily average NO_2 concentrations at the highest site in Sacramento County were 3 parts per billion (on May 13th and May 20th) and 40 parts per billion (on November 20th), respectively

(California Air Resources Board, 2019a). Over the long-term, nitrogen dioxide concentrations have generally been decreasing throughout the United States, including the Sacramento region (USEPA, 2018). Average concentrations of NO_2 have reduced from approximately 69 parts per billion in 2000 to approximately 48 parts per billion in 2017, in California and Nevada (i.e. the West region, as defined by the USEPA) (USEPA, 2018). The most recent forecast from the California Air Resources Board suggests that NOx levels in the Sacramento metropolitan area will decrease over time, with the region experiencing a decrease in emissions from an average of approximately 187 tons per day in 2000 and 118 tons per day in 2010 to 54 tons per day in 2035 (California Air Resources Board, 2014).

Sulfur dioxide (SO_2) is one of the multiple gaseous oxidized sulfur species and is formed during the combustion of fuels containing sulfur, primarily coal and oil. The largest anthropogenic source of SO_2 emissions in the U.S. is fossil fuel combustion at electric utilities and other industrial facilities. SO_2 is also emitted from certain manufacturing processes and mobile sources, including locomotives, large ships, and construction equipment.

SO_2 affects breathing and may aggravate existing respiratory and cardiovascular disease in high doses. Sensitive populations include asthmatics, individuals with bronchitis or emphysema, children and the elderly. SO_2 is also a primary contributor to acid deposition, or acid rain, which causes acidification of lakes and streams and can damage trees, crops, historic buildings and statues. In addition, sulfur compounds in the air contribute to visibility impairment in large parts of the country. This is especially noticeable in national parks. Ambient SO_2 results largely from stationary sources such as coal and oil combustion, steel mills, refineries, pulp and paper mills and from nonferrous smelters.

Short-term exposure to ambient SO_2 has been associated with various adverse health effects. Multiple human clinical studies, epidemiological studies, and toxicological studies support a causal relationship between short-term exposure to ambient SO_2 and respiratory morbidity. The observed health effects include decreased lung function, respiratory symptoms, and increased emergency department visits and hospitalizations for all respiratory causes. These studies further suggest that people with asthma are potentially susceptible or vulnerable to these health effects. In addition, SO_2 reacts with other air pollutants to form sulfate particles, which are constituents of fine particulate matter ($PM_{2.5}$). Inhalation exposure to $PM_{2.5}$ has been associated with various cardiovascular and respiratory health effects (USEPA, 2017). Increased ambient SO_2 levels would lead to increased risk of such effects.

SO_2 emissions that lead to high concentrations of SO_2 in the air generally also lead to the formation of other sulfur oxides (SO_x). SO_x can react with other compounds in the atmosphere to form small particles. These particles contribute to particulate matter (PM) pollution. Small particles may penetrate deeply into the lungs and in sufficient quantity can contribute to health problems.

In 2018, the lowest and highest daily average SO_2 concentrations at the highest site in Sacramento County ranged from approximately 0 parts per billion to 1 part per billion (California Air Resources Board, 2019a). Over the long-term, nitrogen dioxide concentrations have decreased throughout the United States, including the Sacramento region (USEPA, 2018). Average concentrations of SO_2

have reduced from approximately 17.6 parts per billion in 2000 to approximately 6.2 parts per billion in 2017 at monitoring sites in California and Nevada (i.e. the West region, as defined by the USEPA) (USEPA, 2018). The most recent forecast from the California Air Resources Board suggests that SO_x concentrations in the Sacramento metropolitan area will not increase over time (emissions were an average of approximately 3 tons per day in 2000 and 2 tons per day in 2010, and are projected to remain at approximately 2 tons per day 2035) (California Air Resources Board, 2014).

Particulate matter (PM) includes dust, dirt, soot, smoke and liquid droplets directly emitted into the air by sources such as factories, power plants, cars, construction activity, fires and natural windblown dust. Particles formed in the atmosphere by condensation or the transformation of emitted gases such as SO_2 and VOCs are also considered particulate matter. PM is generally categorized based on the diameter of the particulate matter: PM_{10} is particulate matter 10 micrometers or less in diameter (known as respirable particulate matter), and $PM_{2.5}$ is particulate matter 2.5 micrometers or less in diameter (known as fine particulate matter).

Based on studies of human populations exposed to high concentrations of particles (sometimes in the presence of SO_2) and laboratory studies of animals and humans, there are major effects of concern for human health. These include effects on breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular disease, alterations in the body's defense systems against foreign materials, damage to lung tissue, carcinogenesis and premature death. Small particulate pollution has health impacts even at very low concentrations – indeed no threshold has been identified below which no damage to health is observed.

Respirable particulate matter (PM_{10}) consists of small particles, less than 10 microns in diameter, of dust, smoke, or droplets of liquid which penetrate the human respiratory system and cause irritation by themselves, or in combination with other gases. Particulate matter is caused primarily by dust from grading and excavation activities, from agricultural uses (as created by soil preparation activities, fertilizer and pesticide spraying, weed burning and animal husbandry), and from motor vehicles, particularly diesel-powered vehicles. PM_{10} causes a greater health risk than larger particles, since these fine particles can more easily penetrate the defenses of the human respiratory system.

Fine particulate matter ($PM_{2.5}$) consists of small particles, which are less than 2.5 microns in size. Similar to PM_{10}, these particles are primarily the result of combustion in motor vehicles, particularly diesel engines, as well as from industrial sources and residential/agricultural activities such as burning. It is also formed through the reaction of other pollutants. As with PM_{10}, these particulates can increase the chance of respiratory disease, and cause lung damage and cancer. In 1997, the EPA created new Federal air quality standards for $PM_{2.5}$.

The major subgroups of the population that appear to be most sensitive to the effects of particulate matter include individuals with chronic obstructive pulmonary or cardiovascular disease or influenza, asthmatics, the elderly and children. Particulate matter also soils and damages materials, and is a major cause of visibility impairment.

Numerous studies have linked PM exposure to premature death in people with preexisting heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lunch function, and increased respiratory symptoms. Studies show that every 1 microgram per cubic meter reduction in $PM_{2.5}$ results in a one percent reduction in mortality rate for individuals over 30 years old (Bay Area Air Quality Management District, 2017). Long-term exposures, such as those experienced by people living for many years in areas with high PM levels, have been associated with problems such as reduced lung function and the development of chronic bronchitis – and even premature death. Additionally, depending on its composition, both PM_{10} and $PM_{2.5}$ can also affect water quality and acidity, deplete soil nutrients, damage sensitive forests and crops, affect ecosystem diversity, and contribute to acid rain (U.S. Environmental Protection Agency 2019c).

PM concentrations tend to be highest in winter and spring and lowest in summer. In 2018, the lowest and highest daily average PM_{10} concentrations at the highest site in Sacramento County were 5.1 $\mu g/m^3$ (on November 29th) and 309.6 $\mu g/m^3$ (on November 15th), respectively (California Air Resources Board, 2019a). In 2018, the lowest and highest daily average $PM_{2.5}$ concentrations at the highest site in Sacramento County were 1.0 ug/m^3 (on March 26th) and 263.4 ug/m^3 (on November 15th), respectively (California Air Resources Board, 2019a). The most recent forecast from the California Air Resources Board projects that that $PM_{2.5}$ concentrations in the Sacramento metropolitan area will remain relatively constant from historical levels, with emissions reducing from an average of 32 tons/day in 2000 to 24 tons per day in 2010, while increasing from this level to 27 tons per day in 2035 (California Air Resources Board, 2014).

Lead (Pb) exposure can occur through multiple pathways, including inhalation of air and ingestion of Pb in food, water, soil or dust. Once taken into the body, lead distributes throughout the body in the blood and is accumulated in the bones. Depending on the level of exposure, lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems and the cardiovascular system. Lead exposure also affects the oxygen carrying capacity of the blood. Excessive Pb exposure can cause seizures, mental retardation and/or behavioral disorders. Low doses of Pb can lead to central nervous system damage. Recent studies have also shown that Pb may be a factor in high blood pressure and subsequent heart disease.

Lead is persistent in the environment and can be added to soils and sediments through deposition from sources of lead air pollution. Other sources of lead to ecosystems include direct discharge of waste streams to water bodies, and mining. Elevated lead in the environment can result in decreased growth and reproductive rates in plants and animals, and neurological effects in vertebrates.

Lead exposure is typically associated with industrial sources; major sources of lead in the air are ore and metals processing and piston-engine aircraft operating on leaded aviation fuel. Other sources are waste incinerators, utilities, and lead-acid battery manufacturers. The highest air concentrations of lead are usually found near lead smelters. As a result of the USEPA's regulatory efforts, including the removal of lead from motor vehicle gasoline, levels of lead in the air decreased by 98 percent between 1980 and 2014 (USEPA, 2019d). Based on this reduction of lead in the air over this period, and since most new developments do not generate an increase in lead

exposure, the health impacts of ambient lead levels are not typically monitored by the California Air Resources Board.

ODORS

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another.

It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air.

When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

SENSITIVE RECEPTORS

A sensitive receptor is a location where human populations, especially children, seniors, and sick persons, are present and where there is a reasonable expectation of continuous human exposure to pollutants. Examples of sensitive receptors include residences, hospitals and schools. The Project would include residences with sensitive receptors. Additionally, there are existing sensitive receptors located in the immediate vicinity of the Project to the north and west. Future sensitive receptors will also be located to the south and east of the Project site.

AMBIENT AIR QUALITY

Both the USEPA and the California Air Resources Board have established ambient air quality standards for common pollutants. These ambient air quality standards represent safe levels of

contaminants that avoid specific adverse health effects associated with each pollutant. Each pollutant is measured over several standardized timeframes (called the averaging times), which provide a standard to compare monitored levels of pollutants to the federal and state standards. Each criteria pollutant has more than one average time – for example, the state ambient air quality standard for ozone is monitored over both a 1-hour and 8-hour periods.

The federal and California state ambient air quality standards are summarized in Table 3.2-1 for important pollutants. The federal and state ambient standards were developed independently, although both processes attempted to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent. This is particularly true for ozone and PM_{10}.

TABLE 3.2-1: FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

POLLUTANT	*AVERAGING TIME*	*FEDERAL PRIMARY STANDARD*	*STATE STANDARD*
Ozone	1-Hour 8-Hour	-- 0.070 ppm	0.09 ppm 0.070 ppm
Carbon Monoxide	8-Hour 1-Hour	9.0 ppm 35.0 ppm	9.0 ppm 20.0 ppm
Nitrogen Dioxide	Annual 1-Hour	0.53 ppm 0.100 ppm	0.03 ppm 0.18 ppm
Sulfur Dioxide	Annual 24-Hour 1-Hour	0.03 ppm 0.14 ppm 0.075 ppm	-- 0.04 ppm 0.25 ppm
PM_{10}	Annual 24-Hour	-- 150 ug/m^3	20 ug/m^3 50 ug/m^3
$PM_{2.5}$	Annual 24-Hour	15 ug/m^3 35 ug/m^3	12 ug/m^3 --
Lead	30-Day Avg. Calendar Quarter	-- 1.5 ug/m^3	1.5 ug/m^3 --

NOTES: PPM = PARTS PER MILLION, PPB = PARTS PER BILLION, UG/M^3 = MICROGRAMS PER CUBIC METER
SOURCES: CALIFORNIA AIR RESOURCES BOARD, 2019E.

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated despite the absence of criteria documents. The identification, regulation and monitoring of TACs is relatively recent compared to that for criteria pollutants. Unlike criteria pollutants, TACs are regulated on the basis of risk rather than specification of safe levels of contamination.

Existing air quality concerns within the Project site are related to increases of regional criteria air pollutants (e.g., ozone and particulate matter), exposure to toxic air contaminants, and odors. The primary source of ozone (smog) pollution is motor vehicles which account for 70 percent of the ozone in the region. Particulate matter is caused by dust, primarily dust generated from construction and grading activities, and smoke which is emitted from fireplaces, wood-burning stoves, and agricultural burning.

Attainment Status

In accordance with the California Clean Air Act (CCAA), the CARB is required to designate areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the

applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria.

Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data do not support either an attainment or nonattainment status. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The USEPA designates areas for ozone, CO, and NO_2 as "does not meet the primary standards," "cannot be classified," or "better than national standards." For SO_2, areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, the CARB terminology of attainment, nonattainment, and unclassified is more frequently used.

Sacramento County has a state designation of Nonattainment for ozone and PM_{10}, and a state designation of either Unclassified or Attainment for all other criteria pollutants. Sacramento County has a national designation of Nonattainment for ozone and $PM_{2.5}$ and a national designation of either Attainment or Unclassified for all other criteria pollutants. Table 3.2-2 presents the state and national attainment status for Sacramento County.

TABLE 3.2-2: STATE AND NATIONAL ATTAINMENT STATUS (SACRAMENTO COUNTY)

CRITERIA POLLUTANTS	*STATE DESIGNATIONS*	*NATIONAL DESIGNATIONS*
Ozone	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment
$PM_{2.5}$	Attainment	Nonattainment
Carbon Monoxide	Attainment	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified/Attainment
Sulfates	Attainment	N/A
Lead	Attainment	Unclassified/Attainment
Hydrogen Sulfide	Unclassified	N/A
Visibility Reducing Particles	Unclassified	N/A

SOURCE: CALIFORNIA AIR RESOURCES BOARD, 2018.

NOTE: N/A = NO FEDERAL STANDARD

Sacramento County Monitoring

The maintains numerous air quality monitoring sites throughout Sacramento County to measure ozone and $PM_{2.5}$. The CARB also maintains numerous air quality monitoring site throughout the SVAB to monitor PM_{10}. It is important to note that the federal ozone 1-hour standard was revoked by the USEPA and is no longer applicable for federal standards. The latest data obtained from the monitoring sites in Sacramento County between (available for year 2015 through 2017) is summarized in Tables 3.2-3 and 3.2-4, and data in the SVAB is summarized in Table 3.2-5.

TABLE 3.2-3: SACRAMENTO COUNTY AMBIENT AIR QUALITY MONITORING DATA SUMMARY - OZONE

YEAR	DAYS > STANDARD				1-HOUR OBSERVATIONS			8-HOUR AVERAGES				YEAR COVERAGE	
	STATE		NATIONAL			STATE	NAT'L	STATE		NATIONAL			
	1-HR	8-HR	1-HR	8-HR	MAX.	D.V.[1]	D.V.[2]	MAX.	D.V.[1]	MAX.	D.V.[2]	MIN	MAX
2017	6	21	0	18	0.121	0.11	0.107	0.092	0.089	0.091	0.082	20	98
2016	10	33	0	33	0.111	0.11	0.107	0.095	0.093	0.094	0.083	87	100
2015	6	20	0	20	0.122	0.10	0.101	0.094	0.088	0.094	0.080	88	99

NOTES: ALL CONCENTRATIONS EXPRESSED IN PARTS PER MILLION. THE NATIONAL 1-HOUR OZONE STANDARD WAS REVOKED IN JUNE 2005 AND IS NO LONGER IN EFFECT. STATISTICS RELATED TO THE REVOKED STANDARD ARE SHOWN IN ITALICS. D.V. [1] = STATE DESIGNATION VALUE. D.V. [2]= NATIONAL DESIGN VALUE.

SOURCE: CARB AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM (ADAM) AIR POLLUTION SUMMARIES.

TABLE 3.2-4: SACRAMENTO COUNTY AMBIENT AIR QUALITY MONITORING DATA SUMMARY - $PM_{2.5}$

YEAR	EST. DAYS > NAT'L '06 STD.	ANNUAL AVERAGE		NAT'L ANN. STD. D.V.[1]	STATE ANNUAL D.V.[2]	NAT'L '06 STD. 98TH PERCENTILE	NAT'L '06 24-HR STD. D.V.[1]	HIGH 24-HOUR AVERAGE		YEAR COVERAGE	
		NAT'L	STATE					NAT'L	STATE	MIN.	MAX
2017	6.2	9.7	14.0	9.6	14	34.9	34	46.9	46.9	94	98
2016	3.3	8.8	9.8	9.3	12	28.2	31	46.8	57.5	8	96
2015	8.7	10.4	12.3	10.2	12	37.8	35	54.5	54.5	91	99

NOTES: ALL CONCENTRATIONS EXPRESSED IN PARTS PER MILLION. STATE AND NATIONAL STATISTICS MAY DIFFER FOR THE FOLLOWING REASONS: STATE STATISTICS ARE BASED ON CALIFORNIA APPROVED SAMPLERS, WHEREAS NATIONAL STATISTICS ARE BASED ON SAMPLERS USING FEDERAL REFERENCE OR EQUIVALENT METHODS. STATE AND NATIONAL STATISTICS MAY THEREFORE BE BASED ON DIFFERENT SAMPLERS. STATE CRITERIA FOR ENSURING THAT DATA ARE SUFFICIENTLY COMPLETE FOR CALCULATING VALID ANNUAL AVERAGES ARE MORE STRINGENT THAN THE NATIONAL CRITERIA. D.V. [1] = STATE DESIGNATION VALUE. D.V. [2]= NATIONAL DESIGN VALUE

SOURCE: CARB AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM (ADAM) AIR POLLUTION SUMMARIES.

TABLE 3.2-5: SVAB AMBIENT AIR QUALITY MONITORING DATA SUMMARY - PM_{10}

YEAR	EST. DAYS > STD.		ANNUAL AVERAGE		3-YEAR AVERAGE		HIGH 24-HR AVERAGE		YEAR COVERAGE
	NAT'L	STATE	NAT'L	STATE	NAT'L	STATE	NAT'L	STATE	
2017	6.1	19.3	26.4	22.0	24	23	237.7	242.0	0-100
2016	*	12.2	24.2	20.6	23	25	88.5	88.9	0-100
2015	0.0	25.2	27.0	24.9	20	25	114.6	118.0	0-100

NOTES: THE NATIONAL ANNUAL AVERAGE PM_{10} STANDARD WAS REVOKED IN DECEMBER 2006 AND IS NO LONGER IN EFFECT. AN EXCEEDANCE IS NOT NECESSARILY A VIOLATION. STATISTICS MAY INCLUDE DATA THAT ARE RELATED TO AN EXCEPTIONAL EVENT. STATE AND NATIONAL STATISTICS MAY DIFFER FOR THE FOLLOWING REASONS: STATE STATISTICS ARE BASED ON CALIFORNIA APPROVED SAMPLERS, WHEREAS NATIONAL STATISTICS ARE BASED ON SAMPLERS USING FEDERAL REFERENCE OR EQUIVALENT METHODS. STATE AND NATIONAL STATISTICS MAY THEREFORE BE BASED ON DIFFERENT SAMPLERS. NATIONAL STATISTICS ARE BASED ON STANDARD CONDITIONS. STATE CRITERIA FOR ENSURING THAT DATA ARE SUFFICIENTLY COMPLETE FOR CALCULATING VALID ANNUAL AVERAGES ARE MORE STRINGENT THAN THE NATIONAL CRITERIA.

SOURCE: CARB AEROMETRIC DATA ANALYSIS AND MANAGEMENT SYSTEM (ADAM) AIR POLLUTION SUMMARIES.

3.2.2 REGULATORY SETTING

FEDERAL

Clean Air Act

The Federal Clean Air Act (FCAA) was first signed into law in 1970. In 1977, and again in 1990, the law was substantially amended. The FCAA is the foundation for a national air pollution control effort, and it is composed of the following basic elements: NAAQS for criteria air pollutants,

hazardous air pollutant standards, state attainment plans, motor vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

The USEPA is responsible for administering the FCAA. The FCAA requires the USEPA to set NAAQS for several problem air pollutants based on human health and welfare criteria. Two types of NAAQS were established: primary standards, which protect public health (with an adequate margin of safety, including for sensitive populations such as children, the elderly, and individuals suffering from respiratory diseases), and secondary standards, which protect the public welfare from non-health-related adverse effects such as visibility reduction.

NAAQS standards define clean air and represent the maximum amount of pollution that can be present in outdoor air without any harmful effects on people and the environment. Existing violations of the ozone and $PM_{2.5}$ ambient air quality standards indicate that certain individuals exposed to these pollutants may experience certain health effects, including increased incidence of cardiovascular and respiratory ailments.

NAAQS standards have been designed to accurately reflect the latest scientific knowledge and are reviewed every five years by a Clean Air Scientific Advisory Committee (CASAC), consisting of seven members appointed by the USEPA administrator. Reviewing NAAQS is a lengthy undertaking and includes the following major phases: Planning, Integrated Science Assessment (ISA), Risk/Exposure Assessment (REA), Policy Assessment (PA), and Rulemaking. The process starts with a comprehensive review of the relevant scientific literature. The literature is summarized and conclusions are presented in the ISA. Based on the ISA, USEPA staff perform a risk and exposure assessment, which is summarized in the REA document. The third document, the PA, integrates the findings and conclusions of the ISA and REA into a policy context, and provides lines of reasoning that could be used to support retention or revision of the existing NAAQS, as well as several alternative standards that could be supported by the review findings. Each of these three documents is released for public comment and public peer review by the CASAC. Members of CASAC are appointed by the USEPA Administrator for their expertise in one or more of the subject areas covered in the ISA. The committee's role is to peer review the NAAQS documents, ensure that they reflect the thinking of the scientific community, and advise the Administrator on the technical and scientific aspects of standard setting. Each document goes through two to three drafts before CASAC deems it to be final.

Although there is some variability among the health effects of the NAAQS pollutants, each has been linked to multiple adverse health effects including, among others, premature death, hospitalizations and emergency department visits for exacerbated chronic disease, and increased symptoms such as coughing and wheezing. NAAQS standards were last revised for each of the six criteria pollutants as listed below, with detail on what aspects of NAAQS changed during the most recent update:

- Ozone: On October 1, 2015, the U.S. EPA lowered the national eight-hour standard from 0.075 ppm to 0.070 ppm, providing for a more stringent standard consistent with the current California state standard.

- CO: In 2011, the primary standards were retained from the original 1971 level, without revision. The secondary standards were revoked in 1985.

- NO_2: The national NO_2 standard was most recently revised in 2010 following an exhaustive review of new literature pointing to evidence for adverse effects in asthmatics at lower NO_2 concentrations than the existing national standard.

- SO_2: On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb.

- PM: the national annual average $PM_{2.5}$ standard was most recently revised in 2012 following an exhaustive review of new literature that pointed to evidence for increased risk of premature mortality at lower $PM_{2.5}$ concentrations than the existing standard.

- Lead: The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. In 2016, the primary and secondary standards were retained.

The law recognizes the importance for each state to locally carry out the requirements of the FCAA, as special consideration of local industries, geography, housing patterns, etc. are needed to have full comprehension of the local pollution control problems. As a result, the USEPA requires each state to develop a State Implementation Plan (SIP) that explains how each state will implement the FCAA within their jurisdiction. A SIP is a collection of rules and regulations that a particular state will implement to control air quality within their jurisdiction. The CARB is the state agency that is responsible for preparing and implementing the California SIP.

Transportation Conformity

Transportation conformity requirements were added to the FCAA in the 1990 amendments, and the EPA adopted implementing regulations in 1997. See §176 of the FCAA (42 U.S.C. §7506) and 40 CFR Part 93, Subpart A. Transportation conformity serves much the same purpose as general conformity: it ensures that transportation plans, transportation improvement programs, and projects that are developed, funded, or approved by the United States Department of Transportation or that are recipients of funds under the Federal Transit Act or from the Federal Highway Administration (FHWA), conform to the SIP as approved or promulgated by EPA.

Currently, transportation conformity applies in nonattainment areas and maintenance areas (maintenance areas are those areas that were in nonattainment that have been redesignated to attainment, under the FCCA). Under transportation conformity, a determination of conformity with the applicable SIP must be made by the agency responsible for the project, such as the Metropolitan Planning Organization, the Council of Governments, or a federal agency. The agency making the determination is also responsible for all the requirements relating to public participation. Generally, a project will be considered in conformance if it is in the transportation improvement plan and the transportation improvement plan is incorporated in the SIP. If an action

is covered under transportation conformity, it does not need to be separately evaluated under general conformity.

Transportation Control Measures

One particular aspect of the SIP development process is the consideration of potential control measures as a part of making progress towards clean air goals. While most SIP control measures are aimed at reducing emissions from stationary sources, some are typically also created to address mobile or transportation sources. These are known as transportation control measures (TCMs). TCM strategies are designed to reduce vehicle miles traveled and trips, or vehicle idling and associated air pollution. These goals are achieved by developing attractive and convenient alternatives to single-occupant vehicle use. Examples of TCMs include ridesharing programs, transportation infrastructure improvements such as adding bicycle and carpool lanes, and expansion of public transit.

STATE

California Clean Air Act

The CCAA was first signed into law in 1988. The CCAA provides a comprehensive framework for air quality planning and regulation, and spells out, in statute, the state's air quality goals, planning and regulatory strategies, and performance. The CARB is the agency responsible for administering the CCAA. The CARB established ambient air quality standards pursuant to the California Health and Safety Code (CH&SC) [§39606(b)], which are similar to the federal standards.

California Air Quality Standards

Although NAAQS are determined by the USEPA, states have the ability to set standards that are more stringent than the federal standards. As such, California established more stringent ambient air quality standards. Federal and state ambient air quality standards have been established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulates (PM_{10}) and lead. In addition, California has created standards for pollutants that are not covered by federal standards. Although there is some variability among the health effects of the CAAQS pollutants, each has been linked to multiple adverse health effects including, among others, premature death, hospitalizations and emergency department visits for exacerbated chronic disease, and increased symptoms such as coughing and wheezing. The existing state and federal primary standards for major pollutants are shown in Table 3.2-1.

Air quality standard setting in California commences with a critical review of all relevant peer reviewed scientific literature. The Office of Environmental Health Hazard Assessment (OEHHA) uses the review of health literature to develop a recommendation for the standard. The recommendation can be for no change, or can recommend a new standard. The review, including the OEHHA recommendation, is summarized in a document produced CARB staff called the draft Initial Statement of Reasons (ISOR), which is released for comment by the public, and also for public peer review by the Air Quality Advisory Committee (AQAC). AQAC members are appointed by the President of the University of California for their expertise in the range of subjects covered

in the ISOR, including health, exposure, air quality monitoring, atmospheric chemistry and physics, and effects on plants, trees, materials, and ecosystems. The Committee provides written comments on the draft ISOR. The CARB staff next revises the ISOR based on comments from AQAC and the public. The revised ISOR is then released for a 45-day public comment period prior to consideration by the Board at a regularly scheduled Board hearing.

In June of 2002, the CARB adopted revisions to the PM_{10} standard and established a new $PM_{2.5}$ annual standard. The new standards became effective in June 2003. Subsequently, staff reviewed the published scientific literature on ground-level ozone and nitrogen dioxide and the CARB adopted revisions to the standards for these two pollutants. Revised standards for ozone and nitrogen dioxide went into effect on May 17, 2006 and March 20, 2008, respectively. These revisions reflect the most recent changes to the CAAQS.

CARB Mobile-Source Regulation

The State of California is responsible for controlling emissions from the operation of motor vehicles in the state. Rather than mandating the use of specific technology or the reliance on a specific fuel, the CARB's motor vehicle standards specify the allowable grams of pollution per mile driven. In other words, the regulations focus on the reductions needed rather than on the manner in which they are achieved. Towards this end, the CARB has adopted regulations which required auto manufacturers to phase in less polluting vehicles.

CARB Air Quality and Land Use Handbook

The CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* addresses the importance of considering health risk issues when siting sensitive land uses, including residential development, in the vicinity of intensive air pollutant emission sources including freeways or high-traffic roads, distribution centers, ports, petroleum refineries, chrome plating operations, dry cleaners, and gasoline dispensing facilities. The CARB Handbook draws upon studies evaluating the health effects of traffic traveling on major interstate highways in metropolitan California centers within Los Angeles (Interstate [I] 405 and I-710), the San Francisco Bay, and San Diego areas. The recommendations identified by the CARB, including siting residential uses a minimum distance of 500 feet from freeways or other high-traffic roadways, are consistent with those adopted by the State of California for location of new schools. Specifically, the CARB Handbook recommends, "Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day" (CARB, 2005).

Tanner Air Toxics Act

California regulates TACs primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for the CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before the CARB can designate a substance as a TAC. To date, the CARB has identified more than 21 TACs and has adopted EPA's list of HAPs as TACs. Most recently, diesel PM was added to the CARB list of TACs. Once a TAC is identified, the CARB then adopts an Airborne Toxics Control Measure (ATCM) for sources that emit that particular TAC. If

there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate Best Available Control Technology (BACT) to minimize emissions.

The AB 2588 requires that existing facilities that emit toxic substances above a specified level prepare a toxic-emission inventory, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures. The CARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators). In February 2000, the CARB adopted a new public-transit bus-fleet rule and emission standards for new urban buses. These rules and standards provide for (1) more stringent emission standards for some new urban bus engines, beginning with 2002 model year engines; (2) zero-emission bus demonstration and purchase requirements applicable to transit agencies; and (3) reporting requirements under which transit agencies must demonstrate compliance with the urban transit bus fleet rule. Other recent milestones include the low-sulfur diesel-fuel requirement, and tighter emission standards for heavy-duty diesel trucks (2007) and off-road diesel equipment (2011) nationwide.

LOCAL

Sacramento Metropolitan Air Quality Management District

At the county level, air quality is managed through land use and development planning practices that are implemented by Sacramento County and the incorporated Cities and through permitted source controls that are implemented by the Sacramento County Air Quality Management District (SMAQMD).

The SMAQMD is responsible for (1) implementing air quality regulations, including developing plans and control measures for stationary sources of air pollution to meet the NAAQS and CAAQS, (2) implementing permit programs for the construction, modification, and operation of sources of air pollution, and (3) enforcing air pollution statutes and regulations governing stationary sources. With CARB oversight, the SMAQMD administers local regulations.

The following SMAQMD rules that may relate to Project construction activities or building design may include, but are not limited to:

- **Rule 201: General Permit Requirements**. Any project that includes the use of equipment capable of releasing emissions to the atmosphere may require permit(s) from SMAQMD prior to equipment operation. The applicant, developer, or operator of a project that includes an emergency generator, boiler, or heater should contact the SMAQMD early to determine if a permit is required, and to begin the permit application process. Other general types of uses that require a permit include, but are not limited to, dry cleaners, gasoline stations, spray booths, and operations that generate airborne particulate emissions. Portable construction equipment (e.g. generators, compressors, pile drivers,

lighting equipment, etc.) with an internal combustion engine over 50 horsepower is required to have a SMAQMD permit or a CARB portable equipment registration (PERP).

- **Rule 402: Nuisance**. A person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause or have natural tendency to cause injury or damage to business or property.

- **Rule 403: Fugitive Dust**. The responsible person or entity is required to implement every reasonable method to control dust emissions from any construction, handling or storage activity, or any wrecking, excavation, grading, clearing of land or solid waste disposal operation to prevent fugitive dust generated through those activities from escaping the project site. Actions include but are not limited to application of water or chemicals, asphalt, and/or oil depending on the dust-generating activity.

- **Rule 442: Architectural Coatings**. The responsible person or entity may not use a coating with a VOC content in excess of the corresponding limits specified in this rule.

- **Rule 453**: **Cutback and Emulsified Asphalt Paving Materials**. Asphalt paving operations that may be associated with implementation of the project would be subject to Rule 453. This rule applies to the manufacture and use of cutback asphalt and emulsified asphalt for paving and maintenance operation.

- **Rule 460**: **Adhesives and Sealants.** The developer or contractor is required to use adhesives and sealants that comply with the volatile organic compound content limits specified in the rule.

Air Quality Attainment Plans

Each of the attainment plans currently in effect for the SVAB are discussed in further detail below.

2017 Revisions to the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan

The Sacramento region is classified as a severe-15 nonattainment area for the 2008 NAAQS (the USEPA states that the severe-15 classification refers to an area that has a design value for 8-hour ozone of up to 0.105 up to less than 0.111 ppm). The Sacramento Air Quality Management District, along with the other air districts in the region, prepared the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan in December 2008. The CARB determined that the Plan met CAA requirements and approved the plan on March 26, 2009 as a revision to the SIP. An update to the plan, 2017 Revisions to the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (*2017 Ozone Attainment Plan*), has been prepared and was approved and adopted by the CARB on November 16, 2017. A further update to the plan, *2018 Updates to the California State Implementation Plan*, was adopted by the CARB on October 25, 2018.

PM2.5 IMPLEMENTATION/MAINTENANCE PLAN AND RE-DESIGNATION REQUEST FOR SACRAMENTO PM2.5 NONATTAINMENT AREA

The USEPA promulgated a new 24-hour standard for $PM_{2.5}$ in October 2006, which strengthened the daily standard from 65 µg/m^3 to 35 µg/m^3 to protect the general public from health effects caused by exposure to fine particulate matter. Although the Sacramento area had attained the prior $PM_{2.5}$ standards, the area did not meet the new standards and the USEPA Administrator established $PM_{2.5}$ nonattainment designations for the 2006 standard, which became effective on December 14, 2009. In the USEPA's final designation, a multi-county $PM_{2.5}$ nonattainment area was created in the Sacramento region.

However, the Sacramento federal $PM_{2.5}$ nonattainment area attained the federal $PM_{2.5}$ health standards on December 31, 2011. To be re-designated, the area must, among other things, show that attainment was achieved by permanent and enforceable reductions and that the area would remain below the standard for 10 years after accounting for emissions growth. The $PM_{2.5}$ Implementation/Maintenance Plan and Re-designation Request for Sacramento $PM_{2.5}$ Nonattainment Area (*$PM_{2.5}$ Implementation/Maintenance Plan*) was prepared to show that the region has met the requirements and requests that the USEPA re-designate the area to attainment. The U.S EPA issued a final rule for Determination of Attainment for the Sacramento Nonattainment Area effective August 14, 2013. The *$PM_{2.5}$ Implementation/Maintenance Plan* would be adopted by the air districts within the nonattainment area, as well as the CARB, as a revision to the SIP. Contents of the *$PM_{2.5}$ Implementation/Maintenance Plan* include demonstration that the NAAQS was met and that all requirements have been met for a re-designation to attainment, specification of actions to be taken if the standards are violated in the future, and establishment of regional motor vehicle emission budgets.

The CCAA also requires that air districts assess their progress toward attaining the CAAQS once every three years. The triennial assessment is to report the extent of air quality improvement and the amounts of emission reductions achieved from control measures for the preceding three-year period. The SMAQMD reviews and revises the AQAP, if necessary, to correct for deficiencies in meeting progress, to incorporate new data or projections, to mitigate ozone transport, and to pursue the expeditious adoption of all feasible control measures. The most recent triennial assessment is the 2009 Triennial Report and Plan Revision. SMAQMD rules included in the Triennial Reports and AQAP Revisions are intended to limit emissions from stationary sources. Programs are also proposed to provide incentives for mobile heavy-duty vehicles/engines, CEQA mitigation for construction and land use development, and a Spare the Air program to reduce vehicle trips. Additional rules include, but may not be limited to, rules that would reduce emissions from degreasing and solvent cleaning operations, adhesives and sealants, solvents and unspecified coatings.

PM10 IMPLEMENTATION/MAINTENANCE PLAN AND REDESIGNATION REQUEST FOR SACRAMENTO COUNTY

The Sacramento region was classified as attainment for the 1997 PM_{10} 24-hour NAAQS of 150 µg/m^3. In October 2010, the SMAQMD prepared the PM_{10} *Implementation/Maintenance Plan and*

Redesignation Request for Sacramento County (2010). The USEPA approved the PM_{10} Plan, which allowed the USEPA to proceed with the redesignation of Sacramento County as attainment for the PM_{10} NAAQS. The first Maintenance Plan showed maintenance from 2012 through 2022.

A second plan must provide for maintenance of the NAAQS for 10 more years after expiration of the first 10-year maintenance period. The SMAQMD will prepare and submit a second maintenance plan in 2020 to demonstrate maintenance of the PM_{10} standard through 2032.

Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS)

SACOG is designated by the state and federal governments as the MPO for the region and is responsible for developing a regional transportation plan in coordination with Sacramento, Yolo, Yuba, Sutter, El Dorado and Placer counties and the 22 cities within those counties (excluding the Tahoe Basin). The SACOG MTP/SCS is required to cover at least a 20-year planning horizon, and be updated at least every four years.

The MTP/SCS links land use, air quality, and transportation needs within the region. If a city, county, or public agency in the Sacramento region wants to use federal transportation funding for transportation projects or programs, those projects must be included in the MTP/SCS project list. The MTP/SCS includes transportation improvements and investments that will serve the Sacramento region's projected land use pattern and population growth. All transportation projects that are regionally significant for potential air quality impacts must also be included in the MTP/SCS.

Rancho Cordova General Plan

The Rancho Cordova General Plan contains the following goals and policies that are relevant to air quality:

AIR QUALITY ELEMENT

Goal AQ.1: Ensure a healthy community by participating in local and regional efforts to meet or exceed all state and federal air quality standards.

Policy AQ.1.1: Coordinate with responsible agencies and other jurisdictions to improve air quality within Rancho Cordova and the greater Sacramento region.

Policy AQ.1.2: Evaluate projects for compliance with State and federal ambient air quality standards and the Sacramento Metropolitan Air Quality Management District's (SMAQMD) thresholds of significance.

Policy AQ.1.3: The City shall prohibit wood-burning open masonry fireplaces in all new development. Fireplaces with EPA-approved inserts, EPA-approved stoves, and fireplaces burning natural gas will be allowed.

Policy AQ.1.4: The City shall develop an incentive program to encourage homeowners to replace high-pollution emitting non-EPA-certified wood stoves that were installed before the effective date of the applicable EPA regulation with newer cleaner-burning EPA-certified wood stoves.

Policy AQ.1.5: Require odor impact analyses be conducted for evaluating new development requests that either could generate objectionable odors that may violate SMAQMD Rule 402 or any subsequent rules and regulations regarding objectionable odors near sensitive receptors or locate new sensitive receptors near existing sources of objectionable odors. Should objectionable odor impacts be identified, odor mitigation shall be required in the form of setbacks, facility improvements or other appropriate measures.

Goal AQ.2: Support land use patterns and densities that lessen air quality impacts.

Policy AQ.2.1: Promote strategic land use patterns for businesses that reduce the number and length of motor vehicle trips and that encourage multiple forms of transportation for employees and patrons.

Policy AQ.2.2: Encourage mixed-use developments that put residences in close proximity to services, employment, transit, schools, and civic facilities/services.

Policy AQ.2.3: Encourage infill development as a way to reduce vehicle trips and improve air quality.

Policy AQ.2.4: Maximize air quality benefits through selective use of landscaping vegetation that is low in emission of volatile organic compounds, and through revegetation of appropriate areas.

Goal AQ.3: Support multiple forms of transportation and a circulation system design that reduces vehicle trips and emissions.

Policy AQ.3.1: Promote walking and bicycling as viable forms of transportation to services, shopping, and employment.

Policy AQ.3.2: Promote mass transit as an alternative to single-occupant motor vehicle travel.

Policy AQ.3.3: Involve local businesses in creating, maintaining, or promoting mass transit opportunities and reducing vehicle emissions.

Policy AQ.3.4: Emphasize "demand management" strategies that seek to reduce single-occupant vehicle use in order to achieve state and federal air quality plan objectives.

Goal AQ.4: Support energy conservation, the use of alternative fuels, clean vehicles and industries to reduce air quality impacts.

Policy AQ.4.1: Promote improved air quality benefits through energy conservation measures for new and existing development.

Policy AQ.4.2: Support vehicle improvements and the use of clean vehicles that reduce emissions and improve air quality.

Policy AQ.4.4: Support SMAQMD's program of retrofitting construction equipment.

LAND USE ELEMENT

Goal LU.1: Achieve a balanced and integrated land use pattern throughout the community.

Policy LU.1.4: Promote high quality, efficient, and cohesive land utilization that minimizes negative impacts (e.g., traffic congestion and visual blight) and environmental hazards (e.g. flood, soil instability) on adjacent neighborhoods and infrastructure and preserve existing and future residential neighborhoods from encroachment of incompatible activities and land uses.

3.2.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE FOR CRITERIA POLLUTANTS

Consistent with Appendix G of the CEQA Guidelines and the SMAQMD thresholds of significance, the Project will have a significant impact on the environment associated with air quality if it will:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations; and/or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Impacts related to greenhouse gases, climate change, and energy are addressed in Section 3.6.

The SMAQMD provides project-level thresholds of significance for: particulate matter less than 10 micrometers in diameter (PM_{10}) and less than 2.5 micrometers in diameter ($PM_{2.5}$), and the precursors to ozone, which are reactive organic gases (ROG) and nitrogen oxides (NOx). The SMAQMD developed these project-level thresholds based on the emissions amount that would exceed a CAAQS or contribute substantially to an existing or projected violation of a CAAQS. A substantial contribution is considered an emission that is equal to or greater than 5% of a CAAQS. The SMAQMD automatically adopts revisions to the CAAQS as revisions to the thresholds. The current thresholds are provided in Table 3.2-6, below.

TABLE 3.2-6: THRESHOLDS OF SIGNIFICANCE FOR CRITERIA POLLUTANTS OF CONCERN

POLLUTANT	*THRESHOLDS OF SIGNIFICANCE*	
	CONSTRUCTION	*OPERATIONAL*
ROG	None	65 pounds/day
NOx	85 pounds/day	65 pounds/day
PM_{10}	If all feasible Best Available Control Technology/Best Management Practices (BACT/BMP) are applied, then 80 pounds/day and 14.6 tons/year	If all feasible BACT/BMPs are applied, then 80 pounds/day and 14.6 tons/year
PM2.5	If all feasible BACT/BMPs are applied, then 82 pounds/day and 15 tons/year	If all feasible BACT/BMPs are applied, then 82 pounds/day and 15 tons/year

SOURCE: SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT, 2015.

Impacts related to Project-generated Pollutants of Human Health Concern

In December 2018, the California Supreme Court issued its decision in *Sierra Club v. County of Fresno* (226 Cal.App.4th 704) (hereafter referred to as the Friant Ranch Decision). The case reviewed the long-term, regional air quality analysis contained in the EIR for the proposed Friant Ranch development. The Friant Ranch project is a 942-acre master-plan development in unincorporated Fresno County within the San Joaquin Valley Air Basin, an air basin currently in nonattainment for the ozone and $PM_{2.5}$ NAAQS and CAAQS. The Court found that the air quality analysis was inadequate because it failed to provide enough detail "for the public to translate the bare [criteria pollutant emissions] numbers provided into adverse health impacts or to understand why such a translation is not possible at this time." The Court's decision clarifies that environmental documents must connect a project's air quality impacts to specific health effects or explain why it is not technically feasible to perform such an analysis.

All criteria pollutants that would be generated by the Project are associated with some form of health risk (e.g., asthma). Criteria pollutants can be classified as either regional or localized pollutants. Regional pollutants can be transported over long distances and affect ambient air quality far from the emissions source. Localized pollutants affect ambient air quality near the emissions source. Ozone is considered a regional criteria pollutant, whereas CO, NO_2, SO_2, and lead (Pb) are localized pollutants. PM can be both a local and a regional pollutant, depending on its composition. As discussed above, the primary criteria pollutants of concern generated by the Project are ozone precursors (ROG and NO_x) and PM (including diesel PM).

The SMAQMD does not currently have a methodology that would correlate the expected air quality emissions of projects to the likely health consequences of the increased emissions. The SMAQMD is in the process of developing a methodology to assess these impacts, and anticipates releasing it in the fall of 2019. In the interim, the SMAQMD advises lead agencies to follow the Friant Court's advice to explain in meaningful detail why this analysis is not yet feasible (SMAQMD, 2019).

REGIONAL PROJECT-GENERATED CRITERIA POLLUTANTS (OZONE PRECURSORS AND REGIONAL PM)

Adverse health effects induced by regional criteria pollutant emissions generated by the Project (ozone precursors and PM) are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, the number and character of exposed individuals [e.g., age, gender]). For these reasons, ozone precursors (ROG and NO_x) contribute to the formation of ground-borne ozone on a regional scale, where emissions of ROG and NO_x generated in one area may not equate to a specific ozone concentration in that same area. Similarly, some types of particulate pollutants may be transported over long-distances or formed through atmospheric reactions. As such, the magnitude and locations of specific health effects from exposure to increased ozone or regional PM concentrations are the product of emissions generated by numerous sources throughout a region, as opposed to a single individual project.

Models and tools have been developed to correlate regional criteria pollutant emissions to potential community health impacts. Appendix B.4 summarizes many of these tools, identifies the analyzed pollutants, describes their intended application and resolution, and analyzes whether they could be used to reasonably correlate project-level emissions to specific health consequences. As provided in Appendix B.4, while there are models capable of quantifying ozone and secondary PM formation and associated health effects, these tools were developed to support regional planning and policy analysis and have limited sensitivity to small changes in criteria pollutant concentrations induced by individual projects. Therefore, translating project generated criteria pollutants to the locations where specific health effects could occur or the resultant number of additional days of nonattainment cannot be estimated with a high degree of accuracy.

Technical limitations of existing models to correlate project-level regional emissions to specific health consequences are recognized by air quality management districts throughout the state, including the San Joaquin Valley Air Pollution Control District (SJVAPCD) and South Coast Air Quality Management District (SCAQMD), who provided amici curiae briefs for the Friant Ranch legal proceedings. In its brief, SJVAPCD (2015) acknowledges that while health risk assessments for localized air toxics, such as DPM, are commonly prepared, "it is not feasible to conduct a similar analysis for criteria air pollutants because currently available computer modeling tools are not equipped for this task." The air district further notes that emissions solely from the Friant Ranch project (which equate to less than one-tenth of one percent of the total NO_x and VOC in the Valley) is not likely to yield valid information," and that any such information should not be "accurate when applied at the local level." SCAQMD presents similar information in their brief, stating that "it takes a large amount of additional precursor emissions to cause a modeled increase in ambient ozone levels"[2].

As discussed above, air districts develop region-specific CEQA thresholds of significance in consideration of existing air quality concentrations and attainment or nonattainment designations

[2] For example, SCAQMD's analysis of their 2012 Air Quality Attainment Plan showed that modeled NOx and ROG reductions of 432 and 187 tons per day, respectively, only reduced ozone levels by 9 parts per billion. Analysis of SCAQMD's Rule 1315 showed that emissions of NOx and ROG of 6,620 and 89,180 pounds per day, respectively, contributed to 20 premature deaths per year and 89,947 school absence (South Coast Air Quality Management District, 2015).

under the NAAQS and CAAQS. The NAAQS and CAAQS are informed by a wide range of scientific evidence that demonstrates there are known safe concentrations of criteria pollutants. While recognizing that air quality is a cumulative problem, air districts typically consider projects that generate criteria pollutant and ozone precursor emissions below these thresholds to be minor in nature and would not adversely affect air quality such that the NAAQS or CAAQS would be exceeded. Emissions generated by the Project could increase photochemical reactions and the formation of tropospheric ozone and secondary PM, which at certain concentrations, could lead to increased incidence of specific health consequences. Although these health effects are associated with ozone and particulate pollution, the effects are a result of cumulative and regional emissions. As such, a project's incremental contribution cannot be traced to specific health outcomes on a regional scale, and a quantitative correlation of project-generated regional criteria pollutant emissions to specific human health impacts is not included in this analysis.

LOCALIZED CARBON MONOXIDE CONCENTRATIONS

Heavy traffic congestion can contribute to high levels of CO, and individuals exposed to such hot spots may have a greater likelihood of developing adverse health effects. The SMAQMD has adopted screening criteria that provide a conservative indication of whether Project-generated traffic would cause a potential CO hotspot. If the screening criteria are not met, a quantitative analysis through site-specific dispersion modeling of Project-related CO concentrations would not be necessary, and the Project would not cause localized violations of the CAAQS for CO. Projects that do not generate CO concentrations in excess of the health-based CAAQS would not contribute a significant level of CO such that localized air quality and human health would be substantially degraded.

MODELS AND TOOLS TO CORRELATE PROJECT-GENERATED CRITERIA POLLUTANT EMISSIONS TO HEALTH IMPACTS

Several models and tools capable of translating mass emissions of criteria pollutants to various health endpoints have been developed. The table provided in Appendix B.4 summarizes key tools, identifies the analyzed pollutants, describes their intended application and resolution, and analyzes whether they could be used to reasonably correlate project-level emissions to specific health consequences. As shown in the table provided in Appendix B.4, almost all tools were designed to be used at the national, state, regional, and/or city-levels. Several of the methods and have additional problems related to their applicability for translating mass emissions of criteria pollutants to various health endpoints. These tools are not well suited to analyze small or localized changes in pollutant concentrations associated with individual projects. Accordingly, they are generally not recommended for CEQA analyses.

ANALYSIS METHODOLOGY

Potential air quality impacts associated with short-term construction and long-term operations were evaluated in accordance with SMAQMD-recommended and the CARB-approved methodologies. Construction and operational emissions of criteria air pollutants were compared with the applicable thresholds of significance (described below) to determine potential impacts. SMAQMD's significance thresholds are used to determine whether the Project would result in a

cumulatively considerable net increase of any criteria pollutant for which the Project region is in non-attainment, and also serve a proxy to determine the potential for the Project to conflict with or obstruct implementation of any applicable air quality plan.

Construction-related emissions were modeled using the California Emissions Estimator Model California Emission Estimator Model (CalEEMod)™ (v.2016.3.2) (California Air Pollution Control Officers, 2018). Project-specific construction parameters were used as inputs in the air quality analysis (to the extent information was available). Construction is assumed to begin in January 2020 and end in December 2035, and would be developed over five phases. Where Project-specific information was not available, default parameters provided by each model were used. It should be noted that default assumptions in the models are typically conservative to avoid underestimating emissions when project-specific information is not available. Modeled construction-related emissions are compared with the applicable SMAQMD thresholds to determine significance.

Following construction, operation of the Project would generate air pollutant emissions. CalEEMod was also used to estimate these long-term operational emissions, as well as emissions associated with area and energy sources (i.e., natural gas combustion, landscape maintenance, periodic architectural coating, and consumer products). Operational emissions associated with day-to-day activities of the Project were quantified using CalEEMod and trip generation rates were based upon the traffic study prepared for the project (Kimley Horn, 2019). Mobile sources involve vehicle trips, including construction trucks and passenger cars. The analysis of mobile-source emissions compares the gross mobile-source emissions with the SMAQMD thresholds of significance for project operations. CO impacts were evaluated using the screening-level procedures provided by SMAQMD (2018).

The impact analysis does not directly evaluate airborne lead. Neither construction nor future operations would generate quantifiable lead emissions because of regulations that require unleaded fuel and that prohibit lead in new building materials.

TAC emissions associated with Project construction that could affect surrounding areas are evaluated qualitatively. The potential for the Project operations to expose residents to TAC emissions that would exceed applicable health standards is also discussed qualitatively.

Lastly, SMAQMD recommends that odor impacts be addressed in a qualitative manner. Such an analysis must determine if the Project would result in excessive nuisance odors, as defined under California Code of Regulations, Health and Safety Code Section 41700, Air Quality Public Nuisance.

CALEEMOD METHODOLOGY

Operational Emissions

Full buildout of the Project is expected to occur by 2035. The land use inputs for CalEEMod were derived from the Project Description (see Chapter 2.0), which includes information provided by the Project Applicant[3]. The CalEEMod land use inputs include:

- Retail:
    - Regional Shopping Center (32,000 square feet) (5.16 acres)
- Residential:
    - Apartments Mid Rise (215 Dwelling Units) (7.17 acres)
    - Retirement Community (38 dwelling units) (1.26 acres)
    - Retirement Community (737 dwelling units) (90.91 acres)
    - Single Family Housing (735 dwelling units) (77.87 acres)
- Recreational:
    - City Park (9.1 acres) (including an 8,000 square foot restroom) (9.28 acres)
    - City Park (3.07 acres) (including a 21,000 square foot clubhouse) (3.69 acres)
    - City Park (0.5 acres)
    - Parking – Other Asphalt Surfaces (3.5 acres)
    - Parking – Parking Lot (1.5 acres)

Vegetation change was modeled to estimate the reduction in carbon accumulation provided by the existing biomass (e.g. grasses) that would be removed upon Project buildout. It was assumed that, out of the approximately 530.1 acres within the project site, approximately 278.76 acres within the Project site would remain undeveloped upon project buildout. The Grassland vegetation land use subtype was used a proxy for the current land type within the Project site.

Carbon sequestration was also modeled from the planting of new trees within the Project site. Based on information provided by the Project applicant, it was assumed that 2,240 new trees would be planted within the project site.

Separately, minor adjustments were made to several of the default emission factors provided by CalEEMod. These are as follows:

- Consumer products:
    - The “general category” emission factor was adjusted from default value (reduced by a total of 29.10%), based on the following differences between Project attributes and the inputs used to develop the default value (the default value utilizes statewide factors from year 2008):

[3] Passive park uses are treated as open space and therefore and not modeled.

- The Project is estimated to have a persons per dwelling unit (persons/du) value of 2.504, versus the current statewide average of 2.97[4]. This is a difference of 18.60%

- The CARB estimated total statewide year 2016 ROG emissions of 208.71 tons/year, which is 12.89% less than the amount estimated for year 2008 (239.6 tons/year).

- Architectural Coatings:

    - The residential interior and non-residential interior emission factors were reduced from 100 g/L to 50 g/L, based on the SMAQMD Rule 442 that provides a maximum VOC limit of 50 g/L for flat coatings. It was assumed that flat coatings are used for interior coatings.

There are three types of emission sources modeled for the Project: area, energy, and mobile sources. These collectively make up the Project's operational emissions. The California Emission Estimator Model (CalEEMod)™ (v.2016.3.2) was used to estimate area source emissions. The methodology used in this analysis to address each source is presented below.

AREA SOURCES

The term area source emissions refer to equipment or devices operating within a project that individually emit small quantities of air pollutants, but when considered collectively, represent large quantities of emissions. Examples include fireplaces, wood burning heaters, lawn maintenance equipment, application of paints and lacquers, and use of consumer products.

MOBILE SOURCES

The term mobile source emissions refer to vehicle emissions generated by a project. Mobile source emissions are dependent on a large number of variables including trip length, average speed, trip generation rates, vehicle fleet mix, starting conditions, temperature, year, and other factors.

CalEEMod was used to estimate mobile source emissions. The traffic inputs were derived from the traffic analysis. The traffic inputs include trip generation rates as included within the Traffic Impact Analysis provided by Kimley Horn (2019).

ENERGY SOURCES

Energy generated by the Project is accounted for within this category. Examples include building electricity and natural gas consumption.

[4] California Department of Finance, Table 2: E-5 City/County Population and Housing Estimates (1/1/2018).

Construction Emissions

Construction activities can generate a substantial amount of air pollution. In some cases, the emissions from construction represent the largest air quality impact associated with a project. While construction-related emissions are considered temporary, these short-term impacts can contribute to the pollution load recorded at monitoring stations. Emissions from construction are assessed in this document to determine whether the thresholds of significance established by the SMAQMD would be exceeded.

Construction activities would include: site preparation, grading, building construction, paving, and architectural coatings. The emissions generated from these common construction activities include fugitive dust from soil disturbance, fuel combustion from mobile heavy-duty diesel and gasoline-powered equipment, portable auxiliary equipment, and worker commute trips.

As provided by the Project applicant, approximately 152,708 cubic yards of soil (net) would be exported from the Project site. Additionally, it was assumed that 278.76 acres of the Project site would be graded (this includes all of the residential and commercial portions of the Project site, as well as right-of-way).

The Project is anticipated to be developed in approximately five phases, according to the Project applicant, as follows:

- Phase 1 (January 2020 – August 2023):
    - Phase I Clubhouse and associated landscaping (Lot A) – 1/3 of the building complex (about 7000 sf);
    - 270 single family residential units;
    - 232 single family residential units – age restricted.
- Phase 2 (April 2022 – November 2025):
    - 197 single family residential units
    - 210 single family residential units – age restricted.
        - Neighborhood Park 2.2 ac (lot Q)
        - Liner Park Lot C (1.4ac)
        - Phase 2 Clubhouse building (~7000 sf)
- Phase 3 (February 2025 – April 2029):
    - 268 single family residential units
    - 295 single family residential units – age restricted
    - 16 senior multi-family residential units
    - Open Space (Lot T) – 1.2 acres
    - Rancho Cordova Parkway Widening
    - Phase 3 clubhouse (~7000 sf)
    - Lot B (Park)
- Phase 4 (March 2030 – June 2033):
    - 215 multi-family residential units
    - 22 senior multi-family residential units

- Phase 5 (March 2034 – December 2035)
    - Commercial Center

CalEEMod was used to estimate the construction emissions from construction activities. Based on construction phasing and schedule, the default off-road construction equipment types, amount, and characteristics provided by CalEEMod were used to model Project off-road construction equipment.

IMPACTS AND MITIGATION MEASURES

Impact 3.2-1: The Project has the potential to conflict with or obstruct implementation of the applicable air quality plan or to result in a cumulatively considerable net increase in criteria pollutants for which the region is in non-attainment (Less than Significant)

The Project is consistent with all applicable planning documents, including each of the attainment plans currently in effect for the SVAB, including the State SIP. The Project was also planned for within the SACOG MTP/SCS. Therefore, the Project's consistency with the SMAQMD's emissions thresholds are used as a proxy to determine the potential for the Project to conflict with or obstruct implementation of any applicable air quality plan.

PROJECT OPERATIONS

The Project would be a direct and indirect source of air pollution, in that it would generate and attract vehicle trips in the region (mobile source emissions), require the use of grid energy (natural gas and electricity), and generate area source emissions. The mobile source emissions would be entirely from vehicles, while the area source emissions would be primarily from landscape fuel combustion, consumer products, and architectural coatings.

CalEEMod was used to estimate operational emissions for the Project. Full buildout was estimated occur by 2035, based on the construction schedule provided by the Project applicant. Tables 3.2-8 through 3.2-10 show the Project's approximate unmitigated operational emissions under the annual, winter, and summer scenarios. Operational emissions include emissions of criteria pollutants that would result from mobile, energy, and area sources. CalEEMod model only allows some Project characteristics to be modeled as "mitigation" for the purposes of the model. Nevertheless, since Project characteristics represent the unmitigated scenario, the incorporation of these results into the model represent unmitigated results.

Specifically, the Project would include the following operational project characteristics that would reduce Project operational emissions below the applicable thresholds as provided in Table 3.2-7 through Table 3.2-9. As stated, these represent Project characteristics rather than mitigation. For further detail, see the list of sustainability features and other Project details as provided in Chapter 2.0: Project Description. A summary of the Project characteristics is provided below (note: the associated CalEEMod measure is provided in brackets below):

- Density to 6.86 dwelling units per acre [Traffic Mitigation, LUT-1];
- Increase diversity through single family residential, multi-family residential, commercial, parks and recreation, and senior uses [Traffic Mitigation, LUT-3];
- Improve walkability design (123.53 intersections per square miles) [Traffic Mitigation, LUT-9];
- Improve destination accessibility (12.3 miles) [Traffic Mitigation LUT-4];
- Increase transit accessibility (Project site would include transit facilities for the City's Signature Transit Route) – average distance to transit for Project residents would be approximately 0.25 miles) [Traffic Mitigation, LUT-5];
- Improve pedestrian network (Project site and connecting off-site) [Traffic Mitigation, SDT-1];
- Provide traffic calming measures (50% of streets and intersections with improvements) [Traffic Mitigation, SDT-2];
- Install electric vehicle (EV) charging stations throughout the Project site, such that at least 50% of single-family residences and 5% of parking spaces within the commercial, park and recreation, and multi-family land uses will have EV charging stations [Traffic Mitigation SDT-3];
- Expand transit network [Traffic Mitigation, TST-3];
- Plant a minimum of 2,240 new trees throughout the Project site [4.11.2-Sequestration];
- No hearths [Area Mitigation];
- Use low-VOC paint (50 EF g/L);
- Install energy efficient (i.e. LED or better lighting) for all outdoor lighting (for outdoor lighting) [Energy Mitigation, LE-1];
- Generate 95% or more of electricity via renewable energy (on-site energy generation and/or contract with SMUD) [Energy Mitigation, AE-1, AE-2, AE-3];
- Install energy efficient *(i.e. Energy Star)* appliances [Energy Mitigation, BE-4];
- Install low-flow appliances (bathroom faucet, kitchen faucet, toilet, and shower) [Water Mitigation, WUW-1];
- Use water-efficient irrigation systems (automatic rain shut-off, maximum gallon per minute restriction, WiFi connectivity) [Water Mitigation, WUW-4]; and
- Minimize turf for residential uses to 70% less than the maximum allowed turf area [Water Mitigation, WUW-5].

Furthermore, the Project would implement all feasible SMAQMD BMPs for particulate matter emissions from land use development projects. The SMAQMD BMPs are required by existing regulations. The following list identifies the BMPs for operational PM emissions for land use development projects:

- Compliance with District rules that control operational PM and NOx emissions, including SMAQMD Rule 403 (Fugitive Dust). Rule 403 requires the Project applicant to implement every reasonable method to control dust emissions. Actions include but are not limited to application of water or chemicals, asphalt, and/or oil depending on the dust-generating activity.

- Compliance with the mandatory measures in the California Building Energy Efficiency Standards (Title 24, Part 6) that pertain to efficient use of natural gas for space and water heating and other uses at residential or non-residential land uses.
- Compliance with mandatory measures in the California Green Building Code (Title 24, Part 11). Current mandatory measures related to operational PM include requirements for bicycle parking, parking for fuel-efficient vehicles, electric vehicle charging, and fireplaces for non-residential projects. Residential project measures include requirements for electric vehicle charging and fireplaces.
- Compliance with anti-idling regulations for diesel-powered commercial motor vehicles (greater than 10,000 gross vehicular weight rating). This BMP focuses on non-residential land use projects (retail and industrial) that would attract these vehicles.

The Project would comply with each of the operational BMPs as promulgated by the SMAQMD for land use development projects.

Since the SMAQMD operational thresholds for ROG and NOx are only provided in pounds per day, annual operational emissions for these pollutants are provided for informational purposes only. Detailed CalEEMod emissions calculations are presented in Appendix B.

TABLE 3.2-7: PROJECT OPERATIONAL EMISSIONS (TONS/YEAR) - ANNUAL

EMISSIONS[A]	*ROG*	*NOX*	*PM_{10}*	*$PM_{2.5}$*
Area	8.0	0.2	0.1	0.1
Energy	0.2	1.4	0.1	0.1
Mobile	1.5	7.8	8.6	2.3
Total	**9.7**	**9.4**	**8.8**	**2.5**
Threshold	**N/A**	**N/A**	**14.5**	**15**
Above Threshold?	**N/A**	**N/A**	**No**	**No**

NOTE: [A] NUMBERS PROVIDED HERE MAY NOT ADD UP EXACTLY TO TOTAL DUE TO ROUNDING. [B] MAXIMUM VALUE.

SOURCE: CALEEMOD (V.2016.3.2)

TABLE 3.2-8: PROJECT OPERATIONAL EMISSIONS (POUNDS/DAY) - SUMMER

EMISSIONS[A]	*ROG*	*NOX*	*PM_{10}*	*$PM_{2.5}$*
Area	45.4	1.6	0.8	0.8
Energy	0.9	7.7	0.6	0.6
Mobile	10.6	41.9	48.8	13.1
Total	**57.0**	**51.3**	**50.2**	**14.6**
Threshold	**65**	**65**	**80**	**82**
Above Threshold?	**No**	**No**	**No**	**No**

NOTE: [A] NUMBERS PROVIDED HERE MAY NOT ADD UP EXACTLY TO TOTAL DUE TO ROUNDING. [B] MAXIMUM VALUE.

SOURCE: CALEEMOD (V.2016.3.2)

TABLE 3.2-9: PROJECT OPERATIONAL EMISSIONS (POUNDS/DAY) - WINTER

EMISSIONS[A]	*ROG*	*NOX*	*PM_{10}*	*$PM_{2.5}$*
Area	45.4	1.6	0.8	0.8
Energy	0.9	7.7	0.6	0.6
Mobile	17.6	43.3	48.8	13.2
Total	**53.9**	**52.7**	**50.2**	**14.6**
Threshold	**65**	**65**	**80**	**82**
Above Threshold?	**No**	**No**	**No**	**No**

NOTE: [A] NUMBERS PROVIDED HERE MAY NOT ADD UP EXACTLY TO TOTAL DUE TO ROUNDING. [B] MAXIMUM VALUE.
SOURCE: CALEEMOD (V.2016.3.2)

The SMAQMD has established operational emissions thresholds of significance of 65 pounds/day for the ozone precursors ROG and NOx, and 80 pounds/day for PM_{10} and 82 pounds/day for $PM_{2.5}$ (if all feasible BACT/BMPs are applied for PM emissions[5]). As shown in the above tables, Project-generated emissions would not exceed the SMAQMD thresholds for any pollutant under any of the scenarios. As such, Project operational emissions would not be expected to contribute a significant level of air pollution such that regional air quality within the SVAB would be degraded. Therefore, Project operational emissions would result in a ***less than significant*** impact.

PROJECT CONSTRUCTION

Construction activities associated with construction and implementation of the Project would result in temporary short-term emissions associated with vehicle trips from construction workers, operation of construction equipment, and the dust generated during construction activities. These temporary and short-term emissions would generate additional ozone precursors (ROG and NO_x) as well as PM_{10} and $PM_{2.5}$. Below is an estimated phasing construction schedule for the Project, broken down into five phases (as provided by the Project applicant)[6]:

- Phase 1:
  - Site Preparation: 1/1/2020 – 3/30/2020
  - Grading: 4/1/2020 – 11/1/2020
  - Paving: 11/1/2020 – 1/30/2021
  - Building Construction: 2/1/2021 – 5/1/2023
  - Architectural Coating: 5/2/2021 – 8/1/2023
- Phase 2:
  - Building Construction: 4/1/2022 – 9/30/2022
  - Paving: 10/1/2022 – 12/31/2022
  - Building Construction: 4/1/2023 – 7/31/2025

[5] Note: Best Available Control Technologies (BACT) only apply to stationary source emissions. Since the Project does not include any stations sources, they are not applicable to the Project (SMAQMD, 2016).

[6] Note: Site preparation and grading activities for Phases 1 and 2 are anticipated to be conducted during Phase 1, as provided by the Project applicant.

  - Architectural Coating: 8/1/2023 – 11/30/2025
- Phase 3:
  - Site Preparation: 2/1/2025 – 4/27/2025
  - Grading: 4/28/2025 – 10/1/2025
  - Paving: 10/2/2025 – 12/31/2025
  - Building Construction: 1/1/2026 – 9/30/2028
  - Architectural Coating: 4/1/2026 – 12/31/2028
  - Site Preparation and grading for Rancho Cordova widening: 1/1/2027 – 10/1/2027
  - Paving for Rancho Cordova widening: 10/2/2027 – 01/31/2028
  - Site Prep (note: for park – Lot D): 4/1/2028 – 4/1/2029
- Phase 4:
  - Site Preparation for Commercial and MFR: 3/1/2030 – 4/27/2030
  - Grading and Improvements: 4/28/2030 – 8/1/2030
  - Paving: 8/2/2030 – 10/31/2030
  - Building Construction: 4/1/2031 – 1/1/2033
  - Architectural Coating: 1/2/2033 – 6/1/2033
- Phase 5:
  - Site Preparation for commercial center: 3/1/2034 – 4/27/2034
  - Grading and Improvements: 4/28/2034 – 7/31/2024
  - Paving: 8/1/2034 – 9/1/2034
  - Building Construction: 10/1/2034 – 8/31/2035
  - Architectural Coating: 9/1/2035 – 12/31/2035

SMAQMD advises that projects incorporate best management practices, regardless of whether emissions would be above the applicable thresholds. Below is a list of the best management practices that are recommended by the SMAQMD.

- Water all active construction sites at least three times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- Cover or maintain at least two feet of free board space on haul trucks transportation soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.
- Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).
- All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- Minimize idling time either by shutting off equipment when not in use or reducing the time of idling to 5 minutes. Provide clear signage that posts this requirement for workers at the entrance to the site.

- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.

CalEEMod allows the inclusion of measures that would reduce project-related construction emissions consistent with the SMAQMD construction-related best management practices (as provided above). To reflect the SMAQMD best management practices within the modeling, the following CalEEMod measures were used within CalEEMod to calculate the reduction in construction emissions due to implementation of these best management practices, per SMAQMD guidance:

- Water Exposed Area two times daily (55% Fugitive Dust PM reduction);
- Clean Paved Road (9% Fugitive Dust PM reduction).
- Unpaved Road Mitigation: Limit on-site construction vehicle speeds to 15 mph.

Table 3.2-10 shows the maximum daily and annual construction emissions that would result from the Project. The emissions provided in Table 3.2-10 represent emissions inclusive of the above-specified measures that would reduce Project-related construction emissions consistent with the SMAQMD construction-related best management practices.

The SMAQMD has established construction emissions threshold of significance of 85 pounds per day for NOx, 80 pounds per day and 14.6 tons per year for PM_{10}, and 82 pounds per day and 15 tons per year for $PM_{2.5}$. The SMAQMD utilizes a screening process and separate model for CO impacts. There is no construction threshold for ROG. As shown in Table 3.2-10, construction emissions of NOx would be at its maximum in year 2020, with a maximum of approximately 68.2 pounds per day, which is below the 85 pounds per day threshold for NOx. Year 2027 would be the peak years for PM_{10} and $PM_{2.5}$. However, emissions for PM would also be below the applicable daily and annual thresholds for PM as provided by the SMAQMD. As such, Project construction emissions would not be expected to contribute a significant level of air pollution such that regional air quality within the SVAB would be degraded. Therefore, Project construction emissions would result in a ***less than significant*** impact.

TABLE 3.2-10: SUMMARY OF MAXIMUM CONSTRUCTION DAILY AND ANNUAL EMISSIONS

YEAR	ROG (LBS/DAY)	NOX (LBS/DAY)	PM_{10} (LBS/DAY)	$PM_{2.5}$ (LBS/DAY)	PM_{10} (TONS/YEAR)	$PM_{2.5}$ (TONS/YEAR)
PHASE 1						
2020	5.0	68.3	10.5	6.5	0.8	0.5
2021	14.7	39.0	8.9	3.5	1.0	0.4
2022	14.2	34.9	8.7	3.2	1.1	0.4
2023	13.9	31.6	8.5	3.1	0.4	0.1
Maximum	**14.7**	**68.2**	**10.5**	**6.5**	**1.1**	**0.5**
Threshold	**None**	**85**	**80**	**82**	**14.6**	**15**
Above Threshold?	**N**	**N**	**N**	**N**	**N**	**N**
PHASE 2						
2022	1.8	15.7	1.1	0.8	0.1	0.1
2023	10.5	22.1	3.6	1.5	0.2	0.1
2024	10.3	20.9	3.5	1.4	0.5	0.2
2025	10.1	19.7	3.4	1.3	0.3	0.1
Maximum	**10.5**	**22.1**	**3.6**	**1.5**	**0.5**	**0.2**
Threshold	**None**	**85**	**80**	**82**	**14.6**	**15**
Above Threshold?	**N**	**N**	**N**	**N**	**N**	**N**
PHASE 3						
2025	3.9	36.6	9.8	5.6	0.5	0.3
2026	17.6	25.8	5.9	2.0	0.7	0.2
2027	20.0	50.8	15.3	7.5	1.7	0.8
2028	19.9	50.6	15.3	7.5	1.5	0.7
2029	2.5	25.3	9.3	5.5	0.3	0.2
Maximum	**20.0**	**50.8**	**15.3**	**7.5**	**1.7**	**0.8**
Threshold	**None**	**85**	**80**	**82**	**14.6**	**15**
Above Threshold?	**N**	**N**	**N**	**N**	**N**	**N**
PHASE 4						
2030	3.1	14.9	8.7	4.9	0.3	0.2
2031	1.7	9.9	1.5	0.5	0.1	<0.1
2032	1.7	9.9	1.5	0.5	0.2	0.1
2033	17.4	0.9	0.3	0.1	<0.1	<0.1
Maximum	**17.4**	**14.9**	**8.7**	**4.9**	**0.3**	**0.2**
Threshold	**None**	**85**	**80**	**82**	**14.6**	**15**
Above Threshold?	**N**	**N**	**N**	**N**	**N**	**N**
PHASE 5						
2034	2.5	13.7	8.7	4.9	0.6	0.3
2035	3.5	8.3	0.2	0.1	<0.1	<0.1
Maximum	**3.5**	**13.7**	**8.7**	**4.9**	**0.6**	**0.3**
Threshold	**None**	**85**	**80**	**82**	**14.6**	**15**
Above Threshold?	**N**	**N**	**N**	**N**	**N**	**N**

SOURCE: CALEEMOD (V.2016.3.2)

PROJECT EFFECTS ON PUBLIC HEALTH

Sacramento County has a state designation of Nonattainment for ozone and PM_{10}, and a national designation of Nonattainment for ozone and $PM_{2.5}$. As shown in Table 3.2-7 through Table 3.2-10, construction and operation of the Project would not generate ozone precursors (ROG and NO_x) or PM exhaust in excess of the SMAQMD's numeric thresholds. The SMAQMD developed these project-level thresholds based on the emissions amount that would exceed a CAAQS or contribute substantially to an existing or projected violation of a CAAQS, as described in the *Thresholds of Significance for Criteria Pollutants* discussion. Ambient levels of these criteria pollutants are likely to decrease in the future, based on current and future implementation of federal and/or state regulatory requirements, such as improvements to the statewide vehicle fleet over time (including the long-term replacement of internal combustion engine vehicles with electric vehicles in coming decades).

As shown in the table provided in Appendix B.4, almost all tools available to measure criteria pollutant emissions were designed to be used at the national, state, regional, and/or city-levels. These tools are not well suited to analyze small or localized changes in pollutant concentrations associated with individual projects. Accordingly, they are not recommended by the SMAQMD for CEQA analyses (SMAQMD, 2019).

Ozone

O_3 is not emitted directly into the air but is formed through complex chemical reactions between precursor emissions of volatile organic compounds (VOC) (also known as ROG) and oxides of nitrogen (NO_x) in the presence of sunlight. The reactivity of O_3 causes health problems because it damages lung tissue, reduces lung function and sensitizes the lungs to other irritants. Scientific evidence indicates that ambient levels of O_3 not only affect people with impaired respiratory systems, such as asthmatics, but healthy adults and children as well. Exposure to O_3 for several hours at relatively low concentrations has been found to significantly reduce lung function and induce respiratory inflammation in normal, healthy people during exercise. This decrease in lung function generally is accompanied by symptoms including chest pain, coughing, sneezing and pulmonary congestion.

Studies show associations between short-term ozone exposure and non-accidental mortality, including deaths from respiratory issues. Studies also suggest long-term exposure to ozone may increase the risk of respiratory-related deaths (U.S. Environmental Protection Agency 2019a). The concentration of ozone at which health effects are observed depends on an individual's sensitivity, level of exertion (i.e., breathing rate), and duration of exposure. Studies show large individual differences in the intensity of symptomatic responses, with one study finding no symptoms to the least responsive individual after a 2-hour exposure to 400 parts per billion of ozone and a 50 percent decrement in forced airway volume in the most responsive individual. Although the results vary, evidence suggest that sensitive populations (e.g., asthmatics) may be affected on days when the 8-hour maximum ozone concentration reaches 80 parts per billion (U.S. Environmental Protection Agency 2019b).

The Project would generate emissions of ROG and NOx during Project operational and construction activities, as shown in Table 3.2-7 through Table 3.2-10. Although the exact effect of such emissions on local health are not known, it is likely that the increases in ROG and NOx generated by the proposed Project would especially affect people with impaired respiratory systems, but also healthy adults and children. However, the increases of these pollutants generated by the proposed Project are not on their own likely to generate an increase in the number of days exceeding the NAAQS or CAAQS standards, based on the size of the proposed Project in comparison to Sacramento County as a whole.

Particulate Matter

Based on studies of human populations exposed to high concentrations of particles (sometimes in the presence of SO_2) and laboratory studies of animals and humans, PM can cause major effects of concern for human health. These include effects on breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular disease, alterations in the body's defense systems against foreign materials, damage to lung tissue, carcinogenesis and premature death. Small particulate pollution has health impacts even at very low concentrations – indeed no threshold has been identified below which no damage to health is observed. The major subgroups of the population that appear to be most sensitive to the effects of particulate matter include individuals with chronic obstructive pulmonary or cardiovascular disease or influenza, asthmatics, the elderly and children. Particulate matter also soils and damages materials, and is a major cause of visibility impairment.

Numerous studies have linked PM exposure to premature death in people with preexisting heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lunch function, and increased respiratory symptoms. Studies show that every 1 microgram per cubic meter reduction in $PM_{2.5}$ results in a one percent reduction in mortality rate for individuals over 30 years old (Bay Area Air Quality Management District, 2017). Long-term exposures, such as those experienced by people living for many years in areas with high particle levels, have been associated with problems such as reduced lung function and the development of chronic bronchitis – and even premature death. Additionally, depending on its composition, both PM_{10} and $PM_{2.5}$ can also affect water quality and acidity, deplete soil nutrients, damage sensitive forests and crops, affect ecosystem diversity, and contribute to acid rain (U.S. Environmental Protection Agency 2019c).

The Project would generate emissions of PM during Project operational and construction activities, as shown in Table 3.2-7 through Table 3.2-10. Although the exact effect of such emissions on local health are not known, it is likely that the increases in PM generated by the proposed Project would especially affect people with impaired respiratory systems, but also healthy adults and children located in the immediate vicinity of the Project site. However, the increases of these pollutants generated by the proposed Project are not on their own likely to generate an increase in the number of days exceeding the NAAQS or CAAQS standards, based on the size of the Project in comparison the Sacramento County as a whole.

Discussion

As previously discussed, the magnitude and locations of any potential changes in ambient air quality, and thus health consequences, from these additional emissions cannot be quantified with a high level of certainty due to the dynamic and complex nature of pollutant formation and distribution (e.g., meteorology, emissions sources, sunlight exposure). However, it is known that public health will continue to be affected in the City of Rancho Cordova and the surrounding region so long as the region does not attain the CAAQS or NAAQS. However, the increases of these pollutants generated by the proposed Project are not on their own likely to generate an increase in the number of days exceeding the NAAQS or CAAQS standards, based on the size of the Project in comparison the Sacramento County as a whole.

CONCLUSION

As shown in Tables 3.2-11 through 3.2-13, modeled Project characteristics demonstrate that the Project's operational emissions to levels would be below the SMAQMD thresholds. The Project would have a ***less than significant*** impact relative to project operational emissions. Additionally, as shown in Table 3.2-11, implementation of the SMAQMD construction-related best management practices (as required) would reduce Project-related construction emissions during the construction timeframe and emissions would be below SMAQMD thresholds. Therefore, Project construction emissions would have a ***less than significant*** impact. Lastly, the Project would not generate significant health impacts associated with exposure to increases in criteria pollutant levels, based on the tools that are currently available and SMAQMD's interim guidance. This Project would have a ***less than significant*** impact relative to this topic.

Impact 3.2-2: The Project has the potential to generate carbon monoxide hotspot impacts as a result of increased traffic congestion that would exceed the applicable ambient air quality standards (Less than Significant)

Very high levels of CO are not likely to occur outdoors. However, when CO levels are elevated outdoors, they can be of particular concern for people with some types of heart disease. These people already have a reduced ability for getting oxygenated blood to their hearts in situations where the heart needs more oxygen than usual. They are especially vulnerable to the effects of CO when exercising or under increased stress. In these situations, short-term exposure to elevated CO may result in reduced oxygen to the heart accompanied by chest pain also known as angina (USEPA, 2016). Such acute effects may occur under current ambient conditions for some sensitive individuals, while increases in ambient CO levels could increase the risk of such incidences.

Project traffic would increase concentrations of carbon monoxide along streets providing access to the Project site. Carbon monoxide is a local pollutant (i.e., high concentrations are normally only found very near sources). The major source of carbon monoxide, a colorless, odorless, poisonous gas, is automobile traffic. Elevated concentrations (i.e. hotspots), therefore, are usually only found near areas of high traffic volume and congestion.

Long-distance transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. Under specific meteorological conditions and traffic conditions, CO concentrations at receptors located near roadway intersections may reach unhealthy levels, when combined with background CO level.

Emissions and ambient concentrations of CO have decreased dramatically in the SVAB with the introduction of the catalytic converter emission control technology for on-road motor vehicles in 1975 and reformulated fuels required by the 1990 Clean Air Act amendments. No exceedances of the CAAQS or NAAQS for CO have been recorded at a monitoring station in Sacramento County since 1993. Both the CARB and the USEPA have redesignated the Sacramento Valley Air Basin as an attainment area for CO, for the CAAQS in 1997 and the NAAQS on June 1, 1998, respectively. However, elevated localized concentrations of CO still warrant consideration in the environmental review process. Occurrences of localized CO concentrations (i.e., "hotspots") are often associated with heavy traffic congestion, which most frequently occur at signalized intersections of high-volume roadways.

The preliminary screening methodology provided by the SMAQMD provides lead agencies with a conservative indication of whether Project-generated vehicle trips will result in the generation of CO emissions that contribute to an exceedance of the thresholds of significance. The SMAQMD's recommended screening criteria are divided into two tiers. The screening criteria have been developed to help lead agencies analyze potential CO impacts and identify when site-specific CO dispersion modeling is not necessary.

According to the SMAQMD, a Project will result in a less than significant impact to air quality for local CO if:

- Traffic generated by the Project will not result in deterioration of intersection level of service (LOS) to LOS E or F; and
- The project will not contribute to additional traffic to an intersection that already operates at LOS of E or F.

The Project would not satisfy this first tier of screening criteria. As identified in Section 3.13: Transportation and Circulation, there are several intersections that would be affected by the Project such that the Project would contribute additional traffic to some intersections that already operate at LOS of E or F. There would also be an intersection (Intersection #9 as identified in Section 3.13: Transportation and Circulation) that would result in a deterioration of intersection LOS to E during the PM peak hour. Therefore, the Project would not satisfy the first tier of the SMAQMD's recommended screening criteria.

The SMAQMD guidance states that, if the first tier of screening criteria is not met, then a second tier of screening criteria shall be examined. The second tier of screening criteria is listed below. According to the SMAQMD, the Project would result in a less than significant impact to air quality for local CO if all of the following criteria are met:

- The project will not result in an affected intersection experiencing more than 31,600 vehicles per hour;
- The project will not contribute traffic to a tunnel, parking garage, bridge underpass, urban street canyon, or below-grade roadway; or other locations where horizontal or vertical mixing of air will be substantially limited; and
- The mix of vehicle types at the intersection is not anticipated to be substantially different from the County average (as identified by the EMFAC or CalEEMod models).

The Project meets each of these three criteria. The Project does not result in an affected intersection experiencing more than 31,600 vehicles per hour, would not contribute traffic at a location where horizontal or vertical mixing of air will be substantially limited, and the mix of vehicles types at the intersection would not be substantially different than the County average.

The SMAQMD does not maintain a mass emissions threshold for carbon monoxide. Therefore, since the Project passes the SMAQMD screening criteria for Carbon monoxide hotspots, the potential for a carbon monoxide hotspot impact represents a ***less than significant*** impact.

Impact 3.2-3: The Project has the potential for expose sensitive receptors to substantial toxic air contaminants (Less than Significant)

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air. However, their high toxicity or health risk may pose a threat to public health even at very low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the state and federal governments have set ambient air quality standards.

The CARB published the *Air Quality and Land Use Handbook: A Community Health Perspective* (2007) to provide information to local planners and decision-makers about land use compatibility issues associated with emissions from industrial, commercial and mobile sources of air pollution. The CARB Handbook indicates that mobile sources continue to be the largest overall contributors to the State's air pollution problems, representing the greatest air pollution health risk to most Californians. The most serious pollutants on a statewide basis include diesel exhaust particulate matter (diesel PM), benzene, and 1,3-butadiene, all of which are emitted by motor vehicles. These mobile source air toxics are largely associated with freeways and high traffic roads. Non-mobile source air toxics are largely associated with industrial and commercial uses. Table 3.2-11 provides the California Air Resources Board minimum separation recommendations on siting sensitive land uses.

The CARB recommends avoiding placing new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles per day. The Project site is not within 500 feet of any highway or interstate (the closest highway, CA-16, is located more than 2.5 miles to the south of the Project site). Moreover, the Project site is not located adjacent to any major roadways, and Project sensitive receptors would not be located within 500 feet of

roadways with traffic volumes of 50,000 vehicles/day or greater. Therefore, the site lies beyond the CARB-recommended buffer area, and future receptors would not be negatively affected by toxic air contaminants generated on nearby roadways. The Project is primarily a residential development, with some light commercial and recreation land uses. These land uses are not typically known to expose the public to substantial concentrations of TACs. In addition, there are no distribution centers, rail yards, ports, refineries, chrome platers, dry cleaners, or gasoline dispensing facilities located in the vicinity of the Project site. There are no major stationary sources of toxic air contaminants identified in the vicinity of the development site that could potentially affect future on-site sensitive receptors, and the Project would not be a large generator of diesel truck trips during Project operation. Therefore, development of the Project would not cause a substantial increase in exposure of sensitive receptors to localized concentrations of TACs. This Project would have a ***less than significant*** relative to this topic.

TABLE 3.2-11: CARB MINIMUM SEPARATION RECOMMENDATIONS ON SITING SENSITIVE LAND USES

SOURCE CATEGORY	*ADVISORY RECOMMENDATIONS*
Freeways and High-Traffic Roads	• Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	• Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). • Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	• Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. • Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	• Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the CARB on the status of pending analyses of health risks.
Refineries	• Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	• Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloro- ethylene	• Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. • Do not site new sensitive land uses in the same building with perc dry cleaning operations.
Gasoline Dispensing Facilities	• Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities.

SOURCE: AIR QUALITY AND LAND USE HANDBOOK: A COMMUNITY HEALTH PERSPECTIVE" (CARB, 2007)

DIESEL PARTICULATE MATTER

The Project requires earthmoving during the Project's construction phase. Construction activity can result in emissions from particulate matter from diesel exhaust (diesel PM). CalEEMod was used to estimate construction PM_{10} emissions for the Project. Construction emissions are discussed in more detail under Impact 3.2-2 (detailed CalEEMod emissions calculations are presented in Appendix B). An estimated Project construction schedule, quantity and types of diesel-powered equipment, and number of hours of equipment operated per day is provided under the "CalEEMod Methodology" discussion provided above. Residential receptors are located

surrounding the Project site to the north, northwest, southeast, and east of the Project site. Wind direction varies by time of the year, but typically comes from the south in late winter/early spring and from mid-summer through late fall, while the wind is most often from west from during late spring/early summer, and from the north during the winter. Construction staging areas would be located adjacent to Project construction activities throughout the duration of Project construction.

The SMAQMD has not established a quantitative threshold of significance for construction-related TAC emissions. SMAQMD construction-related best management practices require the implementation of construction dust mitigation measures to reduce overall PM emissions during construction, consistent with the recommendations of the SMAQMD in their *Guide to Air Quality Assessment in Sacramento County (CEQA Guide)* (2018). The Project does not contain any land uses or construction activities that would generate an unusual amount of diesel PM, in comparison to projects of a similar kind. The Project would have a ***less than significant*** impact with regard to diesel PM.

Impact 3.2-4: The Project has the potential to result in other emissions (such as those leading to odors) that could adversely affect a substantial number of people (Less than Significant)

In addition to criteria pollutants and TACs, other emissions that have the potential to affect a substantial number of people are offensive odors. While offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the SMAQMD. The general nuisance rule (Heath and Safety Code §41700 and SMAQMD Rule 402) is the basis for the SMAQMD threshold. In addition, Policy AQ.1.5 of the City of Rancho Cordova General Plan requires an odor impact analysis for new development that could generate objectionable odors near sensitive receptors or locate new sensitive receptors near existing sources of objectionable odors. A project may reasonably be expected to have a significant adverse odor impact where it "generates odorous emissions in such quantities as to cause detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which may endanger the comfort, repose, health, or safety of any such person or the public, or which may cause, or have a natural tendency to cause, injury or damage to business or property."

As discussed under Impact 3.2-4, implementation of the Project would not place sensitive receptors adjacent to TACs above the applicable standards and thresholds. Similarly, implementation of the Project would not directly create or generate objectionable odors to a significant degree. The Project would also not place sensitive receptors near objectionable odors. Trash in enclosed areas from the commercial uses would be separated at a sufficient distance from nearby residences, and enclosed in industry-standard containers, such that odors from trash would not generally generate noticeable odors for nearby residential receptors.

Examples of facilities that are known producers of odors include: Wastewater Treatment Facilities, Chemical Manufacturing, Sanitary Landfill, Fiberglass Manufacturing, Transfer Station, Painting/Coating Operations (e.g. auto body shops), Food Processing Facility, Petroleum Refinery,

Asphalt Batch Plant, and Rendering Plant. The Project would not develop any of these known producers of odors.

Separately, Project construction activities have the potential to generate objectionable odors on nearby existing residential receptors during Project construction activities (such as those to the west and north of the Project site, or those within the project site itself). Diesel-fueled construction equipment and heavy-duty trucks can generate odorous diesel particulate matter (diesel PM) exhaust emissions that could adversely affect nearby receptors. However, the Project would be developed in phases over several years. Since only small portions of the Project site would be developed on a given day, odors from Project construction activities are expected to be minimal. In addition, the Project site is relatively flat, which would help to disperse odors for construction activities. Furthermore, as provided under Impact 3.2-2, the Project would be required to implement the SMAQMD's Basic Construction Emissions Control Practices (Best Management Practices), which would reduce PM emissions, thereby reducing the potential for project construction activities to generate odors that would affect a substantial number of people.

It should be noted that the California Supreme Court decision in the case of *California Building Industry Association v. Bay Area Air Quality Management District (2015) 62 Cal. 4th 369* clarified that lead agencies are not required by CEQA to analyze the impact of existing environmental conditions on a project's future users or residents unless the project will exacerbate the existing environmental hazards or conditions. This limits the CEQA analysis of existing odor source impacts on new receptors from a project (SMAQMD, 2018).[7] The Project would not exacerbate existing environmental odors. Therefore, the Project would have a ***less than significant*** impact with regard to the potential for odors.

[7] See Sacramento Metropolitan Air Quality Management District CEQA Guide, page 7-2.

This page left intentionally blank.

This section describes the regulatory setting, regional biological resources, and impacts that are likely to result from Project implementation. This section is based in part on the following:

- *Rancho Cordova General Plan* (City of Rancho Cordova, Adopted June 26, 2006);
- *Rancho Cordova General Plan Draft Environmental Impact Report* (City of Rancho Cordova, March 2006);
- *South Sacramento Habitat Conservation Plan* (February 2018);
- *Special-Status Plan Survey for The Ranch (Jaeger 530) Project located in the City of Rancho Cordova, Sacramento County, California* (Foothill Associates, 2017);
- *Aquatic Resources Delineation Report* (Foothill Associates, 2017);
- *Biological Resources Assessment* (Foothill Associates, 2017);
- Site visit by De Novo Planning Group staff biologist, Steve McMurtry (August 2018).

The analysis contained in this section is intended to be at a Project -level, and covers impacts associated with development of the entire site, with the exception of the parcels designated as protected areas for preservation (Lots E and F), to an urban use.

Comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic from the following: California Department of Fish and Wildlife (CDFW, August 2018), and Central Valley Regional Water Quality Control Board (RWQCB, July 2018). Each of the comments related to this topic are addressed within this section.

3.3.1 ENVIRONMENTAL SETTING

REGIONAL SETTING

The Project site is located within the southern portion of the Sacramento Valley bioregion, and just north of the Bay/Delta bioregion. The Sacramento Valley bioregion is a watershed of the Sierra Nevada that encompasses the northern end of the great Central Valley, stretching from Redding to Yolo and Sacramento counties. The bioregion is generally flat, and is rich in agriculture. The bioregion has a climate that is characterized by hot dry summers and cool wet winters. Historically, oak woodlands, riparian forests, vernal pools, freshwater marshes, and grasslands have been the major natural vegetation of the bioregion; however, much of the region has been converted to agricultural uses. This bioregion is the most prominent wintering area for waterfowl, attracting significant numbers of ducks and geese to its seasonal marshes along the Pacific Flyway. Species include northern pintails, snow geese, tundra swans, sandhill cranes, mallards, grebes, peregrine falcons, heron, egrets, and hawks. Black-tailed deer, coyotes, river otters, muskrats, beavers, ospreys, bald eagles, salmon, steelhead, and swallowtail butterflies are some of the wildlife that are common in this bioregion.

CALIFORNIA WILDLIFE HABITAT RELATIONSHIPS SYSTEM

The California Wildlife Habitat Relationships (CWHR) habitat classification scheme has been developed to support the CWHR System, a wildlife information system and predictive model for California's regularly-occurring birds, mammals, reptiles and amphibians. When first published in 1988, the classification scheme had 53 habitats. At present, there are 59 wildlife habitats in the

CWHR System: 27 tree, 12 shrub, 6 herbaceous, 4 aquatic, 8 agricultural, 1 developed, and 1 non-vegetated.

The Sacramento Valley region is considered to have low biological diversity due to the conversion of native habitat to agricultural and urban uses. As shown in Figure 3.3-1, the CWHR shows the entire Project site as having Annual Grassland habitat. In addition, although not found on the Project site, the following CWHR wildlife habitats exist in the Project vicinity: Fresh Emergent Wetland, Riverine, and Urban. Below is a brief description of these CWHR habitats.

Annual Grassland habitats occurs mostly on flat plains to gently rolling foothills. Annual Grassland habitats are open grasslands composed primarily of annual plant species. Introduced annual grasses are the dominant plant species in this habitat. These include wild oats, soft chess, ripgut brome, red brome, wild barley, and foxtail fescue. Common forbs include broadleaf filaree, redstem filaree, turkey mullein, true clovers, bur clover, popcorn flower, and many others.

Many wildlife species use Annual Grasslands for foraging, but some require special habitat features such as cliffs, caves, ponds, or habitats with woody plants for breeding, resting, and escape cover. Characteristic reptiles that breed in Annual Grassland habitats include the western fence lizard, common garter snake, and western rattlesnake. Mammals typically found in this habitat include the black-tailed jackrabbit, California ground squirrel, Botta's pocket gopher, western harvest mouse, California vole, badger, and coyote. Common birds known to breed in Annual Grasslands include the burrowing owl, short-eared owl, horned lark, and western meadowlark. This habitat also provides important foraging habitat for the turkey vulture, northern harrier, American kestrel, black-shouldered kite, and prairie falcon. The entire Project site contains the Annual Grassland wildlife habitat type.

Riverine habitats can occur in association with many terrestrial habitats. Riverine habitats are found adjacent to many rivers and streams. Riverine habitats are also found contiguous to lacustrine and fresh emergent wetland habitats. This habitat requires intermittent or continually running water generally originating at some elevated source, such as a spring or lake, and flows downward at a rate relative to slope or gradient and the volume of surface runoff or discharge. Velocity generally declines at progressively lower altitudes, and the volume of water increases until the enlarged stream finally becomes sluggish. Over this transition from a rapid, surging stream to a slow, sluggish river, water temperature and turbidity will tend to increase, dissolved oxygen will decrease, and the bottom will change from rocky to muddy. Riverine habitat is located west of the Project site.

Fresh Emergent Wetland habitats occur on virtually all exposures and slopes, provided a basin or depression is saturated or at least periodically flooded. They are most common on level to gently rolling topography. They are found in various depressions or at the edge of rivers or lakes. Soils are predominantly silt and clay, although coarser sediments and organic material may be intermixed. In some areas organic soils (peat) may constitute the primary growth medium. Climatic conditions are highly variable and range from the extreme summer heat to winter temperatures well below freezing. Fresh Emergent Wetland habitats are located to the west and south of the Project site.

Urban habitats are not limited to any particular physical setting. Three urban categories relevant to wildlife are distinguished: downtown, urban residential, and suburbia. The heavily-developed downtown is usually at the center, followed by concentric zones of urban residential and suburbs. There is a progression outward of decreasing development and increasing vegetative cover. Species richness and diversity is extremely low in the inner cover. The structure of urban vegetation varies, with five types of vegetative structure defined: tree grove, street strip, shade tree/lawn, lawn, and shrub cover. A distinguishing feature of the urban wildlife habitat is the mixture of native and exotic species. Urban habitats are located to the north, west, and south of the Project site.

SOUTH SACRAMENTO HABITAT CONSERVATION PLAN COVER TYPES

The South Sacramento Habitat Conservation Plan (SSHCP) Conservation Strategy provides for conservation of 28 Covered Species and 17 Land Cover types, avoids or minimizes impacts of Covered Activities, mitigates for the impacts of Covered Activities on the Covered Species and their habitats on the basis of species and habitat needs, provides a regional approach to the mitigation of impacts and the conservation of species and their habitats, protects wetlands and waters of the SSHCP Plan Area, and conserves natural communities in the SSHCP Plan Area.

Seventeen of the SSHCP land cover types are classified by the SSHCP as "Natural Land Covers," which includes 10 Aquatic land cover types and 7 Terrestrial land cover types. Agricultural lands that provide Covered Species habitat are included in the "Natural Land Covers" grouping.

The SSHCP land cover types for the Project site are shown in Figure 3.3-2. As shown, the Project site contains two SSHCP land cover types: Vernal Pool and Valley Grassland. Below is a brief description of these SSHCP land cover types.

Vernal Pool habitats support unique assemblages of highly specialized plants and animals that are adapted to the annual cycle of winter inundation and summer drought. Consequently, vernal pools are one of the few habitats in California still dominated by native plant and animal species. Vernal pools provide habitat for rare and endangered animals such as vernal pool tadpole shrimp (*Lepidurus packardi*), vernal pool fairy shrimp (*Branchinecta lynchi*), conservancy fairy shrimp, Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*), and several amphibians (e.g., western spadefoot toad (*Spea hammondii*), California tiger salamander (*Ambystoma californiense*), and vernal pools support a number of migratory birds in the winter.

Valley Grassland habitats are the most common land cover type in the SSHCP. Valley Grassland is an annual herbaceous plant community now characterized mostly by naturalized annual grasses. Valley Grassland supports numerous wildlife species, including several Covered Species. Covered Species associated with Valley Grassland included California tiger salamander, western spadefoot toad, giant gartersnake (*Thamnophis gigas*), western pond turtle (*Emys marmorata*), all of the bird Covered Species (except Cooper's hawk (*Accipiter cooperii*)), American badger (*Taxidea taxus*), and western red bat (*Lasiurus blossevillii*).

3.3 BIOLOGICAL RESOURCES

LOCAL SETTING

The Project site consists of approximately 530 acres located in the Rancho Cordova city limits. The Project site is bound by existing single-family residential uses and Douglas Road to the north, vacant land and Grant Line Road to the east, vacant land and Kiefer Boulevard to the south, and Rancho Cordova Parkway, single family residential, and vacant land on the west.

The Project site is currently vacant and has been previously used for agricultural uses (cattle grazing). The topography of the site exhibits low relief topography with elevations ranging between 170 and 210 feet above mean sea level (MSL). The slopes throughout the site range from approximately zero to eight percent. The site is characterized by moderate rolling hills and areas of extensive flatlands, with wetlands, vernal pools, and seasonal drainage courses scattered throughout the site. A headwater tributary of Morrison Creek traverses the Project site, entering at the northeast corner and flowing generally to the southwest. A total of 21.53 acres of jurisdictional aquatic resources have been mapped with the Project site, including: 2.92 acres of depressional seasonal wetlands, 15.04 acres of vernal pools, 1.66 acres of riverine seasonal wetlands, 0.06 acres of riverine seasonal wet swales, 1.54 acres of intermittent drainages, and 0.30 acres of drainage basin outfalls.

The property is traversed by a 275-foot-wide utility easement occupied by a 230-kV Pacific Gas and Electric (PG&E) transmission line, one 230-kV Sacramento Municipal Utility District (SMUD) transmission line, and one 69-kV SMUD sub-transmission line. No other public utilities (water, sewer, drainage) are located on site.

The Project site is bound by the Sunridge Specific Plan to the north, east, and west, and by the SunCreek Specific Plan to the south and east. Land uses anticipated to the east and south of the Project site by the Sunridge Specific Plan and the SunCreek Specific Plan include low, medium, and high density residential uses, commercial mixed uses (retail, office, and retail professional), and neighborhood parks. Other land uses located nearby include new elementary, junior and senior high schools.

SPECIAL-STATUS SPECIES

Special-status species are generally defined as: 1) species listed as a candidate, threatened, or endangered under the federal or state Endangered Species Act; 2) species considered rare or endangered under the California Environmental Quality Act; 3) plants considered “rare, threatened, or endangered in California” by the California Native Plant Society (CNPS) (Lists 1B); 4) animal listed as "species of special concern" by the state; and 5) animals fully protected in California by the Fish and Game Code.

The following discussion is based on a background search of special-status species that are documented in the California Natural Diversity Database (CNDDB), the CNPS Inventory of Rare and Endangered Plants, the U.S. Fish and Wildlife Service’s (USFWS) Information for Planning and Consultation (IPAC) endangered and threatened species list, and observations from local experts. The background search was regional in scope and focused on the documented occurrences within the 9-quadrangle radius of the Project site, which includes the following USGS quadrangles: Citrus

Heights, Folsom, Clarksville, Carmichael, Buffalo Creek, Folsom Southeast, Elk Grove, Sloughhouse, and Carbondale.

The search revealed 50 special-status species within the region: 23 plants, and 27 animals. Figure 3.3-3 illustrates the general location of these records maintained by the CNDDB. Table 3.3-1 provides a list of special-status plant species that are documented in the region, their habitat, potential for Project site occurrence, and current protective status. Potential for occurrence is based on the findings of Foothill Associates identified in 1) the Biological Resources Assessment dated October 13, 2017, which included a field survey to determine potential for species, and 2) the Special-Status Plant Survey dated October 20, 2017 which included a focused field survey conducted on June 12 and 13, 2017 to identify the presence of rare plants associated with vernal pool and riverine wetland features present on the Project site with a blooming period in June. Table 3.3-2 provides a list of special-status wildlife species that are documented in the region, their habitat, potential for Project site occurrence, and current protective status.

TABLE 3.3-1: SPECIAL-STATUS PLANTS WITHIN 9-QUADRANGLE REGION FOR PROJECT SITE

PLANT	*STATUS (FED; CA; CNPS)*	*HABITAT ASSOCIATION*	*BLOOMING PERIOD*	*POTENTIAL FOR OCCURRENCE*
Ahart's dwarf rush *Juncus leiospermus var. ahartii*	--;--;1B.2	Valley and foothill grassland. Restricted to the edges of vernal pools in grassland. 30-100 m.	March to May	**High Potential**. Not observed. Site supports habitat in the seasonal wetlands and drainages. There are two occurrences of this species within five miles of the site.
Bisbee Peak rush-rose *Crocanthemum suffrutescens*	--;--;3.2	Chaparral. Often on serpentine, gabbroic, or Ione formation soils; in openings in chaparral. 45-840 m.	April to August	**Absent**. Site does not contain the required soil types.
Boggs Lake hedge-hyssop *Gratiola heterosepala*	--;CE;1B.2	Marshes and swamps (freshwater), vernal pools. Clay soils; usually in vernal pools, sometimes on lake margins. 4-2410 m.	April to August	**Absent**. Though the vernal pools within the Project site provide habitat for this species, this species was not observed during the June 12 and 13, 2017 rare plant survey.
Brandegee's clarkia *Clarkia biloba* ssp. *brandegeeae*	--;--;4.2	Chaparral, cismontane woodland, lower montane coniferous forest. Often in roadcuts. 75-915 m.	May to July	**Absent**. Not observed. Lacks potential suitable habitat.
Dwarf downingia *Downingia pusilla*	--;--;2B.2	Annual herb found in vernal pools and valley and foothill grasslands (mesic). At elevations of 1-445 meters.	March to May	**Low Potential**. Not observed. There is a low potential for this species to occur within the non-native annual grassland and vernal pools within the Project site.
El Dorado bedstraw *Galium californicum ssp. sierrae*	FE;CR; 1B.2	Cismontane woodland, chaparral, lower montane coniferous forest. In pine-oak woodland or chaparral. Restricted to gabbroic or serpentine soils. 130-585 m.	May to June	**Absent**. Not observed. Lacks potential suitable habitat.

PLANT	*STATUS (FED; CA; CNPS)*	*HABITAT ASSOCIATION*	*BLOOMING PERIOD*	*POTENTIAL FOR OCCURRENCE*
El Dorado County mule ears *Wyethia reticulata*	--;--;1B.2	Chaparral, cismontane woodland, lower montane coniferous forest. Stony red clay and gabbroic soils; often in openings in gabbro chaparral. 120-630 m.	April to August	**Absent**. Not observed. Lacks potential suitable habitat.
Hoary navarretia *Navarretia eriocephala*	--;--;4.3	Annual herb found in pine and oak woodlands and grasslands from 30 to 1,300 feet above sea level.	May to June	**Low Potential.** Not observed. The grassland of the Project site provides habitat for this species. There are no documented CNDDB records of this species occurring within five miles of the Project site.
Ione buckwheat *Eriogonum apricum var. apricum*	FE;CE; 1B.1	Chaparral. In gravelly openings on Ione formation soil. 85-150 m.	July to October	**Absent**. Not observed. Lacks potential suitable habitat.
Ione manzanita *Arctostaphylos myrtifolia*	FT;--;1B.2	Chaparral, cismontane woodland. On Ione clay with chaparral associates. Often comprises 50-80% cover. 90-560 m.	November to March	**Absent**. Not observed. Lacks potential suitable habitat.
Irish Hill buckwheat *Eriogonum apricum var. prostratum*	FE;CE; 1B.1	Chaparral. Gravelly openings on Ione formation soils. 90-100 m.	June to July	**Absent**. Not observed. Lacks potential suitable habitat.
Layne's ragwort *Packera layneae*	FT;CR; 1B.2	Chaparral, cismontane woodland. Ultramafic soil (serpentine or gabbro); occasionally along streams. 200-1085 m.	April to August	**Absent**. Not observed. Lacks potential suitable habitat.
Legenere *Legenere limosa*	--;--;1B.1	Vernal pools. In beds of vernal pools. 1-880 m.	April to June	**Absent**. Though the vernal pools within the Project site provide habitat for this species, this species was not observed during the June 12 and 13, 2017, rare plant survey. There are 13 CNDDB occurrences within five miles of the site.
Parry's horkelia *Horkelia parryi*	--;--;1B.2	Chaparral, cismontane woodland. Openings in chaparral or woodland; especially known from the Ione formation in Amador County. 85-1115 m.	April to September	**Absent**. Not observed. Lacks potential suitable habitat.
pincushion navarretia *Navarretia myersii* ssp. *myersii*	--;--;1B.1	Vernal pools. Clay soils within non-native grassland. 45-100 m.	April to May	**Low Potential**. Not observed. There is a low potential for this species to occur within the vernal pools within the Project site. There are no documented CNDDB records of this species occurring within five miles of the Project site.
Pine Hill ceanothus *Ceanothus*	FE;CR; 1B.1	Chaparral, cismontane woodland. Gabbroic or serpentine soils; often in	April to June	**Absent**. Not observed. Lacks potential suitable

PLANT	STATUS (FED; CA; CNPS)	HABITAT ASSOCIATION	BLOOMING PERIOD	POTENTIAL FOR OCCURRENCE
roderickii		"historically disturbed" areas with an ensemble of other rare plants. 260-630 m.		habitat.
Pine Hill flannelbush *Fremontodendron decumbens*	FE;CR; 1B.2	Chaparral, cismontane woodland. Rocky ridges; gabbro or serpentine endemic; often among rocks and boulders. 425-765 m.	April to June	**Absent**. Not observed. Lacks potential suitable habitat.
Red Hills soaproot *Chlorogalum grandiflorum*	--;--;1B.2	Cismontane woodland, chaparral, lower montane coniferous forest. Occurs frequently on serpentine or gabbro, but also on non-ultramafic substrates; often on "historically disturbed" sites. 265-1695 m.	May to June	**Absent**. Not observed. Lacks potential suitable habitat.
Sacramento Orcutt grass *Orcuttia viscida*	FE;CE; 1B.1	Vernal pools. 15-85 m.	April to September	**Absent**. The vernal pools within the Project site provide habitat for this species. This species was not observed during the June 12 and 13, 2017, plant survey.
Sanford's arrowhead *Sagittaria sanfordii*	--;--;1B.2	Marshes and swamps. In standing or slow-moving freshwater ponds, marshes, and ditches. 0-605 m.	May to November	**Absent**. Not observed. Lacks potential suitable habitat.
slender Orcutt grass *Orcuttia tenuis*	FT;CE; 1B.1	Vernal pools. Often in gravelly substrate. 25-1755 m.	May to October	**Absent**. Though the vernal pools within the Project site provide habitat for this species, this species was not observed during the June 12 and 13, 2017, rare plant survey.
stinkbells *Fritillaria agrestis*	--;--;4.2	Cismontane woodland, chaparral, valley and foothill grassland, pinyon and juniper woodland. Sometimes on serpentine; mostly found in nonnative grassland or in grassy openings in clay soil. 10-1555 m.	March to June	**Absent**. Not observed. Lacks potential suitable habitat.
Tuolumne button-celery *Eryngium pinnatisectum*	--;--;1B.2	Vernal pools, cismontane woodland, lower montane coniferous forest. Volcanic soils; vernal pools and mesic sites within other natural communities. 70-915 m.	May to August	**Absent**. Though the vernal pools and grassland within the Project site provide habitat for this species, this species was not observed during the June 12 and 13, 2017, rare plant survey.

[1]*RARE PLANT SURVEY CONDUCTED FOR SACRAMENTO ORCUTT GRASS, SLENDER ORCUTT GRASS, AND BOGGS LAKE HEDGE HYSSOP.*
SOURCE: FOOTHILL ASSOCIATES, 2017; CDFW, 2018; CNDDB 2018.

ABBREVIATIONS:

FEDERAL LISTS
- *FE* — *FEDERAL ENDANGERED*
- *FT* — *FEDERAL THREATENED*

STATE LISTS
- *CE* — *CALIFORNIA ENDANGERED SPECIES*
- *CR* — *CALIFORNIA RARE*

CALIFORNIA RARE PLANT RANKS (FORMERLY CNPS LISTS)
- *1B* — *RARE, THREATENED, OR ENDANGERED*
- *2B* — *RARE, THREATENED, OR ENDANGERED IN CALIFORNIA, BUT MORE COMMON ELSEWHERE*
- *3* — *REVIEW LIST: PLANTS WHICH MORE INFORMATION IS NEEDED*
- *4* — *WATCH LIST: PLANTS OF LIMITED DISTRIBUTION*

TABLE 3.3-2: SPECIAL-STATUS ANIMALS WITHIN 9-QUADRANGLE REGION FOR PROJECT SITE

ANIMAL	*STATUS (FED; CA)*	*HABITAT ASSOCIATION*	*POTENTIAL FOR OCCURRENCE*
MAMMALS			
American badger *Taxidea taxus*	--;SSC	This species prefers dry open fields, grasslands, and pastures. From high alpine meadows to se a level.	**Low Potential.** There are no CNDDB records for this species within five miles of the Project site. The annual grassland and burrows provide marginal habitat for this species given the lack of sandy soils within the Project site. No American badgers were observed during the biological surveys.
pallid bat *Antrozous pallidus*	--;SSC	Roosts in rock outcrops, hollow trees, abandoned mines, barns, and attics.	**Low Potential.** There are no CNDDB records for this species within five miles of the Project site. No bat species were observed roosting during previous site visits. The sparse man-made structures, including utility towers and a utility shed in the center of the Project site, provide marginal day roosting habitat and the annual grassland provides foraging habitat for this species.
BIRDS			
bald eagle *Haliaeetus leucocephalus*	MBTA;CE	Breeding range includes the Sierra Nevada, Cascade Range and portions of the Coast Ranges; winter range expands to include most of the state. Forages primarily in large inland fish-bearing waters with adjacent large trees or snags and occasionally in uplands with abundant rabbits, other small mammals, or carrion.	**Absent**. No potential to occur. Habitat not present.
bank swallow *Riparia Riparia*	MBTA;CT	Prefer to nest along banks or bluffs alone rivers or coastal areas. Prefer low gradient and meandering rivers or bodies of water.	**Absent**. No potential to occur. Habitat not present.
burrowing owl *Athene cunicularia*	MBTA; SSC	Nests in abandoned ground squirrel burrows associated with open grassland habitats. Found in areas with sparse vegetation and few trees.	**High Potential**. There are 12 CNDDB records for this species within five miles of the Project site, though no western burrowing owls were observed during site visits. The Project site contains suitable burrows to support this species.
California black rail *Laterallus jamaicensis coturniculus*	MBTA;CT	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	**Low Potential**. Site supports habitat in the seasonal wetlands and drainages.
Cooper's hawk *Accipiter cooperii*	MBTA;--	Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	**High Potential.** Suitable habitat present. The annual grassland on and surrounding the Project site may provide nesting and foraging habitat.
double-crested cormorant *Phalacrocorax auritus*	MBTA;--	Colonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping	**Absent**. No potential to occur. Habitat not present.

ANIMAL	STATUS (FED; CA)	HABITAT ASSOCIATION	POTENTIAL FOR OCCURRENCE
		surface, or in tall trees along lake margins.	
ferruginous hawk *Buteo regalis*	MBTA; WL	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats. Eats mostly lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.	**High Potential.** Suitable habitat present. The annual grassland on and surrounding the Project site may provide nesting and foraging habitat.
golden eagle *Aquila chrysaetos*	MBTA;FP	Winter range spans most of California; breeding range excludes the Central Valley floor. Nests in cliffs, rocky outcrops and large trees. Forages in a variety of open habitats, including grassland, shrubland, and cropland.	**High Potential.** Suitable habitat present. There is one CNDDB record of golden eagle documented within five miles of the Project site. No golden eagles were observed during previous site visits. Although the Project site does not provide suitable nesting trees, the non-native annual grassland provides foraging habitat for this species.
great egret *Ardea alba*	MBTA;--	Colonial nester in large trees. Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	**Absent.** The grassland of the Project site provides foraging habitat for this species. There is no nesting habitat within the Project site.
great blue heron *Ardea herodias*	MBTA;--	Colonial nester in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	**Absent.** The grassland of the Project site provides foraging habitat for this species and this species was observed flying over the Project site during the June 12, 2017, rare plant survey. However, there is no nesting habitat within the Project site.
grasshopper sparrow *Ammodramus savannarum*	MBTA; SSC	Prefer open grasslands with barren ground for foraging. Tend to be found in areas with vegetation and scrub cover especially in grasslands and prairies.	**High Potential.** Suitable habitat present. The annual grassland on and surrounding the Project site may provide nesting and foraging habitat.
merlin *Falco columbarius*	MBTA; WL	It is not known to nest in California, but it is a winter transient throughout most of California with wintering populations in the Central Valley. Avoid dense forests and inhabit fairly open land.	**High Potential.** Suitable habitat present. The annual grassland on and surrounding the Project site may provide nesting and foraging habitat.
Swainson's hawk *Buteo Swainsoni*	MBTA;CT	Nests in tall cottonwoods, valley oaks or willows. Forages in fields, cropland, irrigated pasture, and grassland often near riparian corridors.	**High Potential.** Suitable habitat present. The annual grassland on and surrounding the Project site may provide nesting and foraging habitat.
tricolored blackbird *Agelaius tricolor*	MBTA;CE	Colonial nester in cattails, bulrush, or blackberries associated with wetland or drainage habitats. Also need foraging areas such as grasslands or agricultural pastures.	**Low Potential**. The SSHCP tricolored blackbird modeled habitat map (SSHCP Figure 3-26) shows that modeled habitat for tricolored blackbird is present within the Project footprint. The annual grassland on the Project site provides suitable foraging habitat for this species. The aquatic habitat on the Project site does not provide suitable nesting habitat for this species.
white-tailed kite *Elanus leucurus*	MBTA;FP	Nests in riparian corridors along streams and rivers, and forages in nearby grasslands and fields.	**High Potential.** Suitable habitat present.

ANIMAL	*STATUS (FED; CA)*	*HABITAT ASSOCIATION*	*POTENTIAL FOR OCCURRENCE*
AMPHIBIANS & REPTILES			
California red-legged frog *Rana draytonii*	FT;SSC	Along the coast and coastal mountain ranges of California from Marin County to San Diego County and in the Sierra Nevada from Tehama County to Fresno County. Permanent and semi-permanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation; may estivate in rodent burrows or cracks during dry periods.	**Absent**. No potential to occur. The Project site is outside of the known extant range for this species.
California tiger salamander *Ambystoma californiense*	FT;CT	Breeds in ponds or other deeply ponded wetlands, and uses gopher holes and ground squirrel burrows in adjacent grasslands for upland refugia/foraging.	**Absent.** Though the grassland, burrows, and detention basin outfall of the Project site provide habitat for this species, the Project site is outside of the known range for this species and this species has not been observed during previous focused surveys.
foothill yellow-legged frog *Rana boylii*	--;SSC	Found in most of northern California west of the Cascade crest and along the western Sierra Nevada foothills up to approximately 6,370 feet. Rocky streams in a variety of habitats including valley-foothill hardwood, conifer, and riparian forests, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral and wet meadow.	**Absent**. The Project site is outside of the known range for this species and this species has not been observed during previous focused surveys. There are no CNDDB occurrences within five miles of the Project site.
giant garter snake *Thamnophis gigas*	FT;CT	Rivers, canals, irrigation ditches, rice fields, and other aquatic habitats with slow moving water and heavy emergent vegetation.	**Absent**. The Project site does not provide habitat for this species.
western pond turtle *Emys marmorata*	--;SSC	Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests.	**Absent**. The Project site does not provide habitat for this species.
western spadefoot *Spea hammondii*	--;SSC	Sierra Nevada foothills, Central Valley, Coast Ranges, coastal counties in southern California. Shallow streams with riffles and seasonal wetlands, such as vernal pools in annual grasslands and oak woodlands	**High Potential.** Suitable habitat present. The vernal pools and depressional seasonal wetlands in the Project site provide breeding habitat and there is one known occurrence within five miles of the Project site.
FISH			
steelhead - Central Valley DPS *Oncorhynchus mykiss irideu*	FT;--	Populations in the Sacramento and San Joaquin Rivers and their tributaries. Free of heavy sedimentation with adequate flow and cool, clear water. Gravel that is between 0.5 to 6.0 inches in diameter, dominated by 2 to 3-inch gravel. Escape cover such as logs, undercut banks, and deep pools for spawning adults.	**Absent.** No potential to occur. Habitat not present.

ANIMAL	*STATUS (FED; CA)*	*HABITAT ASSOCIATION*	*POTENTIAL FOR OCCURRENCE*
INVERTEBRATES			
vernal pool fairy shrimp *Branchinecta lynchi*	FT;--	Vernal pools or other seasonal wetlands. Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County.	**High Potential.** Suitable habitat present.
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT;--	Dependent upon elderberry plant (*Sambucus mexicana*) as primary host species. Riparian and oak savanna habitats with elderberry shrubs; elderberries are the host plant. Stream side habitats below 3,000 feet throughout the Central Valley.	**Absent**. The Project site does not provide habitat for this species. There are five CNDDB occurrences within five miles of the Project site.
vernal pool tadpole shrimp *Lepidurus packardi*	FE;--	Vernal pools and ephemeral stock ponds. Shasta County south to Merced County.	**High Potential.** Suitable habitat present.

SOURCE: CDFW CNDDB 2018.

ABBREVIATIONS:

FEDERAL LISTS

FE *FEDERAL ENDANGERED*
FT *FEDERAL THREATENED*
MBTA *PROTECTED BY MIGRATORY BIRD TREATY ACT*

STATE LISTS

CE *CALIFORNIA ENDANGERED SPECIES*
CT *CALIFORNIA THREATENED*
SSC *CDFW SPECIES OF SPECIAL CONCERN/CDFW SPECIAL ANIMALS*
WL *WATCH LIST*
FP *FULLY PROTECTED*

3.3.2 REGULATORY SETTING

There are a number of regulatory agencies whose responsibility includes the oversight of the natural resources of the state and nation including the CDFW, USFWS, U.S. Army Corps of Engineers (USACE), and the National Marine Fisheries Service (NMFS). These agencies often respond to declines in the quantity of a particular habitat or plant or animal species by developing protective measures for those species or habitat type. The following is an overview of the federal, state and local regulations that are applicable to the Project.

FEDERAL

Federal Endangered Species Act

The Federal Endangered Species Act (FESA), administered by the USFWS and NMFS, provides protection to plant and wildlife species listed as endangered or threatened. In general, USFWS has jurisdiction over terrestrial and fresh-water species, while NMFS has jurisdiction over ocean-going species.

Section 9 of FESA generally prohibits all persons from causing the "take" of any member of a listed species. (16 U.S.C. Section 1538.) This prohibition applies mainly to animals; it only extends to plants in areas “under federal jurisdiction” and plants already protected under state law. (Id., subd. (a)(2)(B); see also Northern Cal. River Watch v. Wilcox (9th Cir. 2010) 620 F.3d 1075.)

"Take" is defined in statute as, "... to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." (16 U.S.C. Section 1532(19).) Harass is defined in regulation as "...an intentional or negligent act or omission that creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns that include, but are not limited to, breeding, feeding, or sheltering." (See 50 CFR Section 17.3.) Harm is defined in regulation as "...significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering." (Id.) Despite the general prohibition against take, FESA in some circumstances permits "incidental take," which means take that is incidental to, but not the purpose of, the carrying out of an otherwise lawful activity. (16 U.S.C. Section 1539(a).) Under section 10 of FESA, persons seeking permission to engage in actions that could result in such incidental take can obtain such permission through the approval of a habitat conservation plan (HCP) by either USFWS or NMFS. (16 U.S.C., Section 1539(a).)

Proposed federal actions that would result in take of a federal-listed or proposed species require consultation with USFWS or NMFS under section 7 of FESA. (Id., Section 1536.) The objective of consultation is to determine whether the proposed federal action would jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat. Where such an outcome would not occur, USFWS or NMFS must still impose reasonable and prudent measures to minimize the effects of the incidental taking. Where such an outcome could occur, USFWS or NMFS must propose reasonable and prudent alternatives that, if implemented, would avoid such an outcome. (Id.)

Compliance with FESA can be achieved under Section 7 or 10 of FESA depending on the involvement of the federal government. Section 7 requires federal agencies to make a finding on all federal actions, including the approval by an agency of a public or private action, such as the issuance of a "404 permit" for filling wetlands by the USACE, on the potential of the action to jeopardize the continued existence of any listed species impacted by the action or to result in the destruction or adverse modification of such species' critical habitat. Provisions of Section 10 are implemented when there is no federal involvement in a project except compliance with FESA. A take not specifically allowed by federal permit under Section 7 or Section 10(a)(1)(B) of the FESA is subject to enforcement through civil or criminal proceedings under Section II of the FESA.

Migratory Bird Treaty Act

To kill, posses, or trade a migratory bird, bird part, nest, or egg is a violation of the Federal Migratory Bird Treaty Act (MBTA: 16 U.S.C., Section 703, Supp. I, 1989), unless it is in accordance with the regulations that have been set forth by the Secretary of the Interior.

Federal Bald and Golden Eagle Protection Act

The Federal Bald and Golden Eagle Protection Act provide regulations to protect bald and golden eagles as well as their nests and eggs from willful damage or injury.

Clean Water Act - Section 404

Section 404 of the Clean Water Act (CWA) regulates all discharges of dredged or fill material into waters of the U.S. Discharges of fill material includes the placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes and subaqueous utility lines [33 C.F.R. Section 328.2(f)]. Waters of the U.S. include lakes, rivers, streams, intermittent drainages, mudflats, sandflats, wetlands, sloughs, and wet meadows. Wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" [33 C.F.R. Section 328.3(b)]. Waters of the U.S. exhibit a defined bed and bank and ordinary high-water mark (OHWM). The OHWM is defined by the USACE as "that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" [33 C.F.R. Section 328.3(e)].

Clean Water Act - Section 401

Section 401 of the CWA (33 U.S.C. 1341) requires an applicant who is seeking a 404 permit to first obtain a water quality certification from the RWQCB. To obtain the water quality certification, the Central Valley RWQCB must indicate that the proposed fill would be consistent with the standards set forth by the state.

Rivers and Harbors Act of 1899

The Rivers and Harbors Act prohibits the obstruction or alteration of any navigable water of the United States. The Act requires authorization from the USACE for any excavation or deposition of materials into these waters or for any work that could affect the course, location, condition, or capacity of rivers or harbors.

STATE

Fish and Game Code Sections 2050-2097 - California Endangered Species Act

The CDFW administers a number of laws and programs designed to protect fish and wildlife resources. Principal of these is the California Endangered Species Act (CESA) of 1984 (California Fish and Game Code Section 2050 et seq.), which regulates the listing and take of state endangered and threatened species, as well as candidate species. Under Section 2081 of CESA, CDFW may authorize take of an endangered and/or threatened species, or candidate species, by an incidental take permit (ITP) or Memorandum of Understanding (MOU) for scientific, educational, or management purposes. In approving an incidental permit, CDFW must ensure, among other things, that "[t]he impacts of the authorized take shall be minimized and fully mitigated." Further, "[t]he measures required to meet this obligation shall be roughly proportional

in extent to the impact of the authorized taking on the species. Where various measures are available to meet this obligation, the measures required shall maintain the applicant's objectives to the greatest extent possible. All required measures shall be capable of successful implementation." To be consistent with Federal regulations, CESA created the categories of "threatened" and "endangered" species. It converted all "rare" animals into the Act as threatened species, but did not do so for rare plants, as previously designated under the California Native Plant Protection Act (discussed below). Thus, there are three listing categories for plants in California: rare, threatened, and endangered. Under State law, plant and animal species may be formally designated by official listing by the California Fish and Game Commission.

Fish and Game Code Sections 2800-2835 - Natural Communities Conservation Planning Act

The Natural Communities Conservation Planning Act is set forth in Fish and Game Code Sections 2800–2835. The intent of the legislation is to provide for conservation planning as an officially recognized policy that can be used as a tool to eliminate conflicts between the protection of natural resources and the need for growth and development. In addition, the legislation promotes conservation planning as a means of coordination and cooperation among private interests, agencies, and landowners, and as a mechanism for multispecies and multi-habitat management and conservation. The development of Natural Community Conservation Plans (NCCPs) is an alternative to obtaining take authorization under Section 2081 of the Fish and Game Code.

Fish and Game Code Sections 1900-1913 - California Native Plant Protection Act

In 1977 the State Legislature passed the Native Plant Protection Act (NPPA) in recognition of rare and endangered plants of the state. The intent of the law was to preserve, protect, and enhance endangered plants. The NPPA gave the California Fish and Wildlife Commission the power to designate native plants as endangered or rare, and to require permits for collecting, transporting, or selling such plants. The NPPA includes provisions that prohibit the taking of plants designated as "rare" from the wild, and a salvage mandate for landowners, which requires notification of the CDFW 10 days in advance of approving a building site.

Fish and Game Code Sections 3503, 3503.5, 3800 - Predatory Birds

Under the California Fish and Game Code, all predatory birds in the order Falconiformes or Strigiformes in California, generally called "raptors," are protected. The law indicates that it is unlawful to take, posses, or destroy the nest or eggs of any such bird unless it is in accordance with the code. Any activity that would cause a nest to be abandoned or cause a reduction or loss in a reproductive effort is considered a take. This generally includes construction activities.

Fish and Game Code Sections 1601-1603 - Streambed Alteration

Under the California Fish and Game Code, CDFW has jurisdiction over any proposed activities that would divert or obstruct the natural flow or change the bed, channel, or bank of any lake or stream. Private landowners or project proponents must obtain a "Streambed Alteration

Agreement" from CDFW prior to any alteration of a lake bed, stream channel, or their banks. Through this agreement, the CDFW may impose conditions to limit and fully mitigate impacts on fish and wildlife resources. These agreements are usually initiated through the local CDFW warden and will specify timing and construction conditions, including any mitigation necessary to protect fish and wildlife from impacts of the work.

Fish and Game Code Sections 3511, 3513, 4700, and 5050 - Fully Protected Species

Fish and Game Code Sections 3511, 3513, 4700, and 5050 pertain to fully protected wildlife species (birds in Sections 3511 and 3513, mammals in Section 4700, and reptiles and amphibians in Section 5050) and strictly prohibit the take of these species. CDFW cannot issue a take permit for fully protected species, except under narrow conditions for scientific research or the protection of livestock, or if an NCCP has been adopted.

California Environmental Quality Act Guidelines Section 15380 – Endangered, Rare or Threatened Species

The CEQA Guidelines provide that a species that is not listed on the federal or state endangered species list may nevertheless be considered rare or endangered if the species meets certain criteria. (CEQA Guidelines Section 15380) Species that are not listed under FESA or CESA, but are otherwise eligible for listing (i.e. candidate, or proposed) may be protected by the local government until the opportunity to list the species arises for the responsible agency.

Species that may be considered for review are included on a list of "Species of Special Concern," developed by the CDFW. Additionally, the CNPS, a nongovernmental organization, maintains a list of plant species native to California that have low populations, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. List 1A contains plants that are believed to be extinct. List 1B contains plants that are rare, threatened, or endangered in California and elsewhere. List 2 contains plants that are rare, threatened, or endangered in California, but more numerous elsewhere.

California Wetlands Conservation Policy

In August 1993, the Governor announced the "California Wetlands Conservation Policy." The goals of the policy are to establish a framework and strategy that will:

- Ensure no overall net loss and to achieve a long-term net gain in the quantity, quality, and permanence of wetland acreage and values in California in a manner that fosters creativity, stewardship, and respect for private property.
- Reduce procedural complexity in the administration of State and federal wetland conservation programs.
- Encourage partnerships to make landowner incentive programs and cooperative planning efforts the primary focus of wetland conservation and restoration.

The Governor also signed Executive Order W-59-93, which incorporates the goals and objectives contained in the new policy and directs the Resources Agency to establish an Interagency Task Force to direct and coordinate administration and implementation of the policy.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Water Code Section 13000 et seq.) is California's primary water quality control statute. But its protections extend to wetlands, and in some instances wetlands that are not subject to federal jurisdiction under the Clean Water Act. Under the Porter-Cologne Act definition, waters of the state are "any surface water or groundwater, including saline waters, within the boundaries of the state." (Water Code Section 13050[e].) Although all waters of the United States that are within the borders of California are also waters of the state, the reverse is not necessarily true. Therefore, California retains authority to regulate discharges of waste into any waters of the state, discharges to receiving waters more broadly than the CWA does.

Waters of the state fall under the jurisdiction of the nine RWQCBs. Under Porter-Cologne, each RWQCB must prepare and periodically update water quality control basin plans. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution. California Water Code Section 13260 requires any person discharging waste, or proposing to discharge waste, in any region that could affect the waters of the state to file a report of discharge (an application for waste discharge requirements [WDRs]) with the applicable RWQCB. Construction activities that may discharge wastes into the waters of the state must meet the discharge control requirements of the Porter-Cologne Act.

LOCAL

South Sacramento Habitat Conservation Plan

The SSHCP is a regional effort that provides development and infrastructure projects with streamlined, predictable federal and state permitting processes while creating a Preserve System to protect habitat, open space, and agricultural lands. The SSHCP allows project proponents within the SSHCP Area to simplify and expedite the state and federal Endangered Species Act (ESAs) permitting process. In addition to streamlining the ESAs permitting processes, a separate but parallel multi-tiered permitting program has been developed to streamline Clean Water Act Section 404 and 401 permitting process and a Master Streambed Alteration Agreement will be prepared to address Section 1602 of the California Fish and Game Code. The SSHCP allows Sacramento County (the County), the City of Rancho Cordova, City of Galt, Sacramento County Water Agency, and the Southeast Connector Joint Powers Authority (collectively referred to as the Plan Permittees) to receive an Incidental Take Permit (ITP) for activities and projects they conduct. In addition, the three local Land Use Authority Permittees (the County, Galt, and Rancho Cordova) have the ability to extend incidental take coverage provided by the SSHCP ITPs to activities and projects implemented by Third-Party Project Proponents that are under the jurisdiction of that Land Use Authority Permittee. This will allow Third-Party Project Proponents to avoid the

extensive negotiation and processing currently required to obtain individual project permits under the CESA from the CDFW and project ESA compliance from the USFWS.

In most cases, an individual Covered Activity project or activity would trigger CEQA and require preparation of a CEQA document that analyzes the proposed project or activity. The final SSHCP EIS/EIR can be used to simplify and streamline preparation of individual project CEQA documents for future Covered Activity projects that they directly implement over the proposed 50-year term of the SSHCP. The SSHCP EIS/EIR provides regional-scale comprehensive analyses of environmental impacts of all planned urban development within the Planning Area over a 50-year period.

The three local Land Use Authority Permit Applicants (Sacramento County, Galt, and Rancho Cordova) would also have the ability to extend the species incidental take coverage provided by the SSHCP ITPs to the Covered Activities implemented by third-party project proponents under their jurisdiction. The SSHCP term "third-party project proponents" refers to individuals or organizations that implement a SSHCP Covered Activity under the jurisdiction of a Land Use Authority Permit Applicant (i.e., Sacramento County, Galt, or Rancho Cordova). An example would be a developer (the third-party project proponent) who proposes a development project that is consistent with the requirements of an SSHCP urban development Covered Activity, and the proposed project's approvals or entitlements are subject to the jurisdiction of Sacramento County (a Land-use Authority Permit Applicant). Third-party project proponent uses of the Final EIS/EIR are discussed in Section 1.6.5.

The SSHCP Area (317,655 acres) is located in the southern portion of Sacramento County. The SSHCP Area includes portions of unincorporated Sacramento County, Galt, and the southern half of Rancho Cordova. Parts of southern Sacramento County, including the community of Rancho Murieta, the sovereign lands of the Miwok Tribe, and a majority of the Delta are not included within the SSHCP Area. The SSHCP Area was defined using political and ecological factors and is the area in which all conservation actions will be implemented and where all incidental take will occur.

The SSHCP Conservation Strategy mitigates to the maximum extent practicable the impacts of Covered Activities, including all direct and indirect impacts on Covered Species and their habitats. The SSHCP Conservation Strategy provides for conservation of 28 Covered Species and 17 land cover types, avoids or minimizes impacts of Covered Activities, mitigates for the impacts of Covered Activities on the Covered Species and their habitats on the basis of species and habitat needs, provides a regional approach to the mitigation of impacts and the conservation of species and their habitats, protects wetlands and waters of the Plan Area, conserves natural communities in the Plan Area, and provides take authorization for the 28 Covered Species, with the exception that direct injury or mortality of white-tailed kite and greater sandhill crane is not covered by the ITP and the SSHCP plans for full avoidance and protection of all slender Orcutt grass and Sacramento Orcutt grass occurrences.

The SSHCP includes Avoidance and Minimization Measures (AMMs) as conditions on Covered Activities. Each condition contains several AMMs that are intended to eliminate or reduce direct or indirect effects to species that could result from implementation of a Covered Activity. In addition,

the SSHCP provides species-specific take and avoidance measures to avoid or minimize effects of Covered Activities on specific SSHCP Covered Species. Species-specific AMMs include species surveys, preconstruction surveys, and construction monitoring.

SSHCP Figure 2-2 identifies the area where the Project site is located as the Preserve Planning Unit 1 (PPU 1), which is an Urban Development Area planned for urbanization, and shows that a Linkage Preserve is planned for a portion of the Project site.

The Rancho Cordova City Council adopted the SSHCP in October 2018.

Rancho Cordova General Plan

The Rancho Cordova General Plan contains the following goals and policies that are relevant to biological resources:

NATURAL RESOURCES ELEMENT

GOAL NR.1: Protect and preserve diverse wildlife and plant habitats, including habitat for special status species.

Policy NR 1.1: Protect rare, threatened, and endangered species and their habitats in accordance with State and federal law.

Policy NR 1.2: Conserve Swainson's hawk habitat consistent with State policies and Department of Fish and Game guidelines.

Policy NR 1.3: Promote educational programs that inform the public about natural resources.

Policy NR 1.4: Discourage the planting of invasive species.

Policy NR 1.5: Ensure the protection of wildlife through the establishment of programs to control feral pet populations.

Policy NR 1.6: Participate in the development of a habitat conservation plan to address the unique biological resources in Rancho Cordova.

Policy NR 1.7: Prior to project approval, the City shall require a biological resources evaluation for private and public development projects in areas identified to contain or possibly contain listed plant and/or wildlife species based upon the City's biological resource mapping provided in the General Plan EIR or other technical materials.

Policy NR 1.8: The City shall encourage creation of habitat preserves that are immediately adjacent to each other in order to provide interconnected open space areas for animal movement.

Policy NR 1.9: The City shall require that impacts to riparian habitats be mitigated at a no net loss of existing function and value based on field survey and analysis of the riparian habitat to be impacted. No net loss may be accomplished by avoidance of the habitat, restoration of existing habitat, or creation of new habitat, or through some combination of the above.

Policy NR 1.10: The placement of new roadways within habitat preserves shall be discouraged, but is not prohibited. This Policy shall not apply to roadways shown in the Circulation Element or needed to meet goals or policies of the Circulation Element.

Policy NR 1.11: In such cases where a new roadway crosses a habitat preserve or separates two adjacent preserves, the roadway shall include design features, where feasible and appropriate, to allow for the movement of wildlife across or beneath the road without causing a hazard for vehicles, bicycles and pedestrians on the roadway.

GOAL NR.2: Preserve the City's rich and diverse natural wetlands.

Policy NR 2.1: Require mitigation that provides for "no net loss" of wetlands consistent with current State and federal policies.

Policy NR 2.2: Ensure that direct and indirect effects to wetland habitats are mitigated to the extent feasible by environmentally sensitive project siting and design or other measures.

Policy NR 2.3: Work with private and non-profit conservation organizations to ensure competitive pricing for mitigation bank credits by allowing government agencies, non-profit organizations, and private landowners to establish vernal pool preserves, designate mitigation areas, create and restore vernal pools, and sell credits to developers for off-site mitigation.

Policy NR 2.4: Educate the public on the importance and benefit of wetlands areas.

Policy NR 2.5: The City shall require that drainage improvements that discharge into areas of wetlands to be preserved are, to the maximum extent feasible, designed to mimic the undeveloped surface water flow conditions of the area in terms of seasonality, volume, and flow velocity.

GOAL NR.3: Preserve and maintain creek corridors and wetland preserves with useable buffer zones throughout the new development areas as feasible.

Policy NR.3.1: Coordinate with property owners and local interest groups, such as the Sacramento Urban Creeks Council, to restore, enhance, and preserve creeks in Rancho Cordova.

Policy NR.3.2: In general, the City will encourage the preservation of existing location, topography, and meandering alignment of natural creeks. The modification, re-creation and realignment of creek corridors shall recreate the character of the natural creek corridor to the extent feasible, appropriate and consistent with other City policies. Channelization and the use of concrete within creek corridors shall be discouraged, but is not prohibited.

Policy NR.3.3: Encourage the creation of secondary flood control channels where the existing channel supports extensive riparian vegetation.

Policy NR.3.4: Encourage projects that contain wetland preserves or creeks, or are located adjacent to wetland preserves or creeks, to be designed for visibility and, as appropriate, access.

GOAL NR.4: Encourage the planting and preservation of high-quality trees throughout the City.

Policy NR.4.1: Conserve native oak and landmark tree resources for their historic, economic, aesthetic, educational, and environmental value.

Policy NR.4.2: Improve overall landscaping quality and sustainability in all areas visible to the public.

Policy NR.4.3: Promote trees as economic and environmental resources for the use, education, and enjoyment of current and future generations.

Policy NR.4.4: Prior to the approval of any public or private development project in areas identified or assumed to contain trees, the City shall require that a determinate survey of trees species and size be performed. If any native oaks or other native trees six inches or more in diameter at breast height (dbh), multitrunk native oaks or native trees of 10 inches or greater dbh, or non-native trees of 18 inches or greater dbh that have been determined by a certified arborist to be in good health are found to occur, such trees shall be avoided if feasible. If such trees cannot be avoided, the project applicant shall do one of the following:

- All such trees shall be replaced at an inch-for-inch ratio. A replacement tree planting plan shall be prepared by a certified arborist or licensed landscape architect and shall be submitted to the City of Rancho Cordova for approval prior to removal of trees; or,
- The project applicant shall submit a mitigation plan that provides for complete mitigation of the removal of such trees in coordination with the City of Rancho Cordova. The mitigation plan shall be subject to the approval of the City.
- If the City of Ranch Cordova adopts a tree preservation ordinance at any time in the future, any future development activities shall be subject to that ordinance instead.

GOAL NR.5: Protect the quantity and quality of the City's water resources.

Policy NR.5.1: Promote water conservation within existing and future urban uses.

Policy NR.5.2: Encourage the use of treated wastewater to irrigate parks, golf courses, and landscaping.

Policy NR.5.3: Protect surface and ground water from major sources of pollution, including hazardous materials contamination and urban runoff.

Policy NR.5.4: Prevent contamination of the groundwater table and surface water, and remedy existing contamination to the extent practicable.

Policy NR.5.5: Minimize erosion to stream channels resulting from new development in urban areas consistent with State law.

Policy NR.5.6: Incorporate Storm Water, Urban Runoff, and Wetland Mosquito Management Guidelines and Best Management Practices into the design of water retention structures, drainage ditches, swales, and the construction of mitigated wetlands in order to reduce the potential for mosquito-borne disease transmission.

Policy NR.5.7: Continue to cooperate and participate with the County, other cities, and the Regional Water Quality Control Board regarding compliance with the joint National Pollutant Discharge Elimination System Permit (NPDES No. CAS082597) or any subsequent permit and support water quality improvement projects in order to maintain compliance with regional, state and federal water quality requirements.

Policy NR.5.8: The City shall require groundwater impact evaluations be conducted for the Grant Line West, Westborough, Aerojet, Glenborough, Mather and Jackson Planning Areas to determine whether urbanization of these areas would adversely impact groundwater remediation activities associated with Mather and Aerojet prior to the approval of large-scale development. Should an adverse impact be determined, a mitigation program shall be developed in consultation with applicable local, state, and federal agencies to ensure remediation activities are not impacted. This may include the provision of land areas for groundwater remediation facilities, installation/extension of necessary infrastructure, or other appropriate measures.

City of Rancho Cordova Municipal Code

Chapter 16.94, Aquatic Resources Protection, of the City's Municipal Code outlines the purpose, definitions, applicability, impact permit and delineation requirements, avoidance, minimization, and compensation standards, and other provisions pertaining to aquatic resources. All proposed projects within the City's plan area that permanently and/or temporarily impact an aquatic resource shall require an aquatic resources impact permit from the city. There are aquatic resources located on the Project site.

Chapter 19.12, Preservation and Protection of Private Trees, of the City's Municipal Code outlines the purpose, definitions, tree permit requirements, and other related provisions pertaining to tree preservation. Native oak trees grow naturally in Rancho Cordova. There are no trees on the Project site.

3.3.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Appendix G of the CEQA Guidelines contains a sample Initial Study checklist that includes a number of factual inquiries related to the subject of biological resources, as it does on a whole series of additional environmental topics. Notably, lead agencies are under no obligation to use these inquiries in fashioning thresholds of significance on the subject of air quality impacts, or indeed on

any subject addressed in the checklist. (*Save Cuyama Valley v. County of Santa Barbara* (2013) 213 Cal.App.4th 1059, 1068.) Rather, with few exceptions, "CEQA grants agencies discretion to develop their own thresholds of significance." (*Ibid*.) Even so, it is a common practice for lead agencies to take the language from the inquiries set forth in Appendix G and to use that language in fashioning thresholds. The City has done so here, though it has exercised its discretion to modify the language of the Appendix G threshold as described below.

Although CEQA generally gives agencies considerable discretion in fashioning significance thresholds, there are some thresholds that must, as a matter of law, be used by public agencies. Many of these relate to biological resources, and are found in CEQA Guidelines Section 15065 ("Mandatory Findings of Significance").

Finally, the City is aware that neither Appendix G nor Section 15065 sets forth language directly addressing potential effects on birds of prey or nesting birds due to violation of laws (described earlier) intended to protect them. The City has, therefore, exercised its discretion to formulate a threshold to address this particular category of impact.

In light of the foregoing, for purposes of this EIR, a significant impact would occur if implementation of the Project would:

- Substantially reduce the habitat of a fish or wildlife species;
- Cause a fish or wildlife population to drop below self-sustaining levels;
- Threaten to eliminate a plant or animal community;
- Substantially reduce the number or restrict the range of an endangered, rare or threatened species;
- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan;
- Result in the take or destruction of any nesting birds or birds of prey or the nest or eggs of such birds.

METHODOLOGY

Aquatic Resources Delineation Report

As part of the *Aquatic Resources Delineation Report*, Foothill Associates completed a wetland delineation for the Project site. The Delineation Report is included as Appendix C.1 of this Draft EIR. The delineation utilized the USACE's 1987 three-parameter (vegetation, hydrology, and soils) methodology to delineate aquatic resources. The USACE's Arid West Regional Supplement (Supplement) (USACE 2008) was also used in conjunction with the USACE Manual for applications in the Arid West Region. Where differences in the two documents occur, the Supplement takes precedence over the USACE Manual. The three-parameter methodology requires the collection of data on soils, vegetation, and hydrology at several locations to establish the jurisdictional boundary of wetlands. Additional methods to identify and delineate other waters of the U.S. (e.g., streams, drainages, lakes) were used as applicable. The method typically used for delineation of non-wetland waters of the U.S. is the delineation of the Ordinary High Water Mark (OHWM). The OHWM was identified based on soils, vegetation, slope, and other indicators such as debris and high water marks.

As part of the delineation efforts, a review of historic and recent aerial photographs, topographic maps, and soils survey data was conducted by Foothill Associates before delineating the Project site in December 2003, and January through April 2004. Revisions were made in the field with Justin Cutler and/or Will Ness of the USACE in April and June in 2005 and a reverification was conducted in October 2014. Biologists visually inspected the entire site and collected representative data at points within potential wetland areas and corresponding uplands. The on-site soils were examined for hydric indicators. Observations were made and recorded for both primary and secondary wetland hydrology indicators, if present. Boundaries of wetlands and other waters of the U.S. within the site were surveyed and mapped with a Trimble GeoXT Global Positioning System (GPS) hand-held unit.

Biological Resources Assessment

Foothill Associates also prepared a *Biological Resources Assessment* for the Project site. The Assessment is included as Appendix C.2 of this Draft EIR. Prior to conducting a survey of the Project site, existing information, including *The Ranch at Sunridge Project: Section 7 Biological Assessment* (Foothill Associates 2012), *Jaeger ±530-Acre Study Area: Wetland Delineation Report* (Foothill Associates 2005), *Special Status Plant Report ±530-Acre Peery Arrillaga Sunrise Douglas Site* (North Fork Associates 2002), and rare plant survey letter reports prepared by Foothill Associates in 2009 and 2017 for the Project site were reviewed by Foothill Associates. The results of the special-status species records search and five-mile radius CNNDB query are summarized in Appendix B of Appendix C.2. As part of the *Biological Resources Assessment* efforts, the most recent field surveys of the Project site were conducted on June 12 and 13, 2017. The Project site was systematically surveyed on foot with binoculars to ensure total search coverage, with special attention given to identifying those portions of the Project site with the potential for supporting special-status species and sensitive habitats. During the field surveys, biologists recorded plant and animal species observed (Appendix C of Appendix C.2), as well as characterized biological communities

occurring within the Project site. As noted above, wetland features were previously delineated within the Project site and verified by the USACE in 2014. Wetland polygons along the eastern boundary of Rancho Cordova Parkway were remapped in 2017 to address impacts that may have occurred during expansion of Rancho Cordova Parkway.

Following the Project site survey, the potential for each species identified in the records search to occur in the Project site was determined based within the Project site surveys, soils, and species-specific information, as shown in Appendix B of Appendix C.2.

Special-Status Plant Survey for The Ranch

Focused botanical surveys for special-status plant species were also performed by two Foothill Associates biologists on June 12 and 13, 2017. The surveys were completed within the identified blooming period of the potentially occurring special-status plant species listed in the *Special-Status Plant Survey for The Ranch.* The Plant Survey is included as Appendix C.3 of this Draft EIR. The survey was conducted in accordance with and subject to guidelines provided by the CDFW and the CNPS. The purpose of the survey was to determine whether three special-status plants, Sacramento Orcutt grass (*Orcuttia viscida*), slender Orcutt grass (*Orcuttia tenuis*), and Boggs lake hedge-hyssop (*Gratiola heterosepala*), occur within the Project site. Transects were systematically walked throughout the whole of the Project site, with special attention paid to areas that contained suitable habitat for the special-status plant species. In this case, five-foot transects were walked throughout each vernal pool on the Project site and all riverine wetland features were surveyed.

The surveys were conducted by two biologists with the following qualifications: experience with conducting floristic surveys; intimate knowledge of plant taxonomy and plant community ecology and classification; familiarity with the plants of the area, including special-status and locally significant plants; familiarity with the appropriate State and federal statutes related to plants and plant collecting; and experience with analyzing impacts of Project activities on native plants and plant communities.

Additionally, a literature review and database search were conducted to gather information regarding sensitive plants, animals, and habitats. The purpose of the literature and database review is to identify species known to occur within the region based on historic range, observations, and habitat requirements.

South Sacramento Habitat Conservation Plan Final EIR/EIS

Section 15152 of the State CEQA Guidelines allows the Lead Agency to "tier" the environmental analysis for separate but related projects. Per Section 15152(b) of the State CEQA Guidelines, tiering "can eliminate repetitive discussions of the same issues and focus the later EIR or negative declaration on the actual issues ripe for decision at each level of environmental review. Tiering is appropriate when the sequence of analysis is from an EIR prepared for a general plan, policy, or program to an EIR or negative declaration for another plan, policy, or program of lesser scope, or to a site-specific EIR or negative declaration." Section 15152(d) of the State CEQA Guidelines requires that tiering "shall be limited to situations where the project is consistent with the general

plan and zoning of the city or county in which the project is located, except that a project requiring a rezone to achieve or maintain conformity with a general plan may be subject to tiering." CEQA Guidelines Section 15152(d) provides the following direction regarding limiting analysis of a later project, where an EIR has already been prepared and certified for a program, plan, policy, or ordinance consistent with the requirements of Section 15152:

> *Where an EIR has been prepared and certified for a program, plan, policy, or ordinance consistent with the requirements of this section, any lead agency for a later project pursuant to or consistent with the program, plan, policy, or ordinance should limit the EIR or negative declaration on the later project to effects which:*
>
> *(1) Were not examined as significant effects on the environment in the prior EIR; or*
>
> *(2) Are susceptible to substantial reduction or avoidance by the choice of specific revisions in the project, by the imposition of conditions, or other means.*

The USFWS and County of Sacramento prepared a EIS/EIR (SCH #2008062030) to evaluate the environmental impacts of implementing the SSHCP, which was described previously in this section. The analysis provided in this section tiers from the SSHCP EIS/EIR to focus on examining project-specific impacts.

The City of Rancho Cordova is using the analyses presented in the final SSHCP EIS/EIR to simplify and streamline preparation of future CEQA documents for individual Covered Activity projects, especially the comprehensive analyses of impacts to native plant and animal species, natural communities, aquatic resources, water quality, and hydrology. Project-level CEQA and NEPA documents can reference and use the final SSHCP EIS/EIR's regional-scale and 50-year comprehensive and programmatic analysis of future Covered Activity impacts to native plant and animal species, natural communities, aquatic resources, water quality, hydrology, and other environmental resources natural resources, as well as the EIS/EIR's cumulative analysis of impacts to wetlands and other waters in the region.

In determining potential environmental impacts to biological resources as a result of the Project, the impact analysis below analyzes the Projects consistency and implementation of the SSHCP and also identifies any potential impacts that were not examined in the SSHCP EIS/EIR. Impacts associated with biological resources identified in the final SSHCP EIS/EIR, which are anticipated to occur with the urbanization of the SSHCP area and establishment of planned preserves in the SSHCP area as described in the SSHCP, that are applicable to the Project's habitat types and potential species are identified in Table 3.3-3 below.

TABLE 3.3-3: SSHCP EIS/EIR IMPACTS OF SSHCP PROPOSED ACTION/PROPOSED PROJECT

IMPACT	*CEQA/NEPA SIGNIFICANCE*	*MITIGATION MEASURES*
NATURAL LAND COVER HABITATS, AND ASSOCIATED PLANT AND ANIMAL COMMUNITIES		
DIRECT AND INDIRECT EFFECTS – VERNAL POOL ECOSYSTEM		
As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: • directly and indirectly impact 690 fewer total acres of the Planning Area's total vernal pool ecosystem and the associated vernal pool plant and animal communities; • directly and indirectly impact 1,283 fewer acres of the Mather Core Area's vernal pool ecosystem and the associated vernal pool plant and animal communities; • require Covered Activities to implement better and more consistently implemented AMMs to avoid and minimize indirect effects of development projects and activities on the vernal pool ecosystem; • preserve approximately 7,340 more acres of Vernal Pool Ecosystem in the Planning Area; • result in interconnected and more contiguous preserves of vernal pool ecosystem within the Planning Area; and • preserve 934 more acres of the Mather Core Area's vernal pool ecosystem and the associated vernal pool plant and animal communities.	Significant Beneficial Effect	None required
CUMULATIVE EFFECTS – VERNAL POOL ECOSYSTEM		
Overall, the Proposed Action/Proposed Project Alternative would make a slightly smaller contribution to Study Area cumulative effects on the vernal pool ecosystem, when compared to the No Action/No Project Alternative. However, at the scale of Vernal Pool Ecosystem impacts throughout the Study Area, the 690-acre difference in impacts under the Proposed Action/Proposed Project Alternative compared to impacts under the No Action/No Project Alternative is not discernibly different.	No Cumulative Effect	None required

IMPACT	*CEQA/NEPA SIGNIFICANCE*	*MITIGATION MEASURES*
DIRECT AND INDIRECT EFFECTS – SEASONAL WETLANDS, FRESHWATER MARSH, STREAMS/CREEKS, OPEN WATER		
As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: • directly impact 79 fewer acres of Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water land covers and associated plant and animal communities; • require Covered Activity activities and project to implement better and more consistently implemented AMMs to avoid and minimize indirect effects to Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, Open Water natural communities, such as larger setbacks between new development and streams and creeks; • preserve 480 more acres of Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water; • re-establish or establish 213 more acres of Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water land covers within the Planning Area; and • result in more interconnected and contiguous preserves of Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water land covers within the Planning Area.	Minor Beneficial Effect	None required
CUMULATIVE EFFECTS – SEASONAL WETLANDS, FRESHWATER MARSH, STREAMS/CREEKS, OPEN WATER		
Overall, the Proposed Action/Proposed Project Alternative would make a slightly smaller incremental contribution the cumulative loss of Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water in the Study Area, when compared to the No Action/No Project Alternative. However, at the scale of impacts to these aquatic resources throughout the Study Area, the 79-acre difference in direct impacts, the 480-acre difference in preservation, and the 213-acre difference in re-establishment of Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water land covers under the Proposed Action/Proposed Project Alternative when compared to impacts under the No Action/No Project Alternative is not discernibly different.	No Cumulative Effect	None required

IMPACT	*CEQA/NEPA SIGNIFICANCE*	*MITIGATION MEASURES*
DIRECT AND INDIRECT EFFECTS – VALLEY GRASSLAND		
As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: • directly impact(remove) 1,415 fewer acres of Valley Grassland land cover and the associated plant and animal communities; • require Covered Activities to implement better and more consistently implemented AMMs to avoid and minimize indirect effects to Valley Grasslands; • preserve 10,208 acres more Valley Grassland within a large SSHCP Preserve System; and • result in more interconnected and contiguous preserves of Valley Grassland within the Planning Area, which would reduce habitat fragmentation effects on the Valley Grassland plant and animal community.	Significant Beneficial Effect	None required
CUMULATIVE EFFECTS – VALLEY GRASSLAND		
The incremental impacts of the Proposed Action/Proposed Project Alternative would make a smaller contribution to the cumulative loss of Valley Grassland in the Study Area, when compared to the incremental impact of the No Action/No Project Alternative.	Minor Beneficial Cumulative Effect	None required.
DIRECT AND INDIRECT EFFECTS – WILDLIFE MOVEMENT CORRIDORS		
As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: • provide a coordinated, interconnected Preserve System designed to provide connectivity between existing preserves and new preserves established under the Proposed Action/Proposed Project; • require new development project to incorporate AMMs that would avoid or minimize effects on riparian corridors used for wildlife movement; • require new development projects inside the UDA and related roadway projects outside the UDA to incorporate wildlife crossing structures at specific locations; and • not result in displaced development outside the UDA, to locations that have a greater potential to affect designated wildlife movement corridors.	Minor Beneficial Effect	None required

IMPACT	*CEQA/NEPA SIGNIFICANCE*	*MITIGATION MEASURES*
CUMULATIVE EFFECTS –– WILDLIFE MOVEMENT CORRIDORS		
The incremental impacts of the Proposed Action/Proposed Project Alternative would make a smaller contribution the cumulative loss of wildlife movement and dispersal in the Study Area, when compared to the incremental impact of the No Action/No Project Alternative. However, at the scale of wildlife movement throughout the Study Area, the difference in movement under the Proposed Action/Proposed Project Alternative when compared to impacts under the No Action/No Project Alternative is not discernibly different.	No Cumulative Effect	None required
SPECIAL-STATUS SPECIES INCLUDING HCP COVERED SPECIES		
DIRECT, INDIRECT, AND CUMULATIVE EFFECTS		
SPECIES COMMON NAME	*COVERED SPECIES?*	*CEQA/NEPA SIGNIFICANCE*	*MITIGATION MEASURES*
Vernal Pool Tadpole Shrimp	Y	Significant Beneficial Effect No Cumulative Effect	None required.
Vernal Pool Fairy Shrimp	Y	Significant Beneficial Effect No Cumulative Effect	None required.
Mid-Valley Fairy Shrimp	Y	Significant Beneficial Effect No Cumulative Effect	None required.
Ricksecker's Water Scavenger Beetle	Y	Significant Beneficial Effect No Cumulative Effect	None required.
Dwarf Downingia	Y	Significant Beneficial Effect No Cumulative Effect	None required.
Ahart's Dwarf Rush	Y	Significant Beneficial Effect No Cumulative Effect	None required.
Pincushion Navarretia	Y	Significant Beneficial Effect No Cumulative Effect	None required.
Slender Orcutt Grass	Y	Significant Beneficial Effect No Cumulative Effect	None required.
Sacramento Orcutt Grass	Y	Significant Beneficial Effect No Cumulative Effect	None required.
Boggs Lake Hedge-Hyssop	Y	Significant Beneficial Effect No Cumulative Effect	None required.
Legenere	Y	Significant Beneficial Effect No Cumulative Effect	None required.
Valley Elderberry Longhorn Beetle	Y	Minor Beneficial Effect No Cumulative Effect	None required.

IMPACT		*CEQA/NEPA SIGNIFICANCE*	*MITIGATION MEASURES*
California Tiger Salamander (Central Valley population)	Y	Significant Beneficial Effect Minor Beneficial Cumulative Effect	None required.
Western Spadefoot	Y	Significant Beneficial Effect Minor Beneficial Cumulative Effect	None required.
Giant Garter Snake	Y	Minor Beneficial Effect Minor Beneficial Cumulative Effect	None required.
Western Pond Turtle	Y	Significant Beneficial Effect Minor Beneficial Cumulative Effect	None required.
Cooper's Hawk	Y	Minor Beneficial Effect No Cumulative Effect	None required.
Tricolored Blackbird	Y	Significant Beneficial Effect Significant Beneficial Cumulative Effect	None required.
Western Burrowing Owl	Y	Significant Beneficial Effect Minor Beneficial Cumulative Effect	None required.
Ferruginous Hawk	Y	Significant Beneficial Effect Minor Beneficial Cumulative Effect	None required.
Swainson's Hawk	Y	Significant Beneficial Effect Minor Beneficial Cumulative Effect	None required.
Northern Harrier	Y	Significant Beneficial Effect Minor Beneficial Cumulative Effect	None required.
White-Tailed Kite	Y	Significant Beneficial Effect Minor Beneficial Cumulative Effect	None required.
Greater Sandhill Crane	Y	Minor Beneficial Effect No Cumulative Effect	None required
Lesser Sandhill Crane	N	Minor Beneficial Effect No Cumulative Effect	None required
Loggerhead Shrike	Y	Significant Beneficial Effect Minor Beneficial Cumulative Effect	None required.

IMPACT		*CEQA/NEPA SIGNIFICANCE*	*MITIGATION MEASURES*
Grasshopper Sparrow	N	Significant Beneficial Effect Minor Beneficial Cumulative Effect	None required.
Song Sparrow (Modesto population)	N	Minor Beneficial Effect No Cumulative Effect	None required
Bank Swallow	N	Less than Significant Adverse Effect No Cumulative Effect	None required
Western Red Bat	Y	Significant Beneficial Effect Minor Beneficial Cumulative Effect	None required.
American Badger	Y	Significant Beneficial Effect Minor Beneficial Cumulative Effect	None required.
Sanford's Arrowhead	Y	Significant Beneficial Effect Minor Beneficial Cumulative Effect	None required.
Watershield	N	Less than Significant Adverse Effect No Cumulative Effect	None required.
Bristly sedge	N	Less than Significant Adverse Effect No Cumulative Effect	None required.
Fleshy owl's clover	N	Less than Significant Adverse Effect No Cumulative Effect	None required.
Brandegee's clarkia	N	Less than Significant Adverse Effect No Cumulative Effect	None required.
Bolander's water-hemlock	N	Less than Significant Adverse Effect No Cumulative Effect	None required.
Peruvian dodder	N	Less than Significant Adverse Effect No Cumulative Effect	None required.
Tuolumne button-celery	N	Less than Significant Adverse Effect No Cumulative Effect	None required.
Stinkbells	N	Less than Significant Adverse Effect No Cumulative Effect	None required.
Woolly rose-mallow	N	Less than Significant Adverse Effect No Cumulative Effect	None required.
Northern California black walnut	N	Less than Significant Adverse Effect No Cumulative Effect	None required.

IMPACT		*CEQA/NEPA SIGNIFICANCE*	*MITIGATION MEASURES*
Delta tule pea	N	Less than Significant Adverse Effect No Cumulative Effect	None required.
Heckard's pepper-grass	N	Less than Significant Adverse Effect No Cumulative Effect	None required.
Mason's lilaeopsis	N	Less than Significant Adverse Effect No Cumulative Effect	None required.
Delta mudwort	N	Less than Significant Adverse Effect No Cumulative Effect	None required.
Marsh skullcap	N	Less than Significant Adverse Effect No Cumulative Effect	None required.
Side-flowering skullcap	N	Less than Significant Adverse Effect No Cumulative Effect	None required.
Suisun Marsh aster	N	Less than Significant Adverse Effect No Cumulative Effect	None required.
Saline clover	N	Less than Significant Adverse Effect No Cumulative Effect	None required.
AQUATIC RESOURCES			
DIRECT AND INDIRECT EFFECTS			
As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: • result in the loss of 855 acres of wetland waters, which is 34 more acres than the 821-acre loss anticipated under the No Action/No Project Alternative; • result in the loss of 294 other waters, which is 65 acres less than the 359-acre loss anticipated under the No Action/No Project Alternative; • result in the loss of 464 acres of Riparian land cover types, which is 37 acres more than the 427 acres expected under the No Action/No Project Alternative; • in total, result in the loss of 1,613 acres of aquatic resources, which is 5 acres greater loss of aquatic resources compared to the 1,607-acre loss of the No Action/No Project Alternative; • preserve 2,738 acres of aquatic resources, which is greater by 998 acres compared 1,740 acres under the No Action/No Project Alternative;		Minor Beneficial Effect	None required

IMPACT	*CEQA/NEPA SIGNIFICANCE*	*MITIGATION MEASURES*
• require AMMs such as increased Stream Setbacks that would be more protective to aquatic resources relative to the No Action/No project Alternative; • implement the SSHCP and ARP resulting in a greater area of aquatic resources protections and management than the No Action/No Project Alternative; and • improve aquatic resource abundance, diversity, and condition within the Planning Area over that expected under the No Action/No Project Alternative.		
CUMULATIVE EFFECTS		
Implementation of the SSHCP Conservation Strategy, including the SSHCP AMMs, the SSHCP ARP, and the interconnected SSHCP Preserve System is expected to result in more consistent and frequent conservation of aquatic resources compared to the No Action/No Project Alternative.	Minor Beneficial Cumulative Effect	None required

SOURCE: FINAL SSHCP EIS/EIR, 2018

Peer Review

A peer review of the biological work performed by Foothill Associates was performed by De Novo Planning Group. The peer review included reviewing the Foothill Associates biological studies, performing a database search to gather information regarding sensitive plants, animals, and habitats, and performing a reconnaissance level survey of the Project site. The database search includes a 9-quad region (USGS quadrangles: Citrus Heights, Folsom, Clarksville, Carmichael, Buffalo Creek, Folsom Southeast, Elk Grove, Sloughhouse, and Carbondale). The review also included a review of the SSHCP modeling habitats for the Project site. The intent of the peer review was to verify the accuracy of the information provided in the reports, to identify information gaps, and to ultimately prepare the biological resources chapter for the Draft EIR.

IMPACTS AND MITIGATION

Impact 3.3-1: The Project has the potential to, directly or indirectly, have a substantial adverse effect through habitat modifications or reductions, cause populations to drop below self-sustaining levels, substantially eliminate a community, or substantially reduce the number of, or restrict the range of, an endangered, rare or threatened species, including those considered candidate, sensitive, or special-status, in local or regional plans, policies, regulations, or by the CDFW or USFWS - Invertebrates (Less than Significant with Mitigation)

The SSHCP has five invertebrates that are Covered Species. These include: valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), Ricksecker's Water Scavenger Beetle, Mid-Valley Fairy Shrimp (*Branchinecta mesovallensis*), Vernal Pool Fairy Shrimp, and Vernal Pool Tadpole Shrimp. Of these five species, the SSHCP modeled habitat maps (SSHCP Figures 3-11 through 3-15) show that modeled habitat is present within the Project footprint for four of the five Covered Species, including: Ricksecker's water scavenger beetle, Mid-Valley fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp. There is no SSHCP modeled habitat for valley elderberry longhorn beetle within the Project site.

Valley Elderberry Longhorn Beetle: The valley elderberry longhorn beetle is a federally threatened insect that is dependent upon the elderberry plant (*Sambucus* sp.) as a primary host species. Elderberry shrubs are a common component of riparian areas throughout the Sacramento Valley region. There are five CNDDB occurrences within five miles of the Project site.

The SSHCP valley elderberry longhorn beetle modeled habitat map (SSHCP Figure 3-13) shows that modeled habitat for valley elderberry longhorn beetle is not present within the Project footprint. The Project site does not provide habitat for this species and surveys did not indicate the presence of valley elderberry longhorn beetle on the site.

Ricksecker's Water Scavenger Beetle: Ricksecker's Water Scavenger Beetle is a SSHCP Covered Species. This vernal pool insect is entirely dependent upon the aquatic environment provided by vernal pools. The Ricksecker's water scavenger beetle depends upon the presence of water in the winter and early spring and the absence of water during the summer. These specific vernal pool wetland characteristics are dependent upon the surrounding uplands. Vernal pools supporting Ricksecker's water scavenger beetle are typically in Central Valley California floristic provinces below 300 meters in elevation. Collection records suggest that the Ricksecker's water scavenger beetle is not sensitive to the size of vernal pools, and uses both vernal pools and swales, as well as constructed vernal pools. Optimal Ricksecker's water scavenger beetle habitat tends to be neutral to slightly alkaline, clear vernal pools, low in dissolved salts, dominated with vernal pool plants, sustaining a complex vernal pool crustacean community.

The SSHCP Ricksecker's water scavenger beetle modeled habitat map (SSHCP Figure 3-12) shows that modeled habitat for Ricksecker's water scavenger beetle is present within the Project

footprint. The field surveys revealed that the necessary habitat for this species is present within the vernal pools located on the Project site, and this species has a high potential to occur on-site.

Mid-Valley Fairy Shrimp: Mid-Valley Fairy Shrimp is a SSHCP Covered Species. This small vernal pool crustacean is entirely dependent upon the aquatic environment provided by vernal pool ecosystems. Mid-valley fairy shrimp depends upon the presence of water in the winter and early spring and the absence of water during the summer. These specific vernal pool wetland characteristics are dependent upon the surrounding uplands. Mid-valley fairy shrimp are typically in Central Valley California floristic provinces below 300 meters in elevation. Typical habitat for mid-valley fairy shrimp in California includes vernal pools and seasonally ponded areas within vernal swales. Optimal mid-valley fairy shrimp habitat tends to be small vernal pools, with an abbreviated hydroperiod, neutral to slightly alkaline, clear vernal pools, low in dissolved salts, dominated with vernal pool plants, and sustains a complex vernal pool crustacean community.

The SSHCP Mid-valley fairy shrimp modeled habitat map (SSHCP Figure 3-11) shows that modeled habitat for Mid-valley fairy shrimp is present within the Project footprint. The field surveys revealed that the necessary habitat for this species is present within the vernal pools located on the Project site, and this species has a high potential to occur on-site.

Vernal Pool Fairy Shrimp: Vernal Pool Fairy Shrimp is a SSHCP Covered Species and is listed as federally threatened. This small vernal pool crustacean is entirely dependent upon the aquatic environment provided by vernal pool wetland ecosystems. Vernal pool fairy shrimp depends upon the presence of water in the winter and early spring and the absence of water during the summer. Habitats supporting the vernal pool fairy shrimp are typically in Central Valley California floristic provinces below 300 meters elevation. Typical habitat for vernal pool fairy shrimp in California includes vernal pools, seasonally ponded areas within vernal swales, rock outcrop ephemeral pools, playas, and alkali. Vernal pool fairy shrimp have also been found in water pooled in sandstone outcrops and in alkaline vernal pools. Optimal habitat for vernal pool fairy shrimp tends to be neutral to slightly alkaline, clear vernal pools, low in dissolved salts, dominated with vernal pool plants, and sustains a complex vernal pool crustacean community. Fairy shrimp occurs only in cool-water pools. Individuals hatch from cysts during cold-weather winter storms; they require water temperatures of 50°F or lower to hatch. The time to maturity and reproduction is temperature-dependent, varying between 18 days and 147 days, with a mean of 40 days. Pool volume is also important in determining potential shrimp habitat because deeper pools with a large surface area can more easily maintain their dissolved oxygen levels. Similarly, deeper pools will pond long enough to allow the shrimp to complete their life cycle.

The SSHCP vernal pool fairy shrimp modeled habitat map (SSHCP Figure 3-13) shows that modeled habitat for vernal pool fairy shrimp is present within the Project footprint. The field surveys revealed that the necessary habitat for this species is present within the vernal pools located on the Project site, and this species has a high potential to occur on-site.

Vernal Pool Tadpole Shrimp: Vernal Pool Tadpole Shrimp is a SSHCP Covered Species and is listed as federally endangered. This small vernal pool crustacean is entirely dependent upon the aquatic environment provided by vernal pool wetland ecosystems. Vernal pool tadpole shrimp depends

upon the presence of water in the winter and early spring and the absence of water during the summer. These specific vernal pool wetland characteristics are dependent upon the surrounding uplands. Habitats supporting the Vernal pool tadpole shrimp are typically in Central Valley California floristic provinces below 300 meters in elevation. Typical habitat for vernal pool tadpole shrimp in California includes vernal pools, seasonally ponded areas within vernal swales, rock outcrop ephemeral pools, playas, and alkali flats. Vernal pool tadpole shrimp have also been found in alkaline vernal pools. Optimal habitat for vernal pool tadpole shrimp tends to be neutral to slightly alkaline, clear vernal pools, low in dissolved salts, dominated with vernal pool plants, and sustains a complex vernal pool crustacean community. Pool volume is also important in determining potential shrimp habitat because deeper pools with a large surface area can more easily maintain their dissolved oxygen levels. Similarly, deeper pools will pond long enough to allow the shrimp to complete their life cycle. Occupied pools may have aquatic vegetation that may provide shelter from predators and range in size from 54 square feet to 84 acres. Although the tadpole shrimp is found on a variety of geologic formations and soil types, more than 50% of tadpole shrimp occurrences have been found on High Terrace, also known as old terrace landforms and Laguna Formation Redding and Corning soils. In the SSHCP Plan Area, vernal pool tadpole shrimp has been observed in many of the vernal streams.

The SSHCP vernal pool tadpole shrimp modeled habitat map (SSHCP Figure 3-14) shows that modeled habitat for vernal pool tadpole shrimp is present within the Project footprint. The field surveys revealed that the necessary habitat for this species is present within the vernal pools located on the Project site, and this species has a high potential to occur on-site.

Conclusion: Protocol-level surveys were not conducted in the preparation of the Biological Resources Assessment for this Project. In accordance with USFWS policy, given the presence of potential habitat and the absence of protocol surveys, these species are presumed present on the Project site.

The Project will result in the direct loss of 4.75 acres of vernal pool habitat, and the death of an unknown number of Ricksecker's water scavenger beetle, Mid-valley fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp through the direct filling of vernal pools and vernal swales within the Project site.

The Project would result in indirect effects to vernal pool habitat, and the death of an unknown number of Ricksecker's water scavenger beetle, Mid-valley fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp, in the form of death, injury, and harm, found in vernal pools that are supported by associated upland areas and swales, and all habitat otherwise damaged by loss of watershed, human intrusion, introduced species, and pollution that will be caused by the Project. The Project would result in indirect effects to 4.75 acres of federally-listed crustacean habitat. This is a **potentially significant** impact.

The Project proponent intends to obtain coverage for their activities under the City's ITP. As required by the federal ESA (Section 10(a)(2)(A)(ii)) and Fish and Game Code Section 2081, the SSHCP includes measures to avoid and minimize take of Covered Species. All relevant SSHCP AMMs will be required for the Project. Mitigation Measure 3.3-1 requires that the Project

proponent submit a SSHCP permit application package to the City as a request that the incidental take coverage provided by the City's SSHCP ITP be extended to the proposed activities. The City must review the SSHCP permit application for consistency with all of the SSHCP requirements and provide the South Sacramento Conservation Agency ("Implementing Entity) with a copy of the SSHCP requirements for tracking purposes. The Project proponent shall be responsible for paying all SSHCP development fees associated with obtaining coverage from the City. A portion of those fees are then used to purchase habitat land as compensatory mitigation for the loss of habitat. Any proposal to provide land in fee title, or provide a conservation easement in lieu of paying all or part of the required SSHCP development fees, shall include a consistency analysis in the application that sufficiently shows that the proposal is consistent with the SSHCP Conservation Strategy. Because the Project includes a 199.5-acre preserve, they will be required to include a consistency analysis in their application in order to receive credit for the preserve. Mitigation Measure 3.3-1 would require the Project proponent to fulfill all SSHCP requirements to ensure consistency with the SSHCP Conservation Strategy and receive coverage under the SSHCP, which has been developed to ensure preservation of species, natural communities, and aquatic resources in the SSHCP area, while providing for an environmental permitting process for Covered Activities that impact listed species, listed species habitats, or aquatic resources.

Mitigation Measure 3.3-2 requires that all applicable AMMs identified in the SSHCP be implemented to avoid direct and indirect effects to invertebrates. As required, a post-construction compliance report would be submitted to the SSHCP Implementing Entity within 30 calendar days of completion of construction activities or within 30 calendar days of any break in construction activity that lasts more than 30 days. The report would detail the construction start and completion dates, any information about meeting or failing to meet species take AMMs, effectiveness of each AMM that was applied at the Project site, and any known Project effects to Covered Species. The SSHCP AMMs would reduce indirect impacts on vernal pool invertebrate and other species. For example, AMM EDGE-3 establishes a 50-foot setback from the edge of established preserves to minimize indirect effects. AMM EDGE-4 requires roads, sidewalks, and other impermeable surfaces adjacent to planned preserves to slope away from preserves and preserve setbacks. AMM ROAD-1 requires road projects to be located in the least environmentally sensitive area to avoid impacts on covered species. AMM RE-ESTABLISHMENT/ESTABLISHMENT-1 requires that vernal pool wetlands be established or re-established. The maximum anticipated loss of species modeled habitat for vernal pool tadpole shrimp and vernal pool fairy shrimp modeled habitat due to direct impacts of the SSHCP would be approximately 17,117 acres (Table 9-23 of the SSHCP). Indirect effects on vernal pool tadpole shrimp and vernal pool fairy shrimp modeled aquatic habitat are anticipated to result in additional approximately 142 acres of impacts as a result of the SSHCP. The total impact, including direct and indirect impacts, of the Proposed Action/Proposed Project Alternative of the SSHCP on vernal pool tadpole shrimp and vernal pool fairy shrimp modeled habitat is expected to be approximately 17,259 acres. The total SSHCP impact area of 17,233 acres for Ricksecker's water scavenger beetle modeled habitat under the Proposed Action/Proposed Project of the SSHCP is approximately 674 acres less than the estimated 17,907 acres of total loss under the No Action/No Project Alternative of the SSHCP (Table 9-4 of the SSHCP). The Proposed Action/Proposed Project Alternative of the SSHCP is not

expected to remove any of the eight occurrences of Ricksecker's water scavenger beetle in the SSHCP Planning Area; no occurrences would be removed under the No Action/No Project Alternative of the SSHCP.

Additional AMMs are specifically presented later in this document for specific species. It is noted, however, that before construction begins, the SSHCP requires that the Project proponent demonstrate to the City that all necessary AMMs will be fulfilled. This is accomplished by having pre-construction AMMs in place prior to construction and by having a plan that shows how all applicable post-construction AMMs will be addressed. During construction, it is the responsibility of the City to ensure that the AMMs are being implemented. The City can compel the Project proponent to stop working if a project is not in compliance with all SSHCP AMMs. Upon construction completion, the City will monitor and confirm that post-construction conditions are acceptable and consistent with the requirements of the SSHCP permits (e.g., revegetation, soil treatments). Once the constructed Project has received final clearance from the City, it is the responsibility of the City to monitor continued operation of installed AMMs (e.g., swales, retention basins) and to monitor compliance with AMMs required for future operations and maintenance of the Covered Activity. The Implementing Entity (i.e., the South Sacramento Conservation Agency) may also assist with and in some instances may assume responsibility for monitoring continued operation of installed AMMs when those AMMs are part of the Preserve System, Preserve Setbacks, or Stream Setbacks.

The below mitigation measures would result in compensatory mitigation for the loss of habitat, and would avoid or minimize impacts to protected species to the extent feasible. Implementation of the Project, with the below mitigation measures and consistency with the SSHCP, would reduce the potential for impacts to special-status species to a ***less than significant*** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.3-1: *Prior to any ground disturbing activities, the Project proponent shall submit a South Sacramento Habitat Conservation Plan (SSHCP) permit application package to the City of Rancho Cordova ("Land Use Authority Permittee") as a request that the incidental take coverage provided by City's SSHCP Incidental Take Permit (ITP) be extended to the proposed activities. The City of Rancho Cordova shall review the SSHCP permit application for consistency with all of the SSHCP requirements and provide the South Sacramento Conservation Agency ("Implementing Entity) with a copy of the SSHCP requirements for tracking purposes. The Project proponent shall be responsible for paying all SSHCP development fees associated with obtaining coverage from the City of Rancho Cordova. Any proposal to provide land in fee title or provide a conservation easement in lieu of paying all or part of the required SSHCP development fees, shall include a consistency analysis in the application that sufficiently shows that the proposal is consistent with the SSHCP Conservation Strategy.*

Mitigation Measure 3.3-2: *The Project proponent shall implement the following SSHCP Avoidance and Minimization Measures (AMMs) to the satisfaction of the City to avoid direct and indirect effects of Covered Activities on Covered Species:*

- *AMM SPECIES-1 (Litter Removal Program): A litter control program shall be instituted for the entire Project site. All workers shall ensure that their food scraps, paper wrappers, food containers, cans, bottles, and other trash are deposited in covered or closed trash containers. All garbage shall be removed from the Project site at the end of each work day, and construction personnel shall not feed or otherwise attract wildlife to the area where construction activities are taking place.*
- *AMM SPECIES-2 (No Pets in Construction Areas): To avoid harm and harassment of native species, workers and visitors shall not bring pets onto a Project site.*
- *AMM SPECIES-3 (Take Report): If accidental injury or death of any Covered Species occurs, workers shall immediately inform the approved biologist or on-site monitor and site supervisor. The approved biologist or on-site monitor shall phone the appropriate contact person at the Implementing Entity (i.e., the South Sacramento Conservation Agency). The Implementing Entity shall immediately contact the Wildlife Agencies (i.e., the USFWS and CDFW) by telephone. A memorandum shall be provided to the Implementing Entity and Wildlife Agencies within 1 working day of the incident. The report shall provide the date and location of the incident, number of individuals taken, the circumstances resulting in the take, and any corrective measures taken to prevent additional take.*
- *AMM SPECIES-4 (Post-Construction Compliance Report): A post-construction compliance report shall be submitted to the SSHCP Implementing Entity within 30 calendar days of completion of construction activities or within 30 calendar days of any break in construction activity that lasts more than 30 days. The report shall detail the construction start and completion dates, any information about meeting or failing to meet species take AMMs, effectiveness of each AMM that was applied at the Project site, and any known Project effects to Covered Species.*
- *AMM LID-1 (Stormwater Quality): When the size of a Covered Activity project exceeds the thresholds established by the State Water Resources Control Board (SWRCB) (see the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions, or future SWRCB-approved design manuals applicable to the Plan Area), incorporate stormwater management into site design to satisfy the requirements outlined in the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions. Stormwater management may include groundwater recharge (LID-2) and natural site features (LID-3).*
- *AMM LID-3 (Natural Site Features): Incorporate preservation of a site's natural aquatic features (such as creeks and streams) into project design to retain natural hydrologic patterns and to retain habitat that might be used by Covered Species.*
- *AMM EDGE-1 (Compatible Land Uses): To the maximum extent practicable, development project Covered Activities will locate compatible land uses (e.g., designated open space such as parks and ball fields, detention basins, and other land uses with less-intensive human activity) in areas immediately adjacent to existing or planned Preserve boundaries. The compatible land use will provide additional buffering of Preserves from potential indirect effects of adjacent urban development. The soil surfaces in a compatible land use area may be re-contoured provided that the soil restrictive layer remains undamaged and most of the soil profile above the restrictive layer remains intact. The Land Use Authority*

will determine when it is not practicable to locate a compatible land use adjacent to existing or planned Preserve boundaries.

- *AMM EDGE-2 (Single-Loaded Streets): To the maximum extent practicable, the design of Urban Development Covered Activities will locate single-loaded streets adjacent to existing or planned Preserve. The Land Use Authority will determine when single-loaded streets are not practicable.*
- *AMM EDGE-3 (Preserve Setbacks): Urban Development Covered Activities constructed adjacent to existing or planned Preserves must establish a minimum 50-foot-wide setback outward from the boundary of any existing Preserve or planned SSHCP Preserve. This minimum 50-foot-wide setback will function as a transition between Urban Development and the Preserve, and must be managed to maintain the natural community of vegetation present in the adjacent Preserve. As much of the setback as possible should remain in the same natural habitat as the Preserve.*

  However, as discussed in Section 5.2.5, Covered Activities in Preserve Setbacks in the UDA, where an existing or planned Preserve is adjacent to an existing roadway (e.g., collectors, arterials, thoroughfares), the 50-foot Preserve Setback will not be required, and any bicycle or pedestrian trail will be established in the road right-of-way. In addition, where a planned roadway crosses an existing or planned Preserve, no Preserve Setback will be required, and any bicycle or pedestrian trail will be established in the road right-of-way.
- *AMM EDGE-4 (Locate Stormwater Control Outside Preserves): Roads, sidewalks, and other impermeable surfaces of Urban Development Covered Activities adjacent to existing or planned Preserves will slope away from Preserves and Preserve Setbacks or intercept drainage with swales or curbs and gutters to preclude drainage from entering Preserves and Preserve Setbacks. Stormwater flows must be directed away from Preserves and Preserve Setbacks and directed into stormwater control facilities inside the development (outside Preserves and Preserve Setbacks) (see EDGE-6 for exception to EDGE-4 in certain SSHCP Linkage Preserves).*
- *AMM EDGE-5 (Stormwater Control in Preserve Setbacks): If trails are established in any Preserve Setback in compliance with EDGE-3, the trail must be sloped away from the Preserve, and rainwater leaving the trail surface must flow into an adjacent low-velocity bio-retention swale or cell to keep rainwater runoff and trail contaminants from entering the Preserve. Low-velocity bio-retention swales or cells are typically small linear features placed on one or both sides of a trail. As required by EDGE-3, trails and their adjacent bio-retention swales or cells must be located on the side of the Preserve Setback nearest development.*
- *AMM EDGE-7 (Hardpan/Duripan Protection): To protect the soil perched aquifer and the micro-watersheds supporting existing vernal pool hydrology, activities that have the potential to cut into, disrupt, or remove the soil's restrictive layer (hardpan or duripan) will not occur within Preserves or Preserve Setbacks. However, in certain circumstances, the Covered Activities defined in Section 5.2.6, Covered Activities in Stream Setbacks in the UDA, and Section 5.2.8, Covered Activities in the Laguna Creek Wildlife Corridor of the Preserve System, may result in punctures or other minor disruptions of the soil hardpan or duripan if approved by the Implementing Entity and the Technical Advisory Committee*

according to the process described in Chapter 9 of the SSHCP. If a Covered Activity on a Preserve or Preserve Setback results in a puncture or other disruption to the soil hardpan or duripan, the puncture will be sealed using bentonite clay or other material that maintains the functionality of the soil's restrictive layer and associated perched aquifer.

- *AMM EDGE-10 (Prevent Invasive Species Spread): Completed Covered Activities (including roads) will be maintained in a manner that avoids the spread of invasive species into Preserve and Open Space areas. Such maintenance measures will include the following:*
    - *To prevent the transport of non-native invasive species onto Preserves, before bringing any equipment onto an SSHCP Preserve or Preserve Setback, equipment must be cleaned of mud, dirt, and plant material. Cleaning will occur in the infested area or another appropriate location as approved by a Plan Permittee.*
    - *Mowing rotation will start in un-infested areas and move to infested areas.*
    - *Invasive plant prevention techniques will be incorporated into maintenance plans.*
    - *The SSHCP Implementing Entity will survey road shoulders, ditches, and rights-of-way that border SSHCP Preserves for invasive weeds or other exotic plant species. Where roadside weed infestations have reached a critical control point, the Implementing Entity or Land Use Authority Permittee will apply the appropriate manual, mechanical, or chemical treatment.*
- *AMM BMP-9 (Soil Compaction): After construction is complete, all temporarily disturbed areas will be restored similar to pre-project conditions, including impacts relating to soil compaction, water infiltration capacity, and soil hydrologic characteristics.*
- *AMM NATURE TRAIL-1 (Nature Trail Plan): A nature trail plan must be prepared for each Preserve where a trail is allowed by the Preserve Management Plan. Nature trails will be unpaved trails that vary in width depending on terrain and existing constraints, but will never exceed 4 feet in width. Where a trail crosses a swale, wooden walkways elevated to a height no greater than 2 feet will be installed. Trail improvements may include mowing vegetation to create or maintain a trail, minor grading to remove trip hazards, and signs providing directional and educational information. Public access to land acquired for preservation will be prohibited until a trail plan can be prepared by the Implementing Entity and approved by the Permitting Agencies. A trail plan will include the following:*
    - *Maps identifying areas that contain sensitive habitats or species occurrences.*
    - *Maps that show the location and footprint of proposed trails.*
    - *Methods used to control public access.*
    - *Trail and use monitoring methods, schedules, and responsibilities.*
    - *Trail operation and maintenance guidelines and responsibilities.*
    - *Clear triggers for use restrictions or closure based on sensitive biological indicators (e.g., seasonal closures of some trails on the basis of activity periods of Covered Species or sensitive species).*
- *AMM NATURE TRAIL-2 (Nature Trail Protection of Duripan): Nature trails will be sited and constructed so as not to interfere with existing soil duripan and the perched aquifer that support the existing hydrologic regime of the Vernal Pool–Grassland and will not interfere with existing pool hydrology. Trails within Preserves will not be paved.*

- *AMM NATURE TRAIL-3 (Nature Trail Location): Nature trails will be located away from sensitive natural resources (e.g., vernal pools, riparian habitat, woodland habitat, Covered Species occurrences, raptor nesting sites, tricolored blackbird (Agelaius tricolor) colony sites). The Wildlife Agencies will determine the distance necessary to avoid impacts to sensitive natural resources.*
- *AMM NATURE TRAIL-4 (Biological Studies Prior to Nature Trail Design): Biological studies will be conducted within the area being considered for nature trail construction prior to project design. The studies will include land cover type mapping and focused species surveys and/or wetland delineations. The biological studies will include assessments of potential effects of trail construction on Preserve System resources, and recommendations for avoidance and minimization that may be incorporated into project siting, design, construction, and operation.*
- *AMM NATURE TRAIL-5 (Monitoring of Nature Trail Impacts): Impacts that could result from use of a nature trail within a Preserve will be monitored according to the Preserve Management Plan (Chapter 8) to ensure that uses do not conflict with the individual Preserve Management Plan. If use of a trail is found to conflict with the individual Preserve Management Plan, use of that trail will be discontinued until adjustments in the use can be made to reduce or eliminate conflicts. The Implementing Entity will make decisions about discontinuing or modifying use of a trail in consultation with the Preserve Manager or other applicable Preserve management agency or organization.*
- *AMM ROAD-1 (Road Project Location): Road projects will be located in the least environmentally sensitive area to avoid, to the maximum extent practicable, impacts on Covered Species, Covered Species habitat, and waters of the United States. Road project alignments will follow existing roads, road easements, and rights-of-way, or be sited in disturbed areas to minimize habitat loss and additional habitat fragmentation.*
- *AMM ROAD-3 (Roadside Pesticide Use): If pesticide use is necessary along roadsides, the appropriate SSHCP Permittee will ensure that the pesticide application strictly complies with the pesticide label and all other applicable federal, state, and local authorities pertaining to the use, safety, storage, disposal, and reporting of the pesticide. Where roadside weed infestations have reached a critical control point, the Implementing Entity or a Land Use Authority Permittee will apply the appropriate manual, mechanical, or chemical treatment. In addition, the Implementing Entity or appropriate Land Use Authority Permittee will post signs along road shoulders adjacent to sensitive areas that are within the SSHCP Preserve System (e.g., California tiger salamander breeding ponds, endemic plant populations, vertebrates that rely on insects for part of their diet). The signs will identify pesticide use restrictions or other roadside maintenance restrictions.*
- *AMM RE-ESTABLISHMENT/ESTABLISHMENT-1 (Vernal Pool): Re-establish or establish Vernal Pool Wetland according to the following guidelines:*
    - *Re-establishment will always take priority over establishment of vernal pools. Establishment will be permitted only after it has been determined that sites with the potential to re-establish vernal pools no longer exist in the Plan Area or cannot be acquired through a willing seller/buyer agreement.*

- *When possible, re-established or established sites will be located adjacent to an existing Preserve(s) to maximize connectivity and Preserve area.*
- *Re-establishment or establishment will not result in direct or indirect adverse impacts to the hydrologic regime of existing vernal pools. Vernal pool re-establishment or establishment actions will not remove more than 10% of any existing vernal pool watershed, as defined by the SSHCP LIDAR analysis (see Section 3.3 and Conservation Action VPI1.2 in Table 7.1).*
- *Vernal pool re-establishment will attempt to restore the historical density and range of vernal pool sizes to the maximum extent feasible using historical aerial photography of the site, if available. Where aerial photography of the site's historical conditions is not available, vernal pool re-establishment will include a range of pool sizes (area and depth) to accommodate the different habitat needs and life history characteristics of the vernal pool invertebrate Covered Species.*
- *Established vernal pools must be located on sites with vernal pool soils, defined as any Plan Area soil type where vernal pools currently exist.*
- *Established vernal pool sites will include a range of pool sizes to accommodate the different habitat needs and life history characteristics of the three vernal pool invertebrate Covered Species.*
- *The total density of vernal pools will not exceed 10% of the suitable soil areas in any vernal pool re-establishment and/or establishment site, unless it can be shown that the suitable areas of that site historically supported greater densities.*
- *Re-establishment or establishment may include inoculation when it is likely that no seed or cyst bank of vernal pool species remains at a site. Vernal Pool inocula will come from nearby vernal pools that are on the same geologic formation and soil type.*

- *AMM UTILITY-2 (Utility Maintenance on Preserves): Utility maintenance inside SSHCP Preserves and SSHCP Preserve Setbacks containing vernal pools will occur only when vernal pools have been dry for 30 days, except in emergency situations related to human health and safety.*
- *AMM UTILITY-3 (Trenchless Construction Methods): Where a pipeline or conduit crosses an existing or planned Preserve or will be located between adjacent Preserves (e.g., under a roadway that has a Preserve on both sides), trenchless construction methods will be used to minimize impacts to the existing soil profile (including impacts to a hardpan or duripan) to maintain the perched aquifer in Vernal Pool Grassland land cover type.*

  AMM UTILITY-4 (Siting of Entry and Exit Location): The entry and exit locations for the trenchless construction method (see Utility-3) will be sited to avoid impacts to vernal pools and Riparian Woodland, and to avoid direct take of SSHCP Covered Species.

Impact 3.3-2: The Project has the potential to, directly or indirectly, have a substantial adverse effect through habitat modifications or reductions, cause populations to drop below self-sustaining levels, substantially eliminate a community, or substantially reduce the number of, or restrict the range of, an endangered, rare or threatened species, including those considered candidate, sensitive, or special-status, in local or regional plans, policies, regulations, or by the CDFW or USFWS - Reptile and Amphibian (Less than Significant with Mitigation)

Special-status reptiles and amphibians that occur within the 9-quad region for the Project site include: California red-legged frog (*Rana draytonii*), California tiger salamander, foothill yellow-legged frog (*Rana boylii)i*, giant garter snake, western pond turtle, and western spadefoot. Each of these is discussed below:

California Red-Legged Frog: The California red-legged frog is a federally threatened and a California species of special concern. This species occurs along the coast and coastal mountain ranges of California from Marin County to San Diego County and in the Sierra Nevada from Tehama County to Fresno County. California red legged-frog requires permanent and semi-permanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation; this species may also estivate in rodent burrows or cracks during dry periods.

The Project site is outside of the known range for this species and does not provide the appropriate habitat. This species is not present.

California Tiger Salamander: The California tiger salamander is a federal and California threatened species. This species is also a SSHCP Covered Species. It typically breeds in fish-free seasonal or permanent ponds associated with grassland communities. California tiger salamander may also breed in deeper ponded vernal pools, seasonal wetlands and/or other seasonal pools within swales or channels. California tiger salamander spends the majority of its life cycle below ground in ground squirrel or pocket gopher burrows in grasslands situated adjacent to potential breeding sites.

Forty-seven units of critical habitat, or habitat that has been deemed as essential to the survival and recovery of the California tiger salamander, were proposed by the USFWS on August 10, 2004. The 9,966-acre Unit 3 (Southeastern Sacramento Unit) is located approximately 12 miles south of the Project site.

The SSHCP California tiger salamander modeled habitat map (SSHCP Figure 3-16) shows that modeled habitat for California tiger salamander is not present within the Project footprint or within 300 feet of the Project footprint. While the Project site has a variety of aquatic habitats, it does not have the necessary aquatic habitat for this species during their breeding season and, as such, this species is not present within the Project site.

Foothill Yellow-Legged Frog: The Foothill yellow-legged frog is a federally threatened and a California species of special concern. This species occurs is found in most of northern California

west of the Cascade crest and along the western Sierra Nevada foothills up to approximately 6,370 feet. This species requires rocky streams in a variety of habitats including valley-foothill hardwood, conifer, and riparian forests, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral and wet meadow.

The Project site is outside of the known range for this species and does not provide the appropriate habitat. There are no CNDDB occurrences within five miles of the Project site. This species is not present.

Giant Garter Snake: Giant garter snake is designated as a federally threatened and state threatened species afforded special protection by FWS and CDFW. This species is also a SSHCP Covered Species. The giant garter snake is generally associated with larger canals, irrigation ditches, and other semi-permanent to permanent aquatic sites with slow moving water and an abundance of emergent vegetation.

The SSHCP giant garter snake modeled habitat map (SSHCP Figure 3-18) shows that modeled habitat for giant garter snake is not present within the Project footprint or within 300 feet of the Project footprint. While the Project site has a variety of aquatic habitats, it does not have the necessary aquatic habitat for this species during their active season and, thus, is not present within the Project site.

Western Pond Turtle: The western pond turtle is a California species of special concern. This species is also a SSHCP Covered Species. Its favored habitats include streams, large rivers and canals with slow-moving water, aquatic vegetation, and open basking sites. Although the turtles must live near water, they can tolerate drought by burrowing into the muddy beds of dried drainages. This species feeds mainly on invertebrates such as insects and worms, but will also consume small fish, frogs, mammals and some plants. Western pond turtle predators include raccoons, coyotes, raptors, weasels, large fish, and bullfrogs. This species breeds from mid to late spring in adjacent open grasslands or sandy banks.

The SSHCP western pond turtle modeled habitat map (SSHCP Figure 3-19) does not show that modeled habitat for western pond turtle is present within the Project footprint or within 300 feet of the Project footprint. While the Project site has a variety of aquatic habitats, it does not have the necessary aquatic habitat for this species and, thus, is not present within the Project site.

Western Spadefoot: The western spadefoot is a California species of special concern. This species is also a SSHCP Covered Species. This species is found in the Sierra Nevada foothills, Central Valley, Coast Ranges, and coastal counties in southern California. Its favored habitats include shallow streams with riffles and seasonal wetlands, such as vernal pools in annual grasslands and oak woodlands.

The SSHCP western spadefoot modeled habitat map (SSHCP Figure 3-17) shows that modeled habitat for western spadefoot is present within the Project footprint. The field surveys revealed that the necessary habitat for this species is present within the Project site, and this species has a high potential to occur on-site. The vernal pools and depressional seasonal wetlands in the Project

site provide breeding habitat and there is one known occurrence within five miles of the Project site.

Conclusion: The Project site is largely undeveloped and has been previously used for agricultural (grazing) uses. The Project site is outside of the known extant range for California red legged-frog, California tiger salamander, and Foothill yellow-legged frog. Additionally, habitat for giant garter snake and western pond turtle is not present within the Project site. However, due to the suitable vernal pool and seasonal wetland habitat present within the Project site, the potential for western spadefoot to occur within the Project site is high. Without mitigation, this would be considered a **potentially significant** impact.

As previously discussed, the Project proponent intends to obtain coverage for their activities under the City's ITP. The SSHCP includes western spadefoot as a Covered Species. Mitigation Measure 3.3-1 provides the requirement to submit a SSHCP permit application package to the City as a request that the incidental take coverage provided by the City's SSHCP ITP be extended to the proposed activities. All relevant SSHCP AMMs will be required and the Project proponent shall be responsible for paying all SSHCP development fees associated with obtaining coverage. A portion of those fees are then used to purchase habitat land as compensatory mitigation for the loss of habitat. The Project also includes a 199.5 acre preserve; however, credit for the preserve is subject to the review and approval of the City.

Mitigation Measure 3.3-3 includes AMMs that are specifically presented for western spadefoot. As noted in Impact 3.3-1, however, before construction begins, the SSHCP requires that the Project proponent demonstrate to the City that all necessary AMMs will be fulfilled. Additionally, the below mitigation measures would result in compensatory mitigation for the loss of habitat, and would avoid or minimize impacts to protected species to the extent feasible. Implementation of the Project, with the below mitigation measures and consistency with the SSHCP, would reduce the potential for impacts to special-status species to a ***less than significant*** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.3-3: *The Project proponent shall implement the following SSHCP AMMs to the satisfaction of the City to avoid direct and indirect effects of Covered Activities on western spadefoot:*

- *AMM WS-1 (Western Spadefoot Work Window): Ground-disturbing Covered Activities shall occur outside the breeding and dispersal season (after May 15 and before October 15), to the maximum extent practicable.*
- *AMM WS-2 (Western Spadefoot Exclusion Fencing): If Covered Activities must be implemented after October 15 and before May 15, exclusion fencing shall be installed around the Project footprint before October 15, and the Project site must be monitored by an approved biologist following rain events. Temporary high visibility construction fencing shall be installed along the edge of work areas, and silt fencing shall be installed immediately behind the temporary high-visibility construction fencing to exclude western spadefoot from entering the construction area. Fencing shall remain in place until all construction activities within the construction area are completed. No Project activities*

shall occur outside the delineated Project footprint. If a western spadefoot is encountered. If a western spadefoot is encountered, refer to WS-6, below.

- *AMM WS-3 (Western Spadefoot Monitoring): If Covered Activities must be implemented in the breeding and dispersal season (after October 15 and before May 15), an approved biologist experienced with western spadefoot identification and behavior shall monitor the Project site, including the integrity of any exclusion fencing. The approved biologist shall be on site daily while construction related activities are taking place, and shall inspect the Project site daily for western spadefoot prior to construction activities. The approved biologist shall also train construction personnel on the required avoidance procedures, exclusion fencing, and protocols in the event that a western spadefoot enters an active construction zone (i.e., outside the buffer zone). If a western spadefoot is encountered, refer to WS-6, below.*
- *AMM WS-4 (Avoid Western Spadefoot Entrapment): If a Covered Activity occurs in western spadefoot modeled habitat (Figure 3-17), all excavated steep-walled holes and trenches more than 6 inches deep shall be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes and trenches shall be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within western spadefoot modeled habitat shall be inspected for western spadefoot by the approved biologist prior to being moved. If a western spadefoot is encountered, refer to WS-6, below.*
- *AMM WS-5 (Erosion Control Materials in Western Spadefoot Habitat): If erosion control is implemented within western spadefoot modeled habitat, non-entangling erosion control material shall be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material shall be used to ensure that western spadefoots are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.*
- *AMM WS-6 (Western Spadefoot Encounter Protocol): If Covered Activities must be implemented during the breeding and dispersal season (after October 15 and before May 15), and a western spadefoot is encountered during construction activities, the approved biologist shall notify the Wildlife Agencies (i.e., the USFWS and CDFW) immediately. Construction activities shall be suspended in a 100-foot radius of the animal until the animal leaves the Project site on its own volition. If necessary, the approved biologist shall notify the Wildlife Agencies to determine the appropriate procedures related to relocation. If the animal is handled, a report shall be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the western spadefoot within 1 business day to the Wildlife Agencies. The biologist shall report any take of listed species to the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife immediately. Any worker who inadvertently injures or kills a western spadefoot or who finds dead, injured, or entrapped western spadefoot(s) must immediately report the incident to the approved biologist.*

Impact 3.3-3: The Project has the potential to, directly or indirectly, have a substantial adverse effect through habitat modifications or reductions, cause populations to drop below self-sustaining levels, substantially eliminate a community, or substantially reduce the number of, or restrict the range of, an endangered, rare or threatened species, including those considered candidate, sensitive, or special-status, in local or regional plans, policies, regulations, or by the CDFW or USFWS - Fish (No Impact)

The SSHCP does not include any fish species that are Covered Species. Additionally, the SSHCP does not include any modeled habitat map for species status fish species. Special-status fish that occur within the 9-quad region for the Project site include steelhead - Central Valley DPS. Populations of this species can be found in the Sacramento and San Joaquin Rivers and their tributaries. This species requires aquatic habitat that is free of heavy sedimentation with adequate flow and cool, clear water. Escape cover such as logs, undercut banks, and deep pools are required for spawning adults. Although the Project site contains aquatic habitats, including a headwater tributary of Morrison Creek, seasonal drainages, and wetlands, these on-site aquatic habitats are not suitable for this species. Implementation of the Project would have ***no impact*** on special-status fish species.

Impact 3.3-4: The Project has the potential to, directly or indirectly, have a substantial adverse effect through habitat modifications or reductions, cause populations to drop below self-sustaining levels, substantially eliminate a community, or substantially reduce the number of, or restrict the range of, an endangered, rare or threatened species, including those considered candidate, sensitive, or special-status, in local or regional plans, policies, regulations, or by the CDFW or USFWS - Birds (Less than Significant with Mitigation)

The SSHCP has nine birds that are Covered Species. These include: Cooper's hawk, ferruginous hawk (*Buteo regalis*), greater sandhill crane (*Grus canadensis tabida*), loggerhead shrike (*Lanius ludovicianus*), northern harrier (*Circus cyaneus*), Swainson's hawk (*Buteo Swainsoni*), tricolored blackbird (*Agelaius tricolor*), western burrowing owl (*Athene cunicularia*), and white-tailed kite (*Elanus leucurus*). Of these nine species, the SSHCP modeled habitat maps (SSHCP Figures 3-20 through 3-28) show that modeled habitat is present within the Project footprint for the seven of the nine Covered Species, including: ferruginous hawk, loggerhead shrike, northern harrier, Swainson's hawk, tricolored blackbird, western burrowing owl, and white-tailed kite. There is no SSHCP modeled habitat for Cooper's hawk or greater sandhill crane within the Project site.

In addition to the nine SSCHP Covered Species, there are nine special-status bird species documented as occurring within the 9-quad region for the Project site. This includes the following species: bald eagle (*Haliaeetus leucocephalus*), bank swallow (*Riparia riparia*), California black rail (*Laterallus jamaicensis coturniculus*), double-crested cormorant (*Phalacrocorax auritus*), golden eagle (*Aquila chrysaetos*), great egret (*Ardea alba*), great blue heron (*Ardea herodias*), grasshopper sparrow (*Ammodramus savannarum*), and merlin (*Falco columbarius*).

In addition to these SSHCP Covered Species and CNDDB documented species, all nesting raptors and migratory birds known within the region receive special protections. These species are discussed below.

Nesting Raptors (Birds of Prey)

All raptors (owls, hawks, eagles, falcons), including common species, and their nests, are protected from take pursuant to the Fish and Game Code of California Section 3503.5, and the federal MBTA, among other federal and state regulations. Powerlines on the Project site and trees located in the region represent potentially suitable nesting habitat for a variety of special-status raptors. There are no trees located on the Project site. The remainder of the Project site is generally not suitable for nesting raptors other than ground nesters. In general, raptor nesting occurs from late February and early March through late July and early August, depending on various environmental conditions. The field surveys over the past decade, including the latest 2016 survey, did not reveal any evidence of raptor nesting in the powerline towers or ground nesting; however, the Project site provides foraging habitat for most raptors and nesting habitat for a few ground nesting raptors.

Raptors that are documented in the CNDDB in the regional vicinity, and/or that are SSHCP Covered Species, are discussed individually below.

SSHCP COVERED SPECIES

Cooper's Hawk: Cooper's hawk is a SSHCP Covered Species and is protected by the MBTA and the Fish and Game Code. They prefer open woodland habitat. Nest sites for this species are mainly found in riparian growths of deciduous trees, in canyon bottoms on river flood-plains, and also in live oaks.

The SSHCP Cooper's hawk modeled habitat map (SSHCP Figure 3-20) does not show that modeled habitat for Cooper's hawk is present within the Project footprint or within 300 feet of the Project footprint. The Project site does not contain suitable habitat for this species.

Ferruginous Hawk: Ferruginous hawk is a SSHCP Covered Species and is listed by CDFW as a Watch List species. They prefer open grasslands, sagebrush flats, desert scrub, low foothills, and fringes of pinyon and juniper habitats. This species eats mostly lagomorphs, ground squirrels, and mice.

The SSHCP ferruginous hawk modeled habitat map (SSHCP Figure 3-21) shows that modeled habitat for ferruginous hawk is present within the Project footprint. The field survey revealed that the annual grassland on and surrounding the Project site may provide suitable foraging habitat. Suitable nesting habitat is not present.

Northern Harrier: Northern harrier is a SSHCP Covered Species and is listed by CDFW as a Watch List species. They prefer a variety of open grassland, wetland, and agricultural habitats. Open wetland habitats used for breeding include marshy meadows, wet and lightly grazed pastures, and freshwater and brackish marshes. Northern Harrier breeding habitat also includes dry upland habitats, including grasslands, croplands, drained marshlands, and shrub-steppe in cold deserts. This species is a ground nester.

The SSHCP northern harrier modeled habitat map (SSHCP Figure 3-24) shows that modeled habitat for northern harrier is present within the Project footprint. The field survey revealed that the annual grassland on and surrounding the Project site may provide suitable foraging and nesting habitat.

Swainson's Hawk: Swainson's hawk is a SSHCP Covered Species and currently listed as threatened in California by the CDFW. Breeding pairs typically nest in tall cottonwoods, valley oaks, or willows associated with riparian corridors, grassland, irrigated pasture, and cropland with a high density of rodents. The Central Valley populations breed and nest in the late spring through early summer before migrating to Central and South America for the winter.

The SSHCP Swainson's hawk modeled habitat map (SSHCP Figure 3-25) shows that modeled habitat for Swainson's hawk is present within the Project footprint. The field survey revealed that the Project site is considered potential foraging habitat for this species since they are known to nest within five miles of the Project site. The nearest recorded nest location is approximately half a mile east of the northeast corner of the Project site.

Western Burrowing Owl: Western burrowing owl is a SSHCP Covered Species and is a CDFW species of special concern. They typically inhabit open grasslands and nest in abandoned ground squirrel burrows, cavities associated with raised mounds, levees, or soft berm features. This species is a ground nester.

The SSHCP western burrowing owl modeled habitat map (SSHCP Figure 3-27) shows that modeled habitat for western burrowing owl is present within the Project footprint. There are also 12 CNDDB records for this species within five miles of the Project site. The field survey revealed that the Project site contains annual grassland and suitable burrows to support this species.

White-Tailed Kite: White-tailed kite is a SSHCP Covered Species and a CDFW Fully Protected species. This non-migrating bird typically attains a wingspan of approximately 40 inches and feeds primarily on insects, small mammals, reptiles, and amphibians, which it forages from open grasslands. It builds a platform-like nest of sticks in trees or shrubs and lays 3 to 5 eggs, but may brood a second clutch if prey is abundant. The kite's distinct style of hunting includes hovering before diving onto its target.

The SSHCP white-tailed kite modeled habitat map (SSHCP Figure 3-28) shows that modeled habitat for white-tailed kite is present within the Project footprint. There are three CNDDB records of white-tailed kite documented within five miles of the Project site. One white-tailed kite was observed foraging within the annual grassland during the June 12, 2017 rare plant survey of the Project site. The annual grassland on the Project site provides suitable foraging habitat for this species.

OTHER RAPTOR SPECIES

Bald Eagle: Bald eagle is listed by CDFW as an Endangered species. The breeding range includes the Sierra Nevada, Cascade Range and portions of the Coast Ranges; winter range expands to include most of the state. This species forages primarily in large inland fish-bearing waters with

adjacent large trees or snags and occasionally in uplands with abundant rabbits, other small mammals, or carrion.

The Project site does not contain suitable habitat for this species.

Golden Eagle: Golden eagle is listed by CDFW as a Fully Protected species. The winter range for this species spans most of California; the breeding range excludes the Central Valley floor. This species nests in cliffs, rocky outcrops, and large trees. Golden eagles typically forage in a variety of open habitats, including grassland, shrubland, and cropland

There is one CNDDB record of golden eagle nest documented within five miles of the Project site. No golden eagles were observed during previous site visits. Given the territory size of foraging golden eagles, the site could potentially be within the nesting pair's foraging territory. The annual grassland on-site provides suitable foraging habitat for golden eagle; however, there is not suitable nesting habitat for golden eagles on-site.

Merlin: The Merlin is a CDFW species of special concern that has never been observed nesting in California. Though it is a transient throughout most of the state, wintering populations are known to occur in the Central Valley and along the coast.

The annual grassland on and surrounding the Project site may provide suitable foraging habitat for this species. This species does not nest in the region.

Nesting Passerine Birds (Songbirds)

There is limited nesting habitat present on the Project site for songbirds. The annual grasslands with aquatic features scattered throughout the Project site provide some foraging habitat for nesting passerine birds. Tricolored blackbird and loggerhead shrike are covered by the SSHCP. Additionally, the following birds are discussed further below: bank swallow and grasshopper sparrows. Development of the Project site would remove potential habitat.

SSHCP COVERED SPECIES

Tricolored Blackbird: Tricolored blackbirds is a SSHCP Covered Species and is listed by CDFW as a Threatened species. During the breeding season, tricolored blackbirds typically nest in dense colonies (some estimated as having 200,000+ nests), with males defending small territories and mating with one to four females. Studies have shown that nesting colonies are often located in seasonal wetlands with tules and cattails present. More recent studies indicate that nesting colonies are also regularly found in Himalayan blackberries (*Rubus discolor*) and grain fields. Other substrates where they have been observed nesting include giant European reed (*Arundo donax*), safflower (*Carthamus tinctorius*), tamarisk (*Tamarix* spp.), elderberry (*Sambucus* spp.), poison-oak (*Toxicodendron diversilobum*), and riparian scrublands and forests (e.g., *Salix*, *Populus*, and *Fraxinus* spp.).

Tricolored blackbird foraging habitats in all seasons include annual grasslands, wet and dry vernal pools and other seasonal wetlands, agricultural fields (such as large tracts of alfalfa and pastures with continuous haying schedules, and recently tilled fields), cattle feedlots, and dairies. They also forage occasionally in Mixed Riparian Scrub habitats along marsh borders. Weed-free row crops,

intensively managed vineyards, and orchards do not serve as regular foraging sites (Beedy and Hamilton 1997, 1999; DeHaven 2000).

The SSHCP tricolored blackbird modeled habitat map (SSHCP Figure 3-26) shows that modeled habitat for tricolored blackbird is present within the Project footprint. The annual grassland on the Project site provides suitable foraging habitat for this species. The aquatic habitat on the Project site does not provide suitable nesting habitat for this species.

Loggerhead Shrike: loggerhead shrike is a SSHCP Covered Species and is listed by CDFW as a species of special concern. Loggerhead shrikes occur in dry, open habitats including grasslands, pastures with fence rows, agricultural fields, open woodlands (savannas), scrub, and riparian areas. They inhabit open areas with clear visibility for hunting, perches for scanning, and scattered small trees and large shrubs for nesting. Loggerhead shrikes typically avoid completely treeless and shrubless areas (Cade and Woods 1997), as well as urbanized and densely wooded areas (Grinnell and Miller 1944). Winter foraging habitat is similar to summer breeding and foraging habitat; however, shrikes also use idle pastures and hayfields during the winter (Bartgis 1992).

The SSHCP loggerhead shrike modeled habitat map (SSHCP Figure 3-23) shows that modeled habitat for loggerhead shrike is present within the Project footprint. The annual grassland on the Project site provides suitable foraging habitat for this species.

OTHER SPECIES

Bank Swallow: Bank swallow is listed by CDFW as a Threatened species. They typically prefer to nest along banks or bluffs along rivers or coastal areas. This species also prefers low gradient and meandering rivers or bodies of water.

The Project site does not contain suitable habitat for this species.

Grasshopper Sparrow: Grasshopper sparrows are listed by CDFW as a species of special concern due to declining populations in the Great Central Valley of California. They prefer open grasslands with barren ground for foraging, and tend to be found in areas with vegetation and scrub cover especially in grasslands and prairies.

The annual grassland on and surrounding the Project site may provide suitable nesting and foraging habitat.

Shore/Water Birds

Colonial nesting water birds, such as double-crested cormorant, great blue heron, and great egret, among others, are considered sensitive species. These species are not formally listed and protected pursuant to either the state or federal Endangered Species Acts and are not SSHCP Covered Species. However, these species are of stated interest to CDFW and are protected by the MBTA. The colonial nesting water birds documented within the region are discussed individually below.

Double-Crested Cormorant: Double-crested cormorant are protected by the MBTA. They are colonial nesters which prefer to nest on coastal cliffs, offshore islands, and along lake margins in

the interior of the state. This species nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.

The Project site does not contain suitable habitat for this species.

Great Egret: Great egret are protected by the MBTA. These colonial nesters prefer to nest in large trees. Rookery sites are typically located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.

The grassland of the Project site provides foraging habitat for this species. There is no nesting habitat within the Project site.

Great Blue Heron: Great blue heron are protected by the MBTA. These colonial nesters prefer to nest in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites are typically located in close proximity to foraging areas, which include marshes, lake margins, tide-flats, rivers and streams, wet meadows

The grassland of the Project site provides foraging habitat for this species and this species was observed flying over the Project site during the June 12, 2017, rare plant survey. However, there is no nesting habitat within the Project site.

Other Sensitive Birds (Gruiformes)

The term "Gruiformes" means "crane-like" and there are a considerable number of Gruiformes bird families with a widespread geographical diversity. Greater sandhill crane (*Grus canadensis tabida*) is an SSHCP Covered Species. Additionally, as discussed below, there is some suitable habitat (seasonal wetlands and drainages) on the Project site for California black rail (*Laterallus jamaicensis coturniculus*). The development of the Project site would remove this habitat.

SSHCP COVERED SPECIES

Greater Sandhill Crane: Greater sandhill crane is listed as a CDFW threatened species, and is a SSHCP Covered Species. Greater sandhill cranes winter and use open agricultural habitats, natural vegetation communities, and seasonally managed wetlands. After the onset of winter rains, sandhill cranes begin foraging for invertebrates by probing soils in grassland habitats and overturning cattle dung. They also hunt for mice in taller grassland vegetation. They appear to avoid grassland habitats when vegetation exceeds 10 inches. Invertebrates are also consumed in natural and managed seasonal wetlands.

The SSHCP greater sandhill crane modeled habitat map (SSHCP Figure 3-20) does not show that modeled habitat for greater sandhill crane is present within the Project footprint or within 300 feet of the Project footprint. The Project site does not contain suitable habitat for this species.

OTHER SPECIES

California Black Rail: California black rail are listed by CDFW as a Threatened species. They inhabit freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. This species requires water depths of about one inch that do not fluctuate during the year and dense vegetation for nesting habitat.

The aquatic habitat on the Project site is seasonally dry and is not optimal for this species. The Project site does not provide suitable habitat for this species.

Conclusion

Several bird species discussed above are protected under federal, state, or local regulations, and several are Covered Species under the SSHCP. The Project design includes an on-site preserve that would protect approximately 199.5 acres of habitat. Nevertheless, the Project would result in the removal of approximately 330 acres of suitable foraging habitat for a variety of special-status birds discussed above. Vegetation clearing activities could impact ground nesting birds. In addition, noise and vibration associated with construction activities could result in nest abandonment if active nesting were to occur during construction. This is a **potentially significant** impact.

As previously discussed, the Project proponent intends to obtain coverage for their activities under the City's ITP. Mitigation Measure 3.3-1 provides the requirement to submit a SSHCP permit application package to the City as a request that the incidental take coverage provided by the City's SSHCP ITP be extended to the proposed activities. All relevant SSHCP AMMs will be required and the Project proponent shall be responsible for paying all SSHCP development fees associated with obtaining coverage. A portion of those fees are then used to purchase habitat land as compensatory mitigation for the loss of habitat. The Project also includes a 199.5 acre preserve; however, credit for the preserve is subject to the review and approval of the City.

Mitigation Measures 3.3-4 through 3.7, included below, include AMMs that are specifically presented for special-status birds. It is noted, however, that before construction begins, the SSHCP requires that the Project proponent demonstrate to the City that all necessary AMMs will be fulfilled. Additionally, Mitigation Measure 3.3-8, included below, requires preconstruction surveys for other protected bird species.

The below Mitigation Measures would result in compensatory mitigation for the loss of habitat, and would avoid or minimize impacts to protected species to the extent feasible. Implementation of the Project, with the below mitigation measures and consistency with the SSHCP, would reduce the potential for impacts to special-status species to a ***less than significant*** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.3-4: *The Project proponent shall implement the following SSHCP AMMs to the satisfaction of the City to avoid direct and indirect effects of Covered Activities on tricolored blackbird:*

- *AMM TCB-1 (Tricolored Blackbird Surveys): If modeled habitat for tricolored blackbird is present within a Covered Activity's Project footprint or within 500 feet of a project footprint, then an approved biologist shall conduct a field investigation to determine if existing or potential nesting or foraging sites are present within the Project footprint and adjacent areas within 500 feet of the Project footprint. Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. Within the Plan Area, potential tricolor blackbird nest sites are often associated with freshwater marsh and seasonal wetlands, or in thickets of willow,*

blackberry, wild rose, thistle, and other thorny vegetation. Tricolored blackbirds are also known to nest in crops associated with dairy farms. Foraging habitat is associated with annual grasslands, wet and dry vernal pools and other seasonal wetlands, agricultural fields (such as large tracts of alfalfa and pastures with continuous haying schedules and recently tilled fields), cattle feedlots, and dairies. The Third-Party Project Proponent shall map all existing or potential nesting or foraging sites and provide these maps to the Local Land Use Permittees (i.e., City of Rancho Cordova) and Implementing Entity (i.e., the South Sacramento Conservation Agency). Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 of the SSHCP for the process to conduct and submit survey information.

- *AMM TCB-2 (Tricolored Blackbird Pre-Construction Surveys): Pre-construction surveys shall be required to determine if active nests are present within a project footprint or within 500 feet of a project footprint if existing or potential nest sites were found during design surveys and construction activities shall occur during the breeding season (March 1 through September 15). An approved biologist shall conduct pre-construction surveys within 30 days and within 3 days of ground-disturbing activities, and within the Project footprint and 500 feet of the Project footprint to determine the presence of nesting tricolored blackbird. Pre-construction surveys shall be conducted during the breeding season (March 1 through August 31). Surveys conducted in February (to meet pre-construction survey requirements for work starting in March) must be conducted within 14 days and 3 days in advance of ground-disturbing activities. If a nest is present, then TCB-3 and TCB-4 shall be implemented. The approved biologist shall inform the Land Use Authority Permittee and the Implementing Entity of species locations, and they in turn shall notify the Wildlife Agencies (i.e., the USFWS and CDFW).*
- *AMM TCB-3 (Tricolored Blackbird Nest Buffer): If active nests are found within the Project footprint or within 500 feet of any Project -related Covered Activity, the Third-Party Project Proponent shall establish a 500-foot temporary buffer around the active nest until the young have fledged.*
- *AMM TCB-4 (Tricolored Blackbird Nest Buffer Monitoring): If nesting tricolored blackbirds are present within the Project footprint or within 500 feet of any Project-related Covered Activity, then an approved biologist experienced with tricolored blackbird behavior shall be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist shall be on site daily while construction-related activities are taking place near the disturbance buffer. Work within the nest disturbance buffer shall not be permitted. If the approved biologist determines that tricolored blackbirds are exhibiting agitated behavior, construction shall cease until the buffer size is increased to a distance necessary to result in no harm or harassment to the nesting tricolored blackbirds. If the biologist determines that the colonies are at risk, a meeting with the Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies shall be held to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist shall also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event*

that a tricolored blackbird flies into an active construction zone (i.e., outside the buffer zone).

- *AMM TCB-5 (Timing of Pesticide Use and Harvest Timing on Agricultural Preserves): On SSHCP Agricultural Preserves, pesticides (including herbicides) shall not be applied from January 1 through July 15.*

Mitigation Measure 3.3-5: *The Project proponent shall implement the following SSHCP AMMs to the satisfaction of the City to avoid direct and indirect effects of Covered Activities on Swainson's hawk:*

- *AMM SWHA-1 (Swainson's Hawk Surveys): If modeled habitat for Swainson's hawk (Figure 3-25) is present within a Covered Activity's Project footprint or within 0.25 mile of a Project footprint, then an approved biologist shall conduct a survey to determine if existing or potential nesting sites are present within the Project footprint and adjacent areas within 0.25 mile of the Project footprint. Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. Nest sites are often associated with Riparian land cover, but also include lone trees in fields, trees along roadways, and trees around structures. Nest trees may include, but are not limited to, Fremont's cottonwood (Populus fremontii), oaks (Quercus spp.), willows (Salix spp.), walnuts (Juglans spp.), eucalyptus (Eucalyptus spp.), pines (Pinus spp.), and Deodar cedar (Cedrus deodara). The Third-Party Project Proponent shall map all existing and potential nesting sites and provide these maps to the Local Land Use Permittees (i.e., City of Rancho Cordova) and Implementing Entity (i.e., the South Sacramento Conservation Agency). Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 for the process to conduct and submit survey information.*
- *AMM SWHA-2 (Swainson's Hawk Pre-Construction Surveys): Pre-construction surveys shall be required to determine if active nests are present within a Project footprint or within 0.25 mile of a Project footprint if existing or potential nest sites were found during initial surveys and construction activities shall occur during the breeding season (March 1 through September 15). An approved biologist shall conduct pre-construction surveys within 30 days and 3 days of ground-disturbing activities to determine presence of nesting Swainson's hawk. Pre-construction surveys shall be conducted during the breeding season (March 1 through September 15). If a nest is present, then SWHA-3 and SWHA-4 shall be implemented. The approved biologist shall inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn shall notify the Wildlife Agencies (i.e., the USFWS and CDFW).*
- *AMM SWHA-3 (Swainson's Hawk Nest Buffer): If active nests are found within the Project footprint or within 0.25 mile of any Project-related Covered Activity, the Third-Party Project Proponent shall establish a 0.25 mile disturbance buffer around the active nest until the young have fledged, with concurrence from the Wildlife Agencies.*
- *AMM SWHA-4 (Swainson's Hawk Nest Buffer Monitoring): If nesting Swainson's hawks are present within the Project footprint or within 0.25 mile of any Project-related Covered Activity, then an approved biologist experienced with Swainson's hawk behavior shall be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting*

season and to determine when the young have fledged. The approved biologist shall be on site daily while construction-related activities are taking place within the buffer. Work within the temporary nest disturbance buffer can occur with the written permission of the Implementing Entity and Wildlife Agencies. If nesting Swainson's hawks begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the approved biologist shall have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies shall meet to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist shall also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a Swainson's hawk flies into an active construction zone (i.e., outside the buffer zone).

Mitigation Measure 3.3-6: *The Project proponent shall implement the following SSHCP AMMs to the satisfaction of the City to avoid direct and indirect effects of Covered Activities on western burrowing owl:*

- *AMM WBO-1 (Western Burrowing Owl Surveys): Surveys within modeled habitat are required for both the breeding and non-breeding season. If the Project site falls within modeled habitat, an approved biologist shall survey the Project site and map all burrows, noting any burrows that may be occupied. Occupied burrows are often (but not always) indicated by tracks, feathers, egg shell fragments, pellets, prey remains, and/or excrement. Surveying and mapping shall be conducted by the approved biologist while walking transects throughout the entire Project site plus all accessible areas within a 250-foot radius from the Project site. The centerline of these transects shall be no more than 50 feet apart and shall vary in width to account for changes in terrain and vegetation that can preclude complete visual coverage of the area. For example, in hilly terrain with patches of tall grass, transects shall be closer together, and in open areas with little vegetation, they can be 50 feet apart. This methodology is consistent with current survey protocols for this species (California Burrowing Owl Consortium 1993). Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. If suitable habitat is identified during the initial survey, and if the Project does not fully avoid the habitat, pre-construction surveys shall be required. Burrowing owl habitat is fully avoided if Project-related activities do not impinge on a 250-foot buffer established by the approved biologist around suitable burrows. See Chapter 10 for the process to conduct and submit survey information.*
- *AMM WBO-2 (Western Burrowing Owl Pre-Construction Surveys): Prior to any Covered Activity ground disturbance, an approved biologist shall conduct pre-construction surveys in all areas that were identified as suitable habitat during the initial surveys. The purpose of the pre-construction surveys is to document the presence or absence of burrowing owls on the Project site, particularly in areas within 250 feet of construction activities. To maximize the likelihood of detecting owls, the pre-construction survey shall last a minimum of 3 hours. The survey shall begin 1 hour before sunrise and continue until 2 hours after sunrise (3 hours total), or begin 2 hours before sunset and continue until 1 hour after*

sunset. Additional time may be required for large project sites. A minimum of two pre-construction surveys shall be conducted (if owls are detected on the first survey, a second survey is not needed). All owls observed shall be counted and their location shall be mapped. Surveys shall conclude no more than 2 calendar days prior to construction. Therefore, the Third-Party Project Proponent must begin surveys no more than 4 days prior to construction (2 days of surveying plus up to 2 days between surveys and construction). To avoid last-minute changes in schedule or contracting that may occur if burrowing owls are found, the Third-Party Project Proponent may also conduct a preliminary survey up to 15 days before construction. This preliminary survey may count as the first of the two required surveys as long as the second survey concludes no more than 2 calendar days in advance of construction.

- *AMM WBO-3 (Burrowing Owl Avoidance): If western burrowing owl or evidence of western burrowing owl is observed on the Project site or within 250 feet of the Project site during pre-construction surveys, then the following shall occur:*

  ***During Breeding Season**: If the approved biologist finds evidence of western burrowing owls within a Project site during the breeding season (February 1 through August 31), all Project-related activities shall avoid nest sites during the remainder of the breeding season or while the nest remains occupied by adults or young (nest occupation includes individuals or family groups foraging on or near the site following fledging). Avoidance is establishment of a minimum 250-foot buffer zone around nests. Construction and other Project-related activities may occur outside of the 250-foot buffer zone. Construction and other Project-related activities may be allowed inside of the 250-foot non-disturbance buffer during the breeding season if the nest is not disturbed, and the Third-Party Project Proponent develops an avoidance, minimization, and monitoring plan that is approved by the Implementing Entity (i.e., the South Sacramento Conservation Agency) and Wildlife Agencies (i.e., the USFWS and CDFW) prior to Project construction based on the following criteria:*

  - *The Implementing Entity (i.e., the South Sacramento Conservation Agency) and Wildlife Agencies (i.e., the USFWS and CDFW) approve of the avoidance and minimization plan provided by the Project applicant.*
  - *An approved biologist monitors the owls for at least 3 days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction).*
  - *The same approved biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.*

  If there is any change in owl nesting and foraging behavior as a result of construction activities, the approved biologist shall have authority to shut down activities within the 250-foot buffer. Construction cannot resume within the 250-foot buffer until any owls present are no longer affected by nearby construction activities, and with written concurrence from the Wildlife Agencies.

If monitoring by the approved biologist indicates that the nest is abandoned prior to the end of nesting season and the burrow is no longer in use, the non-disturbance buffer zone may be removed if approved by the Wildlife Agencies. The approved biologist shall excavate the burrow in accordance with the latest California Department of Fish and Wildlife guidelines for burrowing owl to prevent reoccupation after receiving approval from the Wildlife Agencies.

The Implementing Entity and Wildlife Agencies shall respond to a request from the Third-Party Project Proponent to review the proposed construction monitoring plan within 21 days.

***During Non-Breeding Season**: During the non-breeding season (September 1 through January 31), the approved biologist shall establish a minimum 250-foot non-disturbance buffer around occupied burrows. Construction activities outside of this 250-foot buffer shall be allowed. Construction activities within the non-disturbance buffer shall be allowed if the following criteria are met to prevent owls from abandoning overwintering sites:*

- *An approved biologist monitors the owls for at least 3 days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).*
- *The same approved biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.*
- *If there is any change in owl foraging behavior as a result of construction activities, the approved biologist shall have authority to shut down activities within the 250-foot buffer.*
- *If the owls are gone for at least 1 week, the Third-Party Project Proponent may request approval from the Implementing Entity (i.e., the South Sacramento Conservation Agency) and Wildlife Agencies (i.e., the USFWS and CDFW) that an approved biologist excavate usable burrows and install one-way exclusionary devices to prevent owls from re-occupying the site. After all usable burrows are excavated, the buffer zone shall be removed and construction may continue.*

Monitoring must continue as described above for the non-breeding season as long as the burrow remains active.

- *AMM WBO-4 (Burrowing Owl Construction Monitoring): During construction of Covered Activities, 250-foot construction buffer zones shall be established and maintained around any occupied burrow. An approved biologist shall monitor the site to ensure that buffers are enforced and owls are not disturbed. The approved biologist shall also train construction personnel on avoidance procedures, buffer zones, and protocols in the event that a burrowing owl flies into an active construction zone.*
- *AMM WBO-5 (Burrowing Owl Passive Relocation): Passive relocation is not allowed without the express written approval of the Wildlife Agencies. Passive owl relocation may be allowed on a case-by-case basis on project sites during the non-breeding season (September 1 through January 31) with the written approval of the Wildlife Agencies if the other measures described in this condition preclude work from continuing. Passive*

relocation must be done in accordance with the latest California Department of Fish and Wildlife guidelines for burrowing owl. Passive relocation shall only be proposed if the burrow needing to be removed or with the potential to collapse from construction activities is the result of a Covered Activity. If passive relocation is approved by the Wildlife Agencies, an approved biologist can passively exclude birds from their burrows during the non-breeding season by installing one-way doors in burrow entrances. These doors shall be in place for 48 hours to ensure that owls have left the burrow, and then the biologist shall excavate the burrow to prevent reoccupation. Burrows shall be excavated using hand tools only. During excavation, an escape route shall be maintained at all times. This may include inserting an artificial structure into the burrow to avoid having materials collapse into the burrow and trap owls inside. Other methods of passive relocation, based on best available science, may be approved by the Wildlife Agencies over the 50-year Permit Term.

- *AMM WBO-6 (Burrowing Owl Timing of Maintenance Activities): All activities adjacent to existing or planned Preserves, Preserve Setbacks, or Stream Setback areas shall be seasonally timed, when safety permits, to avoid or minimize adverse effects on occupied burrows.*
- *AMM WBO-7 (Rodent Control): Rodent control shall be allowed only in developed portions of a Covered Activity Project site within western burrowing owl modeled habitat. Where rodent control is allowed, the method of rodent control shall comply with the methods of rodent control discussed in the 4(d) Rule published in the U.S. Fish and Wildlife Service's (2004) final listing rule for tiger salamander.*

Mitigation Measure 3.3-7: *The Project proponent shall implement the following SSHCP AMMs to the satisfaction of the City to avoid direct and indirect effects on covered raptor species. This measure applies to loggerhead shrike (Lanius ludovicianus), northern harrier (Circus cyaneus), and white-tailed kite (Elanus leucurus). The following AMMs do not apply to ferruginous hawk (Buteo regalis), as they do not nest in the Plan Area. The following AMMs also do not apply to Swainson's hawk or burrowing owl, as specific AMMs have been developed for these covered raptor species and are included in separate mitigation measures.*

- *AMM RAPTOR-1 (Raptor Surveys): An approved biologist shall conduct a field investigation to determine if existing or potential nesting sites are present within the Project footprint and adjacent areas within 0.25 mile of the Project footprint. Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. The Project proponent shall map all existing or potential nesting sites and provide these maps to the Local Land Use Permittees (i.e., City of Rancho Cordova) and Implementing Entity (i.e., the South Sacramento Conservation Agency). Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 for the process to conduct and submit survey information.*
- *AMM RAPTOR-2 (Raptor Pre-Construction Surveys): Pre-construction surveys shall be required to determine if active nests are present with a Project footprint or within 0.25 mile of a Project footprint if existing or potential nest sites are found during initial surveys and construction activities shall occur during the raptor breeding season. An approved biologist shall conduct pre-construction surveys within 30 days and 3 days of ground disturbing*

activities within the Project footprint and within 0.25 mile of the Project footprint to determine presence of nesting covered raptor species. Preconstruction surveys shall be conducted during the raptor breeding season. If a nest is present, then RAPTOR-3 and RAPTOR-4 shall be implemented. The approved biologist shall inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn shall notify the Wildlife Agencies.

- *AMM RAPTOR-3 (Raptor Nest/Roost Buffer): If active nests are found within the Project footprint or within 0.25 mile of any Project-related Covered Activity, the Third-Party Project Proponent shall establish a 0.25 mile temporary nest disturbance buffer around the active nest until the young have fledged.*
- *AMM RAPTOR-4 (Raptor Nest/Roost Buffer Monitoring): If Project-related Covered Activities within the temporary nest disturbance buffer are determined to be necessary during the nesting season, then an approved biologist experienced with raptor behavior shall be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist shall be on site daily while construction-related activities are taking place within the disturbance buffer. Work within the temporary nest disturbance buffer can occur with the written permission of the Implementing Entity and Wildlife Agencies. If nesting raptors begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the approved biologist/monitor shall have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies shall meet to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist shall also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a covered raptor species flies into an active construction zone (i.e., outside the buffer zone).*

Mitigation Measure 3.3-8: *The Project proponent shall implement the following measure to avoid or minimize impacts on other protected bird species that may occur on the site:*

- *Prior to any ground disturbance a pre-construction survey for protected bird species shall be completed. This survey shall be conducted in the morning or evening hours within 30 days prior to any construction activities. The entire site shall be surveyed for birds, nests and nesting behavior. Common nesting behavior by birds includes; collecting nesting materials, bringing food items to a nest and vocalizations from young or from adults to attract a mate and to establish or defend a nesting territory. A construction-free buffer of suitable dimensions must be established around any active migratory bird nests (up to 250 feet, depending on the location and species) for the duration of the Project or until it has been determined that the chicks have fledged and are independent of their parents.*

Impact 3.3-5: The Project has the potential to, directly or indirectly, have a substantial adverse effect through habitat modifications or reductions, cause populations to drop below self-sustaining levels, substantially eliminate a community, or substantially reduce the number of, or restrict the range of, an endangered, rare or threatened species, including those considered candidate, sensitive, or special-status, in local or regional plans, policies, regulations, or by the CDFW or USFWS - Mammals (Less than Significant with Mitigation)

Special-status mammals that occur within the 9-quad region for the Project site include: American badger and pallid bat (*Antrozous pallidus*). Additionally, western red bat is a SSHCP Covered Species. These species, among others, are discussed below.

SSHCP COVERED SPECIES

American Badger: American badger is a SSHCP Covered Species and is a listed CDFW species of special concern. This burrowing carnivorous mammal is solitary and very territorial preferring to feed on small mammals, lizards, snakes, insects, and carrion. It has no known natural enemies and inhabits dry, open fields, grasslands, and pastures.

The SSHCP American badger modeled habitat map (SSHCP Figure 3-29) shows that modeled habitat for American badger is present within the Project footprint. There are no CNDDB records for this species within five miles of the Project site. The annual grassland and burrows provide marginal habitat for this species given the lack of sandy soils within the Project site.

Western Red Bat: Western red bat is a SSHCP Covered Species and is a CDFW species of special concern. Western red bat roosts in the foliage of large shrubs and trees in habitats bordering forests, rivers, agricultural areas, and urban areas (Harvey et al. 1999). Roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas with mature trees. Foraging has been noted in habitats such as mature orchards, oak woodland, low elevation conifer forest, and non-native trees in urban and rural residential areas. In addition, this species may forage in habitats adjacent to streams and rivers that do not provide roosting habitat. Water features are a vital habitat component because bats often drink immediately after emergence and water is an important source of concentrated insects.

The SSHCP western red bat modeled habitat map (SSHCP Figure 3-30) shows that modeled habitat for western red bat is present within the Project footprint. The annual grassland, especially in the area surrounding the aquatic habitats, provides foraging habitat for this bat species.

OTHER SPECIES

Special-Status Bats: The Project site is located within the range of several special-status bats, including: Mexican free-tailed bat (*Tadarida brasiliensis),* California mastiff bat (*Eumops perotis californicus*), big brown bat (*Eptesicus fuscus),* Hoary bat (*Lasiurus cinereus),* spotted bat (*Euderma maculatum),* Townsend's big-eared bat (*Corynorhinus townsendii),* pallid bat, western pipistrelle (*Pipistrellus Hesperus),* small-footed myotis/bat (*Myotis ciliolabrum*), long-eared myotis/bat

(*Myotis evotis*), California myotis (*Myotis californicus),* long-legged myotis/bat (*Myotis volans*), Yuma myotis/bat (*Myotis yumanensis*), and little brown bat *(Myotis lucifugus).* These species are not federal or state listed; however, most of them are considered species of special concern and/or are tracked by the CNDDB. Bats are found in a variety of habitats in the region, including buildings, bridges, mines, caves, tree cavities, under bark or rocks, etc. There are no CNDDB records for these species within five miles of the Project site. No bat species were observed roosting during site visits. The annual grassland provides foraging habitat for bat species.

CONCLUSION

The Project site is largely undeveloped and has been previously used for agricultural uses. Although the potential for these special-status mammal species to be found on the Project site is low, the Project site provides marginally suitable habitat to support foraging and movement of these special-status mammals, including bats. This is a **potentially significant** impact.

As previously discussed, the Project proponent intends to obtain coverage for their activities under the City's ITP. Mitigation Measure 3.3-1 provides the requirement to submit a SSHCP permit application package to the City as a request that the incidental take coverage provided by the City's SSHCP ITP be extended to the proposed activities. All relevant SSHCP AMMs will be required and the Project proponent shall be responsible for paying all SSHCP development fees associated with obtaining coverage. A portion of those fees are then used to purchase habitat land as compensatory mitigation for the loss of habitat. The Project also includes a 199.5 acre preserve; however, credit for the preserve is subject to the review and approval of the City.

Mitigation Measures 3.3-9 and 3.3-10 include AMMs that are specifically presented for special-status bats and American badger. It is noted, however, that before construction begins, the SSHCP requires that the Project proponent demonstrate to the City that all necessary AMMs will be fulfilled.

The below mitigation measures would result in compensatory mitigation for the loss of habitat, and would avoid or minimize impacts to protected species to the extent feasible. Implementation of the Project, with the above mitigation measures and consistency with the SSHCP, would reduce the potential for impacts to special-status species to a ***less than significant*** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.3-9: *The Project proponent shall implement the following SSHCP AMMs to the satisfaction of the City to avoid or minimize impacts on protected bat species that may occur on the site:*

- *AMM BAT-1 (Winter Hibernaculum Surveys): An approved biologist shall conduct a field investigation of the Project footprint and adjacent areas within 300 feet of a Project footprint to determine if a potential winter hibernaculum is present, and to identify and map potential hibernaculum sites. Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. If potential hibernaculum sites are found, the Project proponent shall note their locations on Project designs and shall design the Project to avoid all areas within a 300-foot buffer*

around the potential hibernaculum sites. Winter hibernaculum habitat is fully avoided if Project-related activities do not impinge on a 300-foot buffer established by the approved biologist around an existing or potential winter hibernaculum site.

- *AMM BAT-2 (Winter Hibernaculum Pre-Construction Surveys): If the Project proponent elects not to avoid potential winter hibernaculum sites within the Project footprint plus a 300-foot buffer, additional surveys are required. Prior to any ground disturbance related to Covered Activities, an approved biologist shall conduct a preconstruction survey within 3 days of ground-disturbing activities within the Project footprint and 300 feet of the Project footprint to determine the presence of winter hibernaculum sites. Pre-construction surveys shall be conducted during the winter hibernaculum season (November 1 through March 31). If a winter hibernaculum is present, then BAT-3 and BAT-4 shall be implemented. The approved biologist shall inform the City of Rancho Cordova and Implementing Entity (i.e., the South Sacramento Conservation Agency) of species locations, and they in turn shall notify the Wildlife Agencies (i.e., the USFWS and CDFW).*
- *AMM BAT-3 (Winter Hibernaculum Buffer): If active winter hibernaculum sites are found within the Project footprint or within 300 feet of the Project footprint, the Project proponent shall establish a 300-foot temporary disturbance buffer around the active winter hibernaculum site until bats have vacated the hibernaculum and the Implementing Entity and Wildlife Agencies concur.*
- *AMM BAT-4 (Bat Eviction Methods): An approved biologist shall determine if non-maternity and non-hibernaculum day and night roosts are present on the Project site. If necessary, an approved biologist shall use safe eviction methods to remove bats if direct impacts to non-maternity and non-hibernaculum day and night roosts cannot be avoided. If a winter hibernaculum site is present, Covered Activities shall not occur until the hibernaculum is vacated, or, if necessary, safely evicted using methods acceptable to the Wildlife Agencies.*

Mitigation Measure 3.3-10: *The Project proponent shall implement the following measure to avoid or minimize impacts on American badger that may occur on the site:*

- *A qualified biologist shall conduct a pre-construction survey for American badger within 14 days prior to the start of ground disturbance. If no American badgers are observed, then a letter report documenting the results of the survey shall be provided to the Project proponent for their records, and no additional measures are recommended. If construction does not commence within 14 days of the preconstruction survey, or halts for more than 14 days, a new survey is required. The results of the survey shall be submitted to the City's Planning Department.*
- *If American badgers or their dens are found during the survey, additional avoidance measures shall be implemented, including having a qualified biologist conduct a pre-construction survey within 24 hours prior to commencement of construction activities, performing a Worker Awareness Training to all construction workers, and being present on the Project site during grading activities for the purpose of temporarily halting construction activities until the biologist determines that the badger has left the construction footprint*

on its own accord. The results of the survey shall be submitted to the City's Planning Department.

Impact 3.3-6: The Project has the potential to, directly or indirectly, have a substantial adverse effect through habitat modifications or reductions, cause populations to drop below self-sustaining levels, substantially eliminate a community, or substantially reduce the number of, or restrict the range of, an endangered, rare or threatened species, including those considered candidate, sensitive, or special-status, in local or regional plans, policies, regulations, or by the CDFW or USFWS - Plants (Less Than Significant with Mitigation)

The SSHCP includes eight plants that are Covered Species, including: Ahart's dwarf rush (*Juncus leiospermus var. ahartii*), Boggs Lake hedge-hyssop, Dwarf downingia (*Downingia pusilla),* Legenere (*Legenere limosa*), pincushion navarretia (*Navarretia myersii ssp. myersii*), Sacramento Orcutt grass, Sanford's arrowhead (*Sagittaria sanfordii*), and slender Orcutt grass. The CNDDB search identified an additional 15 documented special-status plant species within the 9-quad region for the Project site, including: Bisbee Peak rush-rose (*Crocanthemum suffrutescens*), Brandegee's clarkia (*Clarkia biloba ssp. brandegeeae*), El Dorado bedstraw (*Galium californicum ssp. sierra*), El Dorado County mule ears (*Wyethia reticulata*), hoary navarretia (*Navarretia eriocephala*), Ione buckwheat (*Eriogonum apricum var. apricum*), Ione manzanita (*Arctostaphylos myrtifolia*), Irish Hill buckwheat (*Eriogonum apricum var. prostratum*), Layne's ragwort (*Packera layneae*), Parry's horkelia (*Horkelia parryi*), Pine Hill ceanothus (*Ceanothus roderickii*), Pine Hill flannelbush (*Fremontodendron decumbens*), Red Hills soaproot (*Chlorogalum grandiflorum*), stinkbells (*Fritillaria agrestis*), and Tuolumne button-celery (*Eryngium pinnatisectum*).

The SSHCP modeled habitat maps (SSHCP Figure 3-3 through 3-10) show that modeled habitat for seven of the SSHCP Covered Species (plants) is found on-site, including: Ahart's dwarf rush, Boggs Lake hedge-hyssop, Legenere, pincushion navarretia, Sacramento Orcutt grass, Sanford's arrowhead, and slender Orcutt grass. Many of the species identified within the CNDDB search have no potential to occur. None of these species were observed on the Project site during botanical surveys.

Ground disturbance associated with the Project would result in the temporary disturbance of 0.09 acres and permanent removal of 318.82 acres within SSHCP modeled habitat for eight plants that could potentially occur. Plant surveys did not reveal the presence of any special-status plants within the Project site; however, given the habitat present, there is a future potential for presence during future years. This is a **potentially significant** impact.

As previously discussed, the Project proponent intends to obtain coverage for their activities under the City's ITP. Mitigation Measure 3.3-1 provides the requirement to submit a SSHCP permit application package to the City as a request that the incidental take coverage provided by the City's SSHCP ITP be extended to the proposed activities. All relevant SSHCP AMMs will be required and the Project proponent shall be responsible for paying all SSHCP development fees associated

with obtaining coverage. A portion of those fees are then used to purchase habitat land as compensatory mitigation for the loss of habitat. The Project also includes a 199.5 acre preserve; however, credit for the preserve is subject to the review and approval of the City.

Mitigation Measure 3.3-11 includes AMMs that are specifically presented for special-status plants. It is noted, however, that before construction begins, the SSHCP requires that the Project proponent demonstrate to the City that all necessary AMMs will be fulfilled.

The below Mitigation Measure would result in compensatory mitigation for the loss of habitat, and would avoid or minimize impacts to protected species to the extent feasible. Implementation of the Project, with the below mitigation measure and consistency with the SSHCP, would reduce the potential for impacts to special-status species to a ***less than significant*** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.3-11: *The Project proponent shall implement the following SSHCP AMMs to the satisfaction of the City to avoid or minimize impacts on special-status plants that may occur on the site:*

- *AMM PLANT-1 (Rare Plant Surveys): The Project site shall be surveyed for rare plants, specifically including Ahart's dwarf rush (Juncus leiospermus var. ahartii), Dwarf downingia (Downingia pusilla), pincushion navarretia (Navarretia myersii ssp. myersii), and hoary navarretia (Navarretia eriocephala), by an approved biologist and following the CDFW rare plant survey protocols (CDF 2009) or the most recent CDFW rare plant survey protocols. An approved biologist will conduct the field surveys and will identify and map plant species occurrences according to the protocols.*
- *AMM PLANT-2 (Rare Plant Protection): If a rare plant listed in AMM PLANT-1 is detected within an area proposed to be disturbed by a Covered Activity or is detected within 250 feet of the area proposed to be disturbed by a Covered Activity, the Implementing Entity (i.e., the South Sacramento Conservation Agency) will assure one unprotected occurrence of the species is protected within a SSHCP Preserve before any ground disturbance occurs at the Project site.*
- *AMM ORCUTT-1 (Orcutt Grass Surveys): The Project site will be surveyed for Sacramento and slender Orcutt grass by an approved biologist following CDFW rare plant survey protocols (CDFG 2009) or most recent CDFW guidelines to determine if Sacramento and/or slender Orcutt grass is present. An approved biologist will conduct the field investigation to identify and map occurrences.*
- *AMM ORCUTT-2 (Orcutt Grass Protection): Where known or new Sacramento or slender Orcutt grass occurrences are found, they will be protected within an SSHCP Preserve that is at least 50 acres. The occurrence will be located interior to the Preserve at a distance of no less than 300 feet from the edge of the Preserve boundary. If a Project proponent encounters a previously undiscovered occurrence of Sacramento or slender Orcutt grass on a Covered Activity Project site, the Project proponent will contact the Implementing Entity or City of Rancho Cordova with authority over the Project, who will coordinate with the*

Wildlife Agencies (i.e., the USFWS and CDFW) for written concurrence of avoidance to ensure that the Project does not cause take of the species.

Impact 3.3-7: The Project has the potential to have substantial adverse effect on federally- or state-protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means (Less than Significant with Mitigation)

The USACE has regulatory responsibility for navigable waters as well as "all other waters such as...streams ...wetlands...and natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce" (33 CFR 323.2) under Section 404 of the CWA. A formal jurisdictional determination must be made by the USACE relative to the protected wetlands and jurisdictional waters within the Project site.

As noted previously, the site is characterized by moderate rolling areas and extensive flatlands, with wetlands, vernal pools, and seasonal drainage courses scattered throughout the site. A headwater tributary of Morrison Creek traverses the Project site, entering at the northeast corner and flowing generally to the southwest. As shown in Table 3.3-4, a total of 21.53 acres of jurisdictional aquatic resources have been mapped with the Project site, including: 2.92 acres of depressional seasonal wetlands, 15.04 acres of vernal pools, 1.66 acres of riverine seasonal wetlands, 0.06 acres of riverine seasonal wet swales, 1.54 acres of intermittent drainages, and 0.30 acres of drainage basin outfalls.

TABLE 3.3-4: AQUATIC RESOURCES WITHIN THE PROJECT SITE

AQUATIC RESOURCE TYPE	*AQUATIC RESOURCE CLASSIFICATION*	*AQUATIC RESOURCE SIZE (ACRES)*
Depressional Seasonal Wetland	PEM2B	2.92
Vernal Pool	PEM2C	15.04
Riverine Seasonal Wetland	PEM2B	1.66
Seasonal Wet Swale	R4SB7	0.06
Intermittent Drainage	R4SB	1.54
Detention Basin Outfall	R4SB5	0.30
	Total	**21.53**

NOTE: ACREAGES ARE CALCULATED TO SIX SIGNIFICANT FIGURES AND SUBSEQUENTLY ROUND TO THREE SIGNIFICANT FIGURES. TOTAL ACREAGE IS FURTHER ROUNDED TO TWO SIGNIFICANT FIGURES.
SOURCE: FOOTHILL ASSOCIATES, 2017.

The Project would preserve approximately 199.5 acres as a wetland preserve that would be deeded to a third-party conservation entity for protection via a perpetual conservation easement and would preserve an additional 10.39 acres as protected area/drainage basin lots (Lots G through I) and 15.98 acres as protected area/landscape lots (Lots J through O). The Project applicant would incorporate protections for the preservation of wetland and natural resources within the preserve, including preserve fencing, long-term funding and management of the preserve in perpetuity, and protection of the preserve from drainage and runoff generated from development areas through the construction of several detention basins throughout the site. The

preserve itself is a design measure incorporated into the Project that is intended to avoid and minimize impacts to the jurisdictional features, and other habitat, to the extent practicable, while still seeking to achieve the overall goals and objectives of the development Project. Of the 199.5 acres preserved, 14.8 acres are aquatic features that are potentially jurisdictional. Construction activities located on the balance of the Project site would result in direct permanent impacts to 6.58 acres. Table 3.3-5 presents the impacts to the biological communities located on the Project site. Figure 3.3-4 illustrates the location of the aquatic features.

TABLE 3.3-5: IMPACTS TO BIOLOGICAL COMMUNITIES

HABITAT TYPES	*PROJECT IMPACTS*	*PREVIOUSLY PERMITTED IMPACTS*	*CITY (CIP) IMPACTS*	*SSHCP BUFFER ACREAGE*	*PRESERVED ACREAGE*	*TOTAL ACREAGE*
WETLANDS						
Depressional Seasonal Wetland	1.04	—	—	0.03	1.85	2.92
Vernal Pool	4.75	0.02	0.18	0.12	9.97	15.04
Riverine Seasonal Wetland	0.51	0.01	—	<0.01	1.15	1.66
Intermittent Drainage	—	<0.01	—	—	1.53	1.54
Seasonal Wet Swale	0.06	—	—	—	—	0.06
Detention Basin Outfall	—	—	—	—	0.30	0.30
BIOLOGICAL COMMUNITIES						
Annual Grassland	305.15	—	0.51	13.16	187.16	506.07
Developed/Disturbed	2.43	—	—	—	0.03	2.45
Total	**313.93**	**0.03**	**0.69**	**13.31**	**201.98**	**530.05**

NOTE: ACREAGE MAY NOT ADD ACROSS ROWS OR COLUMNS DUE TO ROUNDING.
SOURCE: FOOTHILL ASSOCIATES, 2017.

These aquatic features are all scattered throughout the 506.07 acres of annual grassland, making up the entirety of the vernal pool complex. While approximately 199.5 acres would be included in the preserve, including 14.8 acres of aquatic habitat, approximately 6.58 acres would be permanently disturbed. This is a **potentially significant** impact.

The Project applicant has made a significant effort to preserve aquatic features (14.8 acres preserved). However, the 6.58 acres of aquatic habitat that would be permanently lost is part of a vernal pool complex which is a sensitive habitat. All feasible mitigation has been incorporated into the Project by design through regulatory permit compliance (i.e. Section 404/401/1600 permits) and adherence to the no net loss requirements (minimum 1:1 replacement).

An important component of the SSHCP Conservation Strategy is an Aquatic Resources Program (ARP). The ARP describes how the SSHCP strategy for the conservation of aquatic habitat in the SSHCP Plan Area will avoid and minimize Covered Activity impacts on the SSHCP Plan Area's aquatic resources, and provide adequate compensatory mitigation for unavoidable Covered Activity impacts. In exchange for conservation of wetlands streams, riparian, and other SSHCP Plan Area aquatic resources, the USACE plans to develop a multi-level permitting strategy under Section 404 of the CWA for future Covered Activities that are consistent with all SSHCP requirements.

The Plan Permittees have requested that the RWQCB use the ARP document to develop a parallel program to issue Water Quality Certifications under Section 401 of the CWA, and a program to issue a Report of Waste Discharge under the California Porter-Cologne Water Quality Control Act.

The Plan Permittees will also request that CDFW use the ARP document to develop a Master Streambed Alteration Agreement under Section 1600 of the California Fish and Game Code for Plan Permittee Covered Activities and to streamline permitting for all Covered Activities described with the SSHCP.

In addition, Covered Activities implemented by Third-Party Project Proponents can avoid the extensive negotiation and processing currently required to obtain CWA 404 permits from the USACE and U.S. USEPA, as well as extensive negotiation and processing currently required to obtain CWA Section 401 approvals from the RWQCB and to issue Reports of Waste Discharge under the California Porter-Cologne Act.

The central goal of compensatory mitigation for Covered Activities authorized under the SSHCP permitting framework is to maintain and improve the aquatic resources diversity, abundance, condition, and ecological connectivity across the Plan Area's differing landscape and geomorphic settings. Under the SSHCP and ARP, there would be no minimum threshold of proposed acreage loss of aquatic resources for compensatory mitigation to be required. That is, all permanent loss of aquatic resources incurred by a project would require compensatory mitigation.

Costs for the aquatic resources compensatory mitigation projects would be covered through the Covered Activity project mitigation fees collected under the SSHCP. Fees under the SSHCP are set at levels that fully offset the cost of compensating for the unavoidable impacts to aquatic resources. The SSHCP includes a fee structure that is distinguished by land cover type. This approach accounts for variations in costs associated with the particular requirements for each land cover type. Each new project would pay fees based on the land cover types affected by the development project and the fee schedule. The Project would be subject to the mitigation fees collected under the SSHCP. Fees collected for compensatory mitigation would be routed to an in-lieu fee program that is consistent with the federal Mitigation Rule (33 CFR Part 332) so that project proponents can satisfy their obligations under Section 404 of the CWA and the SSHCP.

Mitigation Measure 3.3-12 requires the Project to submit a wetland delineation, site plan, and mitigation methods to the City of Rancho Cordova and the South Sacramento Conservation Agency. The Project proponent would also submit a SSHCP permit application package to the City of Rancho Cordova ("Land Use Authority Permittee") as a request that coverage provided by City's SSHCP Aquatic Resources Program be extended to the proposed activities. This measure also requires payment of the mitigation fees, which would be routed to the in-lieu fee program. Mitigation Measure 3.3-13 requires implementation of SSHCP AMMs that will minimize the direct and indirect impacts on the aquatic land covers of the vernal pool ecosystem. The SSHCP AMMs include limiting ground disturbance to the construction footprint; implementing erosion-control BMPs during ground disturbance and siting roads and utilities outside of sensitive areas (BMP-1, BMP-2, BMP-3, ROAD-1, and UTILITY-4); and implementing BMPs that control construction dust (BMP-5), limit construction lighting in adjacent natural habitats (BMP-6), require biological monitoring (BMP-7), require worker awareness training (BMP-8), and implement speed limits on the construction site (BMP-11). Indirect impacts to stream/creek and vernal pool water quality and hydrology would be minimized by AMM LID-1 through LID-3 and EDGE-4 through EDGE-7.

These mitigation measures would ensure that impacts to wetlands would be ***less than significant***.

MITIGATION MEASURE(S)

*Implement **Mitigation Measure 3.5-1** (see Section 3.5, Geology and Soils).*

***Mitigation Measure 3.3-12**: Prior to any construction activities that would disturb a jurisdictional feature, The Project proponent shall submit a wetland delineation, site plan, and mitigation methods to the City of Rancho Cordova and the SSHCP. The Project proponent shall submit a SSHCP permit application package to the City of Rancho Cordova ("Land Use Authority Permittee") as a request that coverage provided by City's SSHCP Aquatic Resources Program be extended to the proposed activities. The City of Rancho Cordova shall review the SSHCP permit application for consistency with all of the SSHCP requirements and provide the South Sacramento Conservation Agency ("Implementing Entity) with a copy of the SSHCP requirements for tracking purposes. The Project proponent shall be responsible for paying all SSHCP development fees associated with obtaining coverage from the City of Rancho Cordova.*

Additionally, the Project applicant shall participate in the SSHCP Aquatic Resources Program (ARP) by paying the applicable mitigation fee for the loss of jurisdictional aquatic features. Costs for the aquatic resources compensatory mitigation projects shall be covered through the Covered Activity project mitigation fees collected under the SSHCP. The SSHCP includes a fee structure that is distinguished by land cover type. This approach accounts for variations in costs associated with the particular requirements for each land cover type. The Project proponent shall pay fees based on the land cover types affected by the development Project and the fee schedule.

***Mitigation Measure 3.3-13**: The Project proponent shall implement the following SSHCP Avoidance and Minimization Measures (AMMs) to the satisfaction of the City to avoid direct and indirect effects of Covered Activities on Aquatic land covers of the Verna Pool Ecosystem:*

- *AMM LID-1 (Stormwater Quality): When the size of a Covered Activity project exceeds the thresholds established by the State Water Resources Control Board (SWRCB) (see the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions, or future SWRCB-approved design manuals applicable to the Plan Area), incorporate stormwater management into site design to satisfy the requirements outlined in the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions. Stormwater management may include groundwater recharge (LID-2) and natural site features (LID-3).*
- *AMM LID-2 (Groundwater Recharge): When siting SSHCP Preserves containing Riparian, Open Water, or Freshwater Marsh SSHCP land cover types, the Implementing Entity (i.e., the South Sacramento Conservation Agency) will prioritize locations that are suitable for groundwater recharge.*
- *AMM LID-3 (Natural Site Features): Incorporate preservation of a site's natural aquatic features (such as creeks and streams) into project design to retain natural hydrologic patterns and to retain habitat that might be used by Covered Species.*
- *AMM BMP-1 (Construction Fencing): Orange construction fencing will be installed to ensure that ground disturbance does not extend beyond the allowed construction footprint*

(i.e., the limit of project construction plus equipment staging areas and access roads). Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will mark the outer boundary of any Preserve Setback or Stream Setback adjacent to or within the project site with orange construction fencing prior to ground disturbance. This fencing will remain in place until project completion, as identified by the Plan Permittee.

- *AMM BMP-2 (Erosion Control): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will install temporary control measures for sediment, stormwater, and pollutant runoff as required by the Plan Permittee to protect water quality and species habitat. Silt fencing or other appropriate sediment control device(s) will be installed downslope of any Covered Activity that disturbs soils.*

  Fiber rolls and seed mixtures used for erosion control will be certified as free of viable noxious weed seed. As discussed in Section 5.4.2, Covered Species Take Avoidance and Minimization Measures, erosion controls installed in or adjacent to Plan Area modeled habitat for giant gartersnake (Thamnophis gigas), western pond turtle (Actinemys marmorata), California tiger salamander (California tiger salamander), or western spadefoot (see Chapter 3) must be of appropriate design and materials that will not entrap the species (e.g., not contain mesh netting). Regular monitoring and maintenance of the project's erosion control measures will be conducted until project completion to ensure effective operation of erosion control measures.
- *AMM BMP-3 (Equipment Storage and Fueling): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will ensure that equipment storage and staging will occur in the development footprint only (not sited in any existing on-site Preserve, planned on-site Preserve, Preserve Setback, Stream Setback, or aquatic land cover type). Fuel storage and equipment fueling will occur away from waterways, stream channels, stream banks, and other environmentally sensitive areas within the development footprint.*

  However, certain equipment storage and fueling activities can be allowed on Preserves within habitat re-establishment/establishment sites (refer to Section 5.2.7) if no location outside of the site is available. If a Covered Activity results in a spill of fuel, hydraulic fluid, lubricants, or other petroleum products, the spill will be absorbed and waste disposed of in a manner to prevent pollutants from entering a waterway, Preserve, Preserve Setback, or Stream Setback.
- *AMM BMP-4 (Erodible Materials): Plan Permittees and Third-Party Project Proponents implementing Covered Activities must not deposit erodible materials into waterways. Vegetation clippings, brush, loose soils, or other debris material will not be stockpiled within stream channels or on adjacent banks. Erodible material must be disposed of such that it cannot enter a waterway, Preserve, Preserve Setback, Stream Setback, or aquatic land cover type. If water and sludge must be pumped from a subdrain or other structure, the material will be conveyed to a temporary settling basin to prevent sediment from entering a waterway.*

- *AMM BMP-5 (Dust Control): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will water active construction sites regularly, if warranted, to avoid or minimize impacts from construction dust on adjacent vegetation and wildlife habitats. No surface water will be used from aquatic land covers; water will be obtained from a municipal source or existing groundwater well.*
- *AMM BMP-6 (Construction Lighting): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will direct all temporary construction lighting (e.g., lighting used for security or nighttime equipment maintenance) away from adjacent natural habitats, and particularly Riparian and Wetland habitats and wildlife movement areas.*
- *AMM BMP-7 (Biological Monitor): If a Covered Activity includes ground disturbance within Covered Species modeled habitat, an approved biologist will be on site during the period of ground disturbance, and may need to be on site during other construction activities depending on the Covered Species affected. After ground-disturbing project activities are complete, the approved biologist will train an individual to act as the on-site construction monitor for the remainder of construction, with the concurrence of the Permitting Agencies. The on-site monitor will attend the training described in BMP-8. The approved biologist and the on-site monitor will have oversight over implementation of Avoidance and Minimization Measures, and will have the authority to stop activities if any of the requirements associated with those measures are not met. If the monitor requests that work be stopped, the Wildlife Agencies Agencies (i.e., the USFWS and CDFW) will be notified within one working day by email. The approved biologist and/or on-site monitor will record all observations of listed species on California Natural Diversity Database field sheets and submit them to the California Department of Fish and Wildlife. The approved biologist or on-site monitor will be the contact source for any employee or contractor who might inadvertently kill or injure a Covered Species or who finds a dead, injured or entrapped individual. The approved biologist and on-site monitor's names and telephone numbers will be provided to the Wildlife Agencies prior to the initiation of ground-disturbing activities. Refer to species-specific measures for details on requirements for biological monitors.*
- *AMM BMP-11 (Speed Limit): Project-related vehicles will observe the posted speed limits on paved roads and a 10-mile-per-hour speed limit on unpaved roads and during travel in project areas. Construction crews will be given weekly tailgate instruction to travel only on designated and marked existing, cross-country, and project-only roads.*
- *AMM ROAD-1 (Road Project Location): Road projects will be located in the least environmentally sensitive area to avoid, to the maximum extent practicable, impacts on Covered Species, Covered Species habitat, and waters of the United States. Road project alignments will follow existing roads, road easements, and rights-of-way, or be sited in disturbed areas to minimize habitat loss and additional habitat fragmentation.*
- *AMM UTILITY-4 (Siting of Entry and Exit Location): The entry and exit locations for the trenchless construction method (see Utility-3) will be sited to avoid impacts to vernal pools and Riparian Woodland, and to avoid direct take of SSHCP Covered Species.*

- *AMM EDGE-4 (Locate Stormwater Control Outside Preserves): Roads, sidewalks, and other impermeable surfaces of Urban Development Covered Activities adjacent to existing or planned Preserves will slope away from Preserves and Preserve Setbacks or intercept drainage with swales or curbs and gutters to preclude drainage from entering Preserves and Preserve Setbacks. Stormwater flows must be directed away from Preserves and Preserve Setbacks and directed into stormwater control facilities inside the development (outside Preserves and Preserve Setbacks) (see EDGE-6 for exception to EDGE-4 in certain SSHCP Linkage Preserves).*
- *AMM EDGE-5 (Stormwater Control in Preserve Setbacks): If trails are established in any Preserve Setback in compliance with EDGE-3, the trail must be sloped away from the Preserve, and rainwater leaving the trail surface must flow into an adjacent low-velocity bio-retention swale or cell to keep rainwater runoff and trail contaminants from entering the Preserve. Low-velocity bio-retention swales or cells are typically small linear features placed on one or both sides of a trail. As required by EDGE-3, trails and their adjacent bio-retention swales or cells must be located on the side of the Preserve Setback nearest development.*
- *AMM EDGE-6 (Detention Basins in Linkage Preserves): Because planned SSHCP Linkage Preserves L1, L2, L4, L7, L8, L9, and L10 (see Section 7.5) surround natural creeks or streams that must receive stormwater from planned adjacent Urban Development Covered Activities, a limited number of stormwater detention basins will be allowed on those Linkage Preserves. Detention basins within Linkage Preserves (see Section 5.2.7) will be designed and constructed with fill material to build up the perimeter of the detention basin so as not to impact the soil restrictive layer (duripan or hardpan) and function of the soil perched aquifer. Detention basins within Linkage Preserves will capture stormwater flows and runoff, and will discharge water to the stream/creek or percolate collected water to the soil perched aquifer. Detention basin structures that collect stormwater entering the basin or convey stormwater leaving the basin must be designed to avoid and minimize effects to Covered Species habitat in the Linkage Preserve.*
- *AMM EDGE-7 (Hardpan/Duripan Protection): To protect the soil perched aquifer and the micro-watersheds supporting existing vernal pool hydrology, activities that have the potential to cut into, disrupt, or remove the soil's restrictive layer (hardpan or duripan) will not occur within Preserves or Preserve Setbacks. However, in certain circumstances, the Covered Activities defined in Section 5.2.6, Covered Activities in Stream Setbacks in the UDA, and Section 5.2.8, Covered Activities in the Laguna Creek Wildlife Corridor of the Preserve System, may result in punctures or other minor disruptions of the soil hardpan or duripan if approved by the Implementing Entity and the Technical Advisory Committee according to the process described in Chapter 9 of the SSHCP. If a Covered Activity on a Preserve or Preserve Setback results in a puncture or other disruption to the soil hardpan or duripan, the puncture will be sealed using bentonite clay or other material that maintains the functionality of the soil's restrictive layer and associated perched aquifer.*

Impact 3.3-8: The Project has the potential to have substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service (Less than Significant)

The CNDDB record search revealed documented occurrences of two sensitive habitats, Northern Hardpan Vernal Pool and Valley Needlegrass Grassland, within the 9-quad region for the Project site. The CNDDB does not contain records for Valley Needlegrass Grassland on the Project site, and this native plant community was not observed during the field surveys. However, Northern Hardpan Vernal Pool is mapped within the Project site, and it was verified to be present during the field surveys. The Project site contains approximately 15.04 acres of vernal pools within a grassland vernal pool complex. There are other aquatic features such as Depressional Seasonal Wetland (2.92 acres), Riverine Seasonal Wetland (1.66 acres), Intermittent Drainage (1.54 acres), and Seasonal Wet Swale (0.06 acres). These aquatic features are all scattered throughout the 506.07 acres of annual grassland making up the entirety of the vernal pool complex.

Figure 3.3-4 illustrates the location of the aquatic features, including where the vernal pools are scattered. The impacts to vernal pools are summarized in Table 3.3-4 and shown in Figure 3.3-5. As previously discussed, the Project would preserve approximately 199.5 acres as a wetland preserve that would be protected in perpetuity. The Project applicant would incorporate protections for the preservation of wetland and natural resources within the preserve, including preserve fencing, long-term funding and management of the preserve in perpetuity, and protection of the preserve from drainage and runoff generated from development areas through the construction of several detention basins throughout the site. The preserve itself is a design measure incorporated into the Project that is intended to avoid and minimize impacts to the vernal pool complex to the extent practicable, while still seeking to achieve the overall goals and objectives of the development Project. Even though approximately 9.97 acres of the vernal pool complex is preserved in perpetuity through this design, 4.75 acres of vernal pool complex will be permanently removed.

All feasible mitigation has been incorporated into the Project by design, through regulatory permit compliance (i.e. Section 404/401/1600 permits), participation in the SSHCP, and through mitigation measures presented earlier in this chapter. Therefore, the permanent loss of the sensitive habitat is considered a ***less than significant*** impact.

Impact 3.3-9: The Project has the potential to interfere substantially with the movement of native fish or wildlife species or with established wildlife corridors, or impede the use of native wildlife nursery sites (Less than Significant with Mitigation)

Wildlife movement includes migration (i.e., usually movement one way per season), inter-population movement (i.e., long-term dispersal and genetic flow), and small travel pathways (i.e., daily movement within an animal's territory). While small travel pathways usually facilitate movement for daily home range activities, such as foraging or escape from predators, they also provide connection between outlying populations and the main populations, permitting an

increase in gene flow among populations. These habitat linkages can extend for miles and occur on a large scale throughout the greater region. Habitat linkages facilitate movement between populations located in discrete locales and populations located within larger habitat areas.

Impacts from development, such as habitat fragmentation and/or isolation, and the creation of impassable barriers can cause a significant impact to wildlife corridors. Depending on the organism and its needs, movement corridors can either be continuous or discontinuous patches of suitable habitat. Preserving expanses of open space that are connected may enable species utilizing these areas as foraging or breeding habitat to persist.

The record search did not reveal any documented wildlife corridors or wildlife nursery sites on or adjacent to the Project site. Furthermore, the field surveys did not reveal any wildlife corridors or wildlife nursery sites on or adjacent to the Project site. The intermittent drainage that traverse the site (1.54 acres) provides some aquatic linkage and potential movement corridors for wildlife. The Project would temporarily impact 0.01 acres of the drainage, but would be restored after construction. The balance of 1.53 acres would be preserved. With the implementation of mitigation measures that require restoration of temporary impacts to all jurisdictional facilities, this impact would be reduced to a ***less than significant*** level.

Impact 3.3-10: The Project may result in conflicts with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (Less than Significant)

The City establishes the basic standards and measures for the preservation and protection of trees within the community in Chapter 19.12, Preservation and Protection of Private Trees, of the Municipal Code. There are no trees located on the Project site. Therefore, the Project would not conflict with the City's Preservation and Protection of Private Trees Ordinance.

The City establishes impact permit and delineation requirements, avoidance, minimization, and compensation standards, and other provisions pertaining to aquatic resources in Chapter 16.94, Aquatic Resources Protection, of the Municipal Code. Pursuant to Section 16.94.040 of the Code, because the Project would permanently and/or temporarily impact aquatic resources on the Project site, an aquatic resource impact permit would be required for any proposed development activities. All aquatic resource impact permits require approval of a compensatory mitigation plan in accordance with the provisions of Section 16.94.040(J) section unless the compensatory mitigation plan requirement is waived under the provisions of Section 16.94.040(J)(3). Further, the Project would be subject to the standards, pre-permit consultation requirements, and compensatory mitigation plan. The compensatory mitigation plan consists of two parts: baseline information for the site and a conceptual compensatory mitigation plan. If off-site aquatic resource compensatory mitigation is proposed, baseline information for both the Project site and mitigation site is required. Further, the Project would be subject to the setback standards set forth in Section 16.94.080, which are consistent with the requirements of Chapter 5 of the SSHCP.

Compliance with Chapter 16.94 of the Municipal Code would ensure that this impact is ***less than significant***.

Impact 3.3-11: The Project may result in conflicts with an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan (Less than Significant)

The SSHCP is a regional effort that will provide development and infrastructure projects with streamlined, predictable federal and state permitting processes while creating a Preserve System to protect habitat, open space, and agricultural lands. The SSHCP allows project proponents within the Plan Area to simplify and expedite the state and federal ESA permitting process. In addition to streamlining the ESA permitting processes, a separate but parallel multi-tiered permitting program has been developed to streamline CWA Section 404 and 401 permitting process and a Master Streambed Alternation Agreement has been prepared to address Section 1602 of the California Fish and Game Code.

The SSHCP allows the City of Rancho Cordova, City of Galt, Sacramento County, Sacramento County Water Agency, and the Southeast Connector Joint Powers Authority (collectively referred to as the Plan Permittees) to receive an ITP for activities and projects they conduct. In addition, the three local Land Use Authority Permittees (the County, Galt, and Rancho Cordova) have the ability to extend incidental take coverage provided by the SSHCP ITPs to activities and projects implemented by Third-Party Project Proponents that are under the jurisdiction of that Land Use Authority Permittee. This will allow Third-Party Project Proponents to avoid the extensive negotiation and processing currently required to obtain individual project permits under the CESA from the CDFW and project ESA compliance from the USFWS. The SSHCP was adopted by the Rancho Cordova City Council in October 2018.

As required by the federal ESA (Section 10(a)(2)(A)(ii)) and Fish and Game Code Section 2081, the SSHCP includes measures to avoid and minimize take of Covered Species. All relevant SSHCP AMMs will be required.

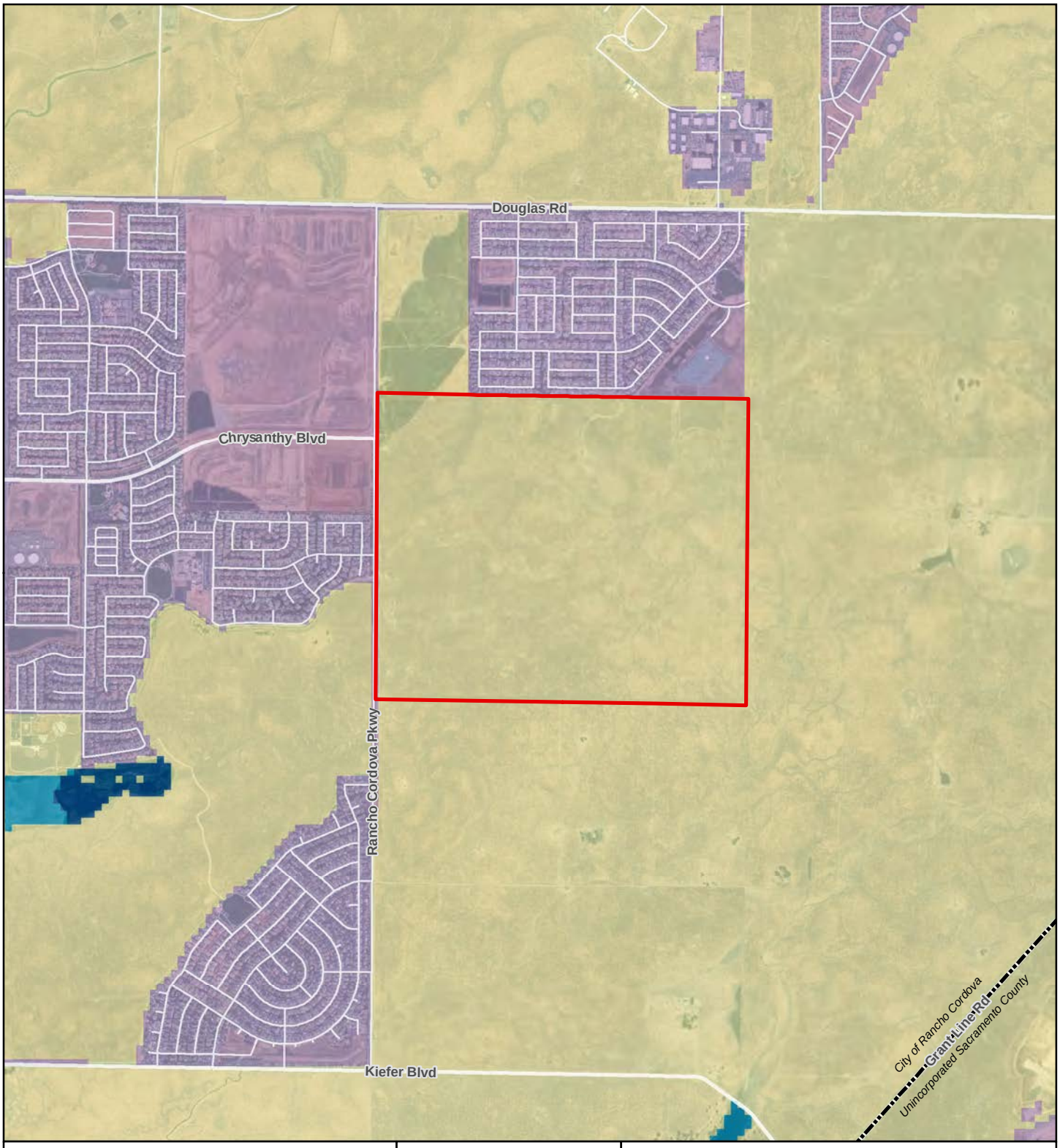
Mitigation Measure 3.3-1 requires that the Project proponent submit a SSHCP permit application package to the City as a request that the incidental take coverage provided by the City's SSHCP ITP be extended to the proposed activities. The City must review the SSHCP permit application for consistency with all of the SSHCP requirements and provide the South Sacramento Conservation Agency ("Implementing Entity) with a copy of the SSHCP requirements for tracking purposes. The Project proponent shall be responsible for paying all SSHCP development fees associated with obtaining coverage from the City. A portion of those fees are then used to purchase habitat land as compensatory mitigation for the loss of habitat. Any proposal to provide land in fee title or provide a conservation easement in lieu of paying all or part of the required SSHCP development fees, shall include a consistency analysis in the application that sufficiently shows that the proposal is consistent with the SSHCP Conservation Strategy. Because the Project includes a 199.5-acre wetland preserve, they will be required to include a consistency analysis in their application in order to receive credit for the preserve. This Draft EIR addresses land cover types, wetland impacts, and Covered Species and other protected species habitat present on the Project site. As previously described, all relevant SSHCP AMMs will be required of the Project. The wetland

preserve has been designed to implement the requirements of the SSHCP, including provision of a 50-foot transition area buffering the preserve from areas proposed for development.

Additional AMMs are specifically presented throughout this document for specific species. It is noted, however, that before construction begins, the SSHCP requires that the Project proponent demonstrate to the City that all necessary AMMs will be fulfilled and that the Project design, including preserve features, are consistent with the SSHCP.

The Project proponent intends to obtain coverage for their proposed activities. Implementation of the Project, with the above mitigation measures and consistency with the SSHCP would ensure that there is not conflict. Implementation of the Project would have a ***less than significant*** impact relative to this topic.

This page left intentionally blank.



Legend

- Project Location (528.48 acres)
- Rancho Cordova City Boundary

Cover Type (WHR)

- Annual Grassland (528.48 acres on site)
- Fresh Emergent Wetland
- Riverine
- Urban

Data sources: Sacramento County GIS; ArcGIS Online World Imagery Map Service. FRAP Vegetation (FVEG15_1). Map date: July 16, 2018.

N

0 600 1,200

Feet

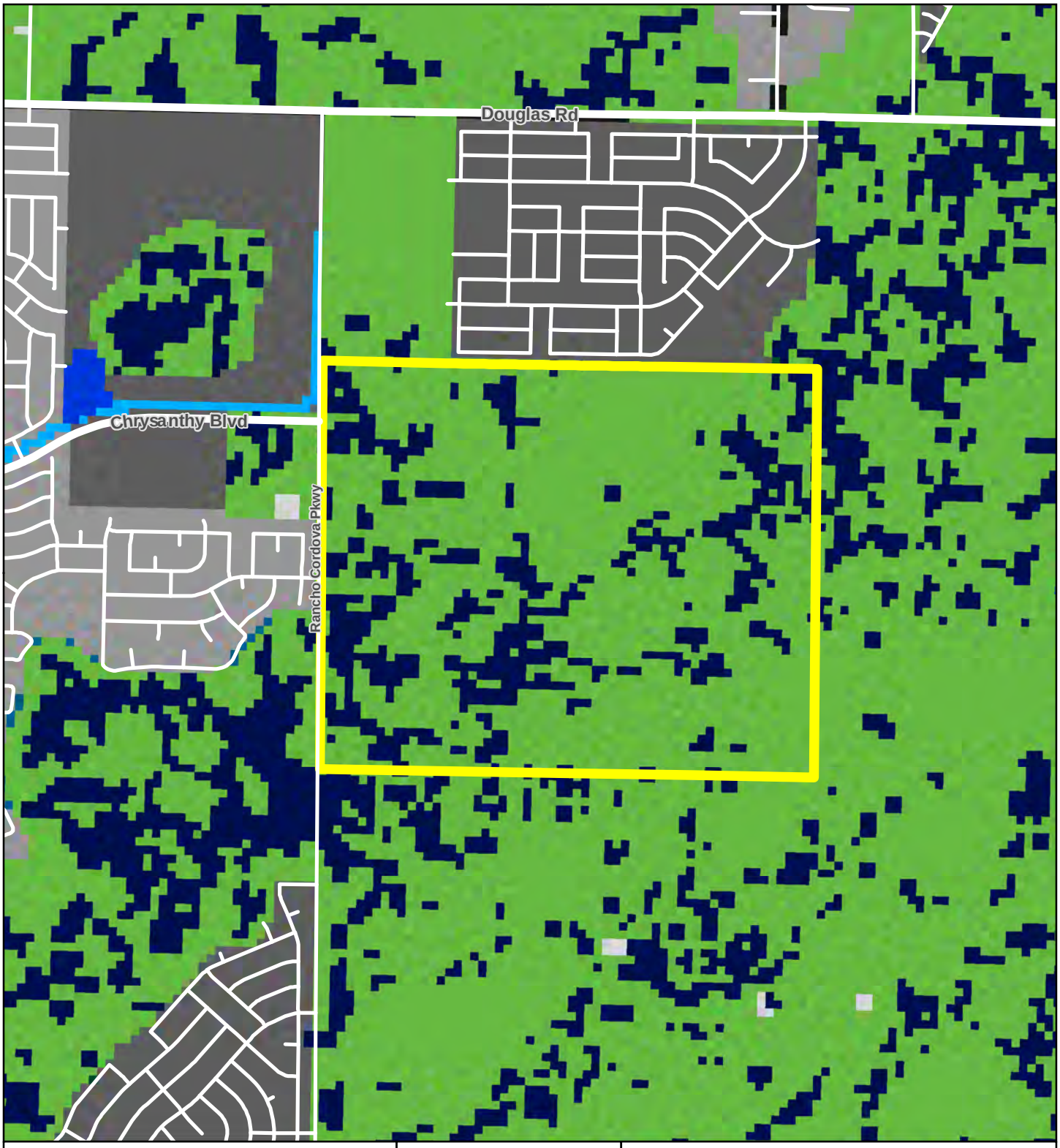
1:24,000

THE RANCH
SACRAMENTO COUNTY, CALIFORNIA

Figure 3.3-1. Cover Types

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.



Legend

- Project Location (528.48 acres)

Land Cover Types (SSHCP)

- Valley Grassland
- Vernal Pool
- Open Water
- Streams/Creeks
- Disturbed
- High Density Development

Data sources: Sacramento County GIS; South Sacramento Habitat Conservation Plan, Figure 3-1 Plan Area Land Cover Types, 2014. Map date: June 20, 2019.

N

0 600 1,200

Feet

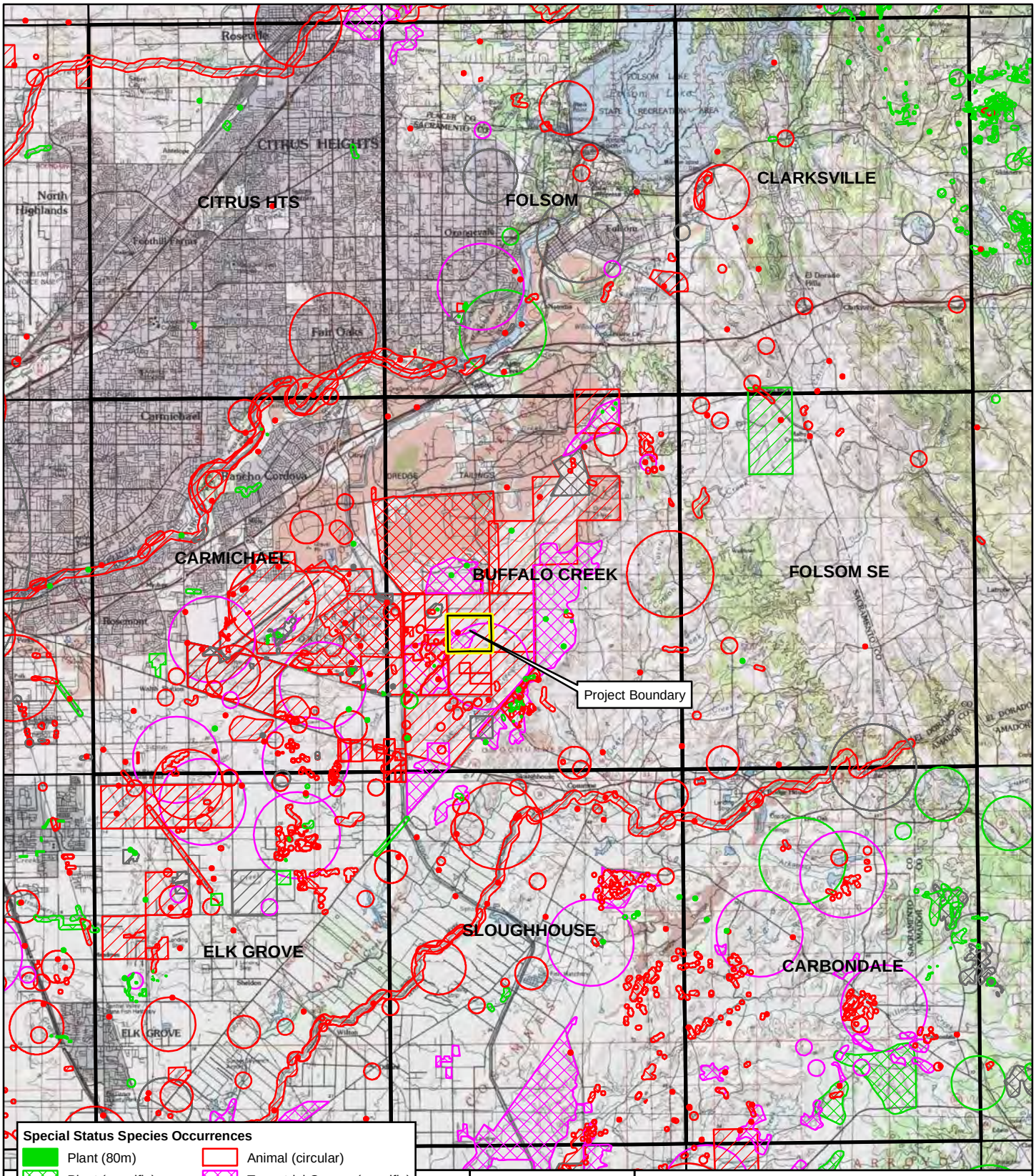
1:18,000

THE RANCH
SACRAMENTO COUNTY, CALIFORNIA

Figure 3.3-2.
South Sacramento Habitat Conservation Plan (SSHCP) Land Cover Types

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.



CNDDB version 07/2018. Please Note: the occurrences shown on this map represent the known locations of the species listed here as of the date of this version. There may be additional occurrences or additional species within this area which have not been surveyed and/or mapped. Lack of information in the CNDDB about a species or an area can never be used as proof that no special status species occur in an area. Basemap: ArcGIS Online Topographic Map Service. Map date: July 16, 2018.

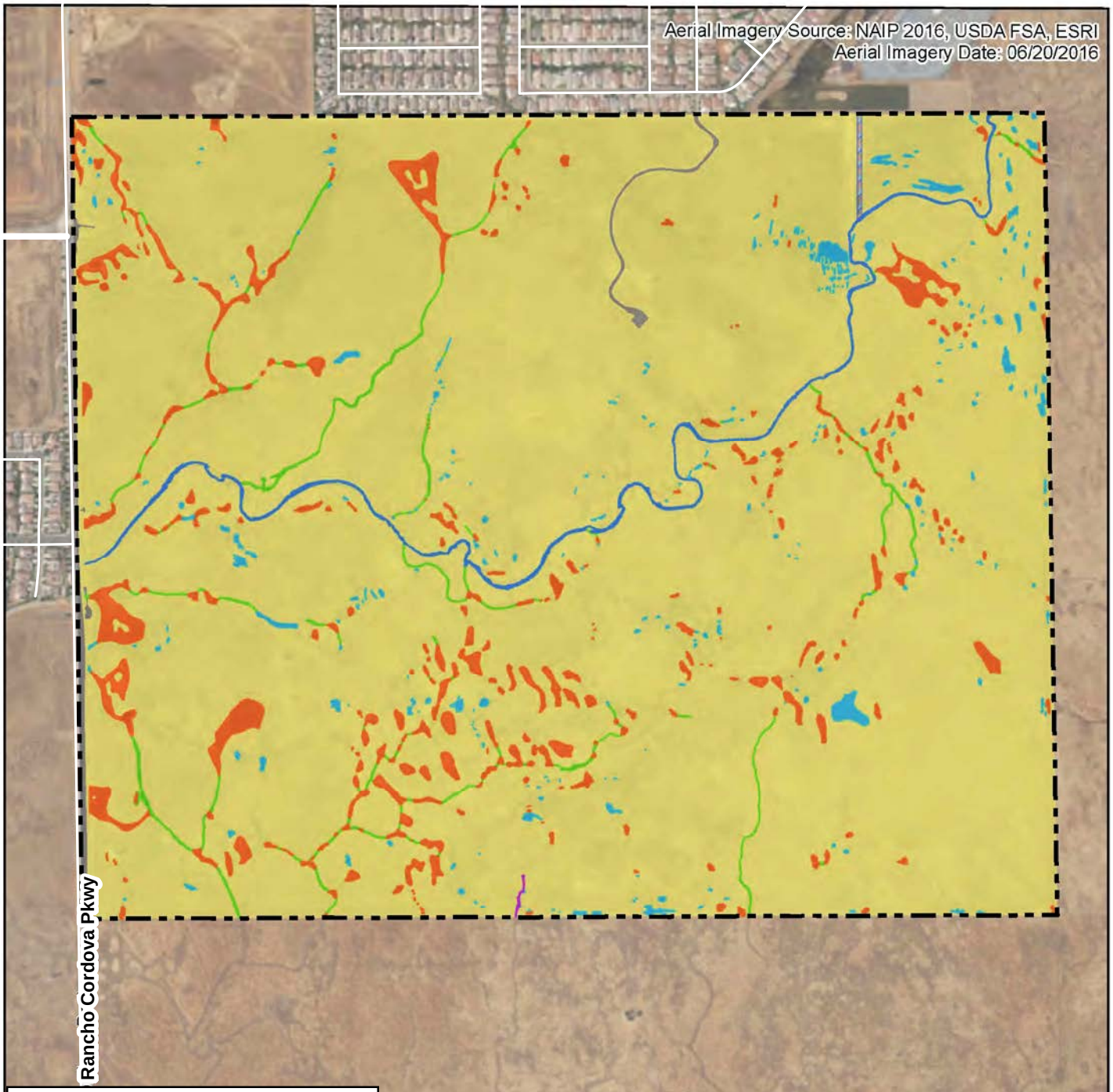
THE RANCH
SACRAMENTO COUNTY, CALIFORNIA

Figure 3.3-3: California Natural Diversity Database

9-Quad Search

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.



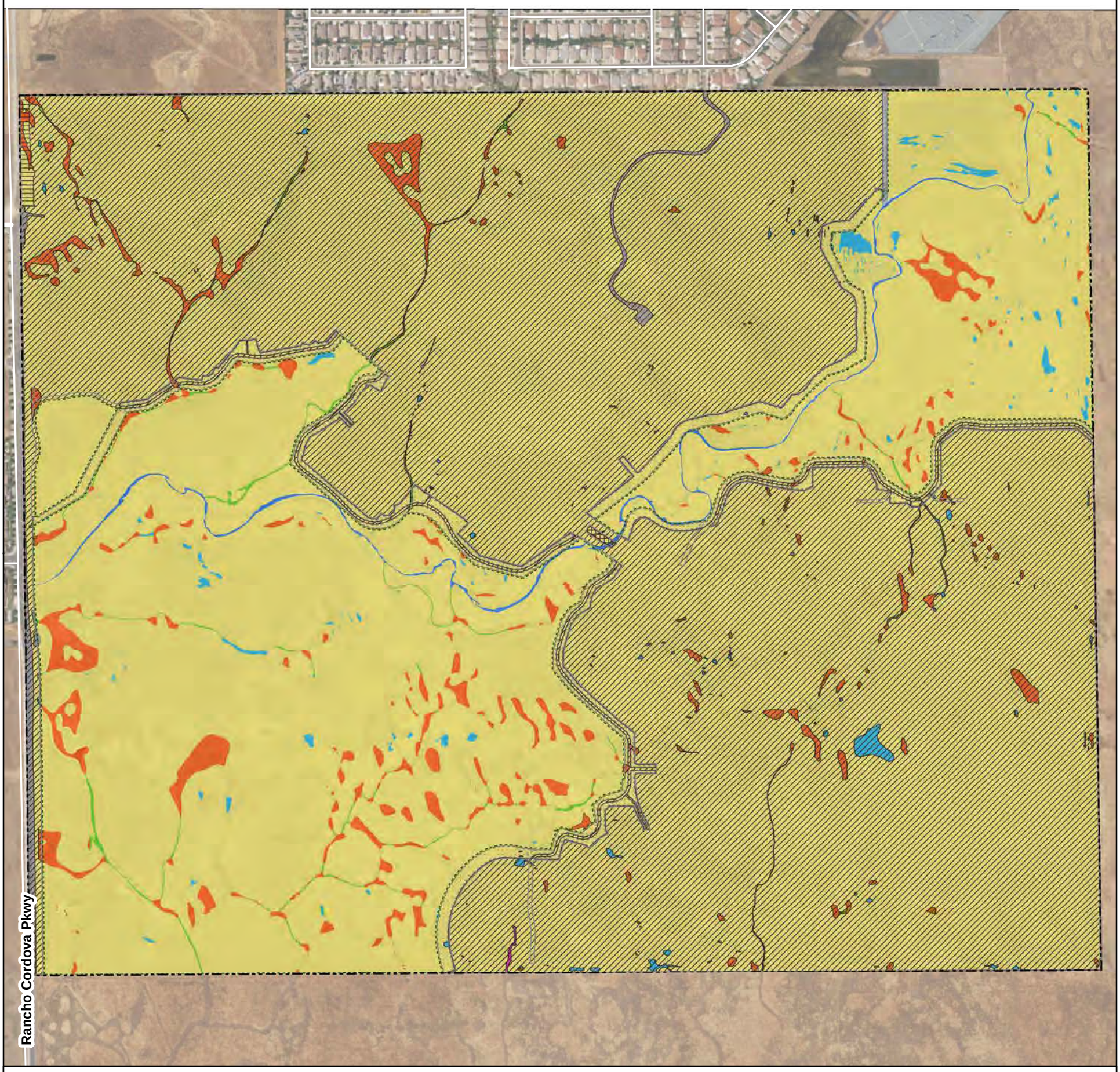
Data source: Foothill Associates. Map date: July 16, 2018.

THE RANCH
SACRAMENTO COUNTY, CALIFORNIA

Figure 3.3-4. Biological Communities and Aquatic Resources

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.



Habitat Types	Preserved (Acres)	Buffer Area (Acres)	Project Impact (Acres)	City Capital Improvement Projects Impact (Acres)	Past Impact (Acres)	Temp. Impact (Acres)	Total (Acres)
Wetlands:							
Depressional Seasonal Wetland	1.85	0.03	1.04				2.92
Vernal Pool	9.97	0.12	4.75	0.18	0.02		15.04
Riverine Seasonal Wetland	1.15	<0.01	0.51		0.01		1.66
Intermittent Drainage	1.53				<0.01	0.01	1.54
Seasonal Wet Swale			0.06				0.06
Detention Basin Outfall	0.30						0.30
Subtotal:	14.80	0.15	6.36	0.18	0.03	0.01	21.53
Biological Communities:							
Annual Grassland	187.16	13.16	305.15	0.51		0.09	506.07
Developed/Disturbed	0.03	0.00	2.43				2.45
Subtotal:	187.18	13.16	307.57	0.51		0.09	508.52
Total	**201.98**	**13.31**	**313.93**	**0.69**	**0.03**	**0.10**	**530.05**

Other Features

- Development Footprint (+/- 315 acres)
- Preserve buffer (+/-13 acres)
- Preserve Boundary (+/-202 acres)
- Project Boundary (+/-530 acres)

N

0 300 600

Feet

1:6,600

Data source: Foothill Associates. Map date: July 16, 2018.

THE RANCH
SACRAMENTO COUNTY, CALIFORNIA

Figure 3.3-5. Impacts to Biological Communities and Aquatic Resources

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.

This section provides a discussion of the prehistoric period background, ethnographic background, historic period background, known cultural resources in the region, the regulatory setting, an impact analysis, and mitigation measures. This section is based in part on the following:

- *Rancho Cordova General Plan* (City of Rancho Cordova, Adopted June 26, 2006);
- *Rancho Cordova General Plan Draft Environmental Impact Report* (City of Rancho Cordova, March 2006);
- *The Ranch Updated Cultural Resources Inventory and Evaluation, Rancho Cordova, Sacramento County, California* (Windmiller Consulting, Inc., June 2018); and
- *Determination of Eligibility and Effect for the Jaeger 530 Project Area, Sacramento County, California* (Peak & Associates, Inc., 2005).

The analysis contained in this section is intended to be at a Project-level, and covers impacts associated with development of the entire site, with the exception of areas designated for protection as described in Chapter 2.0, Project Description, to an urban use.

Comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic from the Native American Heritage Commission (NAHC, July 30, 2019). Each of the comments related to this topic are addressed within this section.

3.4.1 ENVIRONMENTAL SETTING

The environmental setting of the region and Project site is based primarily on the Determination of Eligibility and Effect for the Jaeger 530 Project Area, Sacramento County, California prepared for the Project site by Peak & Associates.

PREHISTORY

Archaeological work in the Central Valley area during the 1920s and 1930s led to the development of the first cultural chronology for Central California. The chronology identified three archaeological cultures, which were named Early, Transitional, and Late. Subsequently the three cultural groups were subsumed into three time periods, designated the Early, Middle, and Late Horizons.

The Windmiller Pattern is representative of the Early Horizon in the Rancho Cordova area. The Early Horizon is highlighted by: large, heavy, stemmed and leaf-shaped projectile points made of a variety of materials; charmstones; shell beads and ornaments; trident fish spears; flat slab millingstones; small numbers of mortars; and ventrally extended burials oriented toward the west. The Windmiller Pattern probably emphasized hunting and fishing, with seed collecting as a supplement to the diet. The Windmiller Pattern dates from 4,500-2,500 Before Present (B.P.).

The Cosumnes Culture is representative of the Middle Horizon in the Rancho Cordova area. The Middle Horizon is highlighted by: large, heavy, lanceolate concave base projectile points made of a variety of materials; charmstones; shell beads and ornaments; cobble mortars and evidence of wooden mortars; numerous bone tools and bone ornaments; and tightly flexed burials with

variable orientation and red ochre staining. Middle Horizon cultures are generally quite different from the Windmiller Pattern, but do continue to exhibit some of the characteristics of Windmiller such as similar projectile point forms. The similarities in projectile point forms may be indicative of cultural continuity and/or functional and adaptational success of particular forms. The Middle Horizon dates from 2,500 B.P.-A.D. 500.

The Hotchkiss Culture is representative of the Late Horizon in the Rancho Cordova area. The Late Horizon primarily represents both local innovation and the blending of new cultural traits introduced into the Central Valley primarily from the north. It is distinguished by intensive fishing, extensive use of acorns, elaborate ceremonialism, social stratification, and cremation of the dead. The Hotchkiss Culture dates from A.D. 500-to Euroamerican contact.

ETHNOGRAPHY

A large population of Native Americans speaking more than 100 different languages and occupying a variety of ecological settings inhabited California prior to the arrival of Euroamericans. Peak and Associates identified that Rancho Cordova and the surrounding area are in Valley Nisenan territory. The *Ranch Updated Cultural Resources Inventory and Evaluation* prepared by Windmiller Consulting in 2018 identifies that the Project site lies almost midway between the former homeland of the Maiduan-speaking Nisenan along the American River and the *Amuchamne* tribelet of Miwok speakers along the Cosumnes River.

The basic social and economic group of the Nisenan was the family or household unit, with the nuclear and/or extended family forming a corporate unit. Among the Nisenan these groups combined to form tribelets, which were their largest sociopolitical unit. Each tribelet had a chief or headman, and tribelet populations were as large as 500 persons living in permanent villages that were usually located on raised areas to avoid flooding.

Valley Nisenan used a variety of utilitarian stone tools, with obsidian being a highly valued material for tool manufacture. Other tools and weapons were made of bone, wood, and plant materials including stirring sticks, mush paddles, pipes, hide preparation equipment, and baskets. Fishing formed a large component of Valley Nisenan subsistence activity. Consequently, they used an extensive assemblage of fishing-related implements including: spears; cordage lines with bone fishhooks; harpoons with detachable points; dams for stream diversion; nets of cordage and basketry; weirs; and an array of fish traps. Other food processing equipment included bedrock mortars and pestles for grinding acorns, buckeyes, pine nuts, seeds, berries, and meat. Valley Nisenan also fostered trading relationships with surrounding groups for commodities such as salt, marine shells, and basketry.

The Plains Miwok were identified as a distinct language group as early as 1806. Lineage was the most important political and economic unit, with lineages based on the male line of descent. Miwok lineages were associated with a specific place, such as a tribelet's permanent settlement. The tribelet was the largest sociopolitical group. The permanent settlement usually included an assembly house, which was often a large, circular, semi-subterranean earth-covered lodge,

housing including pole and thatch structures, a sweathouse, and other structures. Miwok-speaking people were hunter-fisher-gatherers and the major staple, acorns, were gathered in the fall.

The *Amuchamne* tribelet was the northernmost tribelet on the Cosumnes river drainage within the Sacramento Valley and was the only organized Cosumnes River Miwok village to survive the gold rush. Sometime between 1850 and 1870, the people of Amuchamne moved their village to the outskirts of Elk Grove.

HISTORIC PERIOD

Spanish exploration of the Central Valley dates to the late 1700s, but exploration of the Northern section of the Central Valley and contact with its Native American population did not begin until the early 1800s. At this time, the attention of Spanish missionaries shifted away from the coast and its dwindling Native American population, to the conversion and missionization of interior populations. This time period also marks the beginning of the decline of Native American populations due to Euroamerican diseases and the relocation of many groups to missions, which resulted in not only the loss of life, but also the loss of Native American traditional culture.

The second quarter of the nineteenth century encompasses the Mexican Period (ca. 1821-1848) in California. This period is an outgrowth of the Mexican Revolution, and its accompanying social and political views affected the mission system across California. In 1833, the missions were secularized and their lands divided among the Californians as land grants called ranchos. These ranchos, such as the 35,000-acre Rancho Rio de los Americanos, part of which is located within the Planning Area, facilitated the growth of a semi-aristocratic group that controlled the large ranchos.

During the middle of the 19th century trails were being blazed across the plains and mountains facilitating the westward migration of Euroamericans. Groups such as the 1841 Bartleson-Bidwell party and the 1844 Stevens-Murphy party that traveled to California typify these early immigrants. The commencement of the Mexican-American war in 1846 also affected the exploration and development of California, including the identification of new trails across the Sierra Nevada.

The Rancho Rio de los Americanos was originally granted to William Leidesdorff and subsequently sold to Joseph Folsom. Neither of these individuals, however, developed the rancho, and it does not reflect patterns of rancho development and use that are typical in other parts of California. Regardless, the discovery of gold at Sutter's Mill in Coloma in 1848 caused a dramatic alteration of both Native American and Euroamerican cultural patterns in California. Once news of the discovery of gold spread, a flood of Euroamericans began to enter the region, and gravitated to the area of the "Mother Lode". Initially, the Euroamerican population grew slowly, but soon exploded as the presence of large deposits of gold was confirmed. The population of California quickly swelled from an estimated 4,000 Euroamericans in 1848 to 500,000 in 1850. This large influx of immigrants had a negative effect on Native American cultures, and marks the beginning of a relatively rapid decline of Native American populations and culture.

The Project site was purchased by George F. Jaeger in 1880 and was used by his family to raise hay and livestock.

The second half of the nineteenth century witnessed an ongoing and growing immigration of Euroamericans into the area, an influx also accompanied by regional cultural and economic changes. These changes are highlighted by the development of the Rancho Cordova area associated with expanding business opportunities related to gold mining, agriculture, and/or ranching.

PROJECT SITE

Setting

The 530-acre Project site is currently vacant and has been previously used for agricultural uses (cattle grazing). The topography of the site exhibits low relief topography with elevations ranging between 170 and 210 feet above mean sea level (MSL). The slopes throughout the site range from approximately zero to eight percent. The site is characterized by moderate rolling hills and areas of extensive flatlands, with wetlands, vernal pools, and seasonal drainage courses scattered throughout the site. A headwater tributary of Morrison Creek traverses the Project site, entering at the northeast corner and flowing generally to the southwest.

The property is traversed by a 275-foot-wide utility easement occupied by a 230-kV Pacific Gas and Electric (PG&E) transmission line, one 230-kV Sacramento Municipal Utility District (SMUD) transmission line, and one 69-kV SMUD sub-transmission line. No other public utilities (water, sewer, drainage) are located on site. The parallel 203-kV electrical transmission towers and lines were identified as a historic resource (P-34-5210) in the Updated Cultural Resources Inventory and Evaluation prepared by Windmiller Consulting.

The Project site is bound by existing single-family residential uses and Douglas Road to the north, vacant land and Grant Line Road to the east, vacant land and Kiefer Boulevard to the south, and Rancho Cordova Parkway, single family residential, and vacant land on the west.

Historical Context

George Frederick Jaeger was born in Germany in October 1840. His family immigrated to the United States in 1845. In the 1860 Federal Census (taken in June), there are two 19-year-old men named George Jaeger born in Germany and residing in the United States with their parents – one in Missouri and one in Wisconsin. The George Jaeger who purchased the land in the study area is one of these individuals, but without extensive research, it is not possible to know which one is the correct individual.

The first record of George Jager in California is in 1875 when he married Emma Henriette Reese in El Dorado County. Emma Reese was born in California in 1857 with parent Henry and Henrietta Reese born in Prussia and Germany. Her father worked as a miner in 1870 and the family lived in the Placerville Township.

On January 1, 1879, their first daughter was born at Reservoir Hill in El Dorado County. In the 1880 Federal Census, George Jaeger is listed in El Dorado County in the Placerville Township as a 38-year-old miner, with his wife Emma, 23, and their one-year-old daughter, Etta.

In 1880, George Jaeger purchased land including the Project site, apparently deciding to switch his occupation to ranching and farming. Jaeger likely purchased the property between April and November of 1880. By 1885, Jaeger was listed as the owner of the 850-acre tract, valued at $12,750. He had a house and fences worth $1,250. Other property included furniture, an organ, farming tools, machinery, wagons, harnesses, four horses, four colts, ten cows, 15 head of cattle, poultry, and wheat.

In 1887, twin girls were born to the family – Maybel and Myrtle. By 1890, Jaeger had continued to prosper. In the 1891-1892 County Directory, his residence is listed as "four miles north" of Cosumne. In 1892, the Sacramento County Great Register of Voters provided a physical description of Jaeger – five-feet, nine-inches in height, light hair and complexion, and blue eyes. He was then listed at Michigan Bar, apparently the closest precinct at the time. He was reported to be a naturalized citizen by virtue of his father's naturalization.

In 1900, the family was listed on the ranch in Lee Township. George and Emma Jaeger lived with their three daughters – Etta, a 21-year-old bookkeeper at a drugstore, and 12-year-old twins, Maybel and Myrtle. Jaeger apparently raised hay and grain on his land, as well as some livestock. He likely irrigated a portion of his lands as pasture for the livestock. Jaeger may have also had some difficulty in sustaining operations at the ranch as the involvement of his daughters in ranch activities would have been limited due to the attitudes toward the role of women at this time.

Jaeger apparently moved his family in to the City of Sacramento in about 1905 or 1906. George may have been in ill health, or may have wished to retire from farming with increasing age. He purchased a home at 1523 F Street. Jaeger died on February 14, 1907 at age 66. The family had visitation at their home on the 16th with a private funeral. No other detail on his life was provided in the obituaries.

In his will, Jaeger left three-fifths of his estate to his wife, with the remaining two-fifths to be shared by his three daughters. In early 1908, Emma Jaeger filed a final account for the estate. Jaeger owned four houses in the City of Sacramento – a 414-acre ranch in the Florin area, a 200-acre ranch, the 850-acre main ranch, and the home in Sacramento. He sold his 480-acre holdings in El Dorado County to Alex Forni. The total value of the estate was over $37,000.

Apparently, two of the homes in Sacramento were rental properties. The ranch was apparently rented to the Little Brothers. Income was received for hay sold. Sacramento County maps continue to show the Project site as owned by George Jaeger estate through at least 1923. The 1920 Federal Census indicates that Mrs. Jaeger lived with her unmarried daughter, Myrtle, on 27th Street in the City of Sacramento. Both of their incomes were listed as "none'", suggesting they continued to receive income from the ranch property.

KNOWN CULTURAL RESOURCES

A summary of the record search, Native American consultation, and field assessment that was performed for the Project site is included below.

Research

A record search was conducted for the Project area at the North Central Information Center (NCIC) of the California Historical Resources Information System (CHRIS) in November 2004. According to NCIC files, no sites have been identified in or adjacent to the Project site. CA-SAC-308H has been used to record all of the mining tailings and features of the American River Mining District, and it is assumed that the nearby dredger tailings are considered part of that "site".

Additionally, an updated record search was conducted for the Project area at the NCIC in June 2017. According to NCIC files, no sites have been identified in or adjacent to the Project site. The June 2017 search did, however, identify two previously recorded cultural resources outside of the Project area but within one-quarter mile radius of the Project site. The records search identified six previous cultural resources within the radius, which may have included cultural resources inventories immediately adjacent to the Project site, though only one previous survey encompassed the site according to the map accompanying the record search. That survey was designated S-5843 by the NCIC and was conducted by Peak & Associates, Inc. in 2005. No cultural resources were identified in the NCIC's file for report S-5843.

The NCIC records search identified the Wietsma Dairy (P-34-533) and the George Jaeger (home) ranch (P-34-1065) located within one-quarter mile of the Project site radius. The 1916 USGS Buffalo Creek 7.5 minute quadrangle included within the records search did not illustrate any man-made buildings or structures within the Project site. However, two buildings were illustrated within one-quarter mile north of the Project site in the same section. Also, a north-south road (Jaeger Road) is illustrated adjacent to the west side of the Project site. An east-west road (Douglas Road) is illustrated within one-quarter mile north and east of the Project site.

The 1954 USGS Buffalo creek 7.5 minute quadrangle also does not illustrate any man-made buildings or structures within the Project site. However, three small reservoirs are illustrated within one-quarter mile north of the Project site and Jaeger Road is illustrated adjacent the west of the Project site.

As no previously recorded cultural resources were on file with the NCIC for the Project site, the Office of Historic Preservation's (OHP's) Archaeological Determinations of Eligibility was not searched for sites with relevant designations. For the same reason, OHP's Directory of Properties in the Historic Property Data File for Sacramento County was not searched.

NCIC staff reported nothing listed in local inventories. No bridges were located within the Project site. Therefore, a search of the Caltrans Bridge Survey was not conducted.

Consultation

PEAK & ASSOCIATES

Peak & Associates, Inc. sent a letter to the Native American Heritage Commission (NAHC) requesting a check of the Sacred Lands files. The check failed to reveal any properties listed as Sacred Lands on the Project site. The NAHC did provide a list of individuals and groups to contact regarding the site. Letters were sent to: Leland Daniels; Glenn Villa Sr. and Pamela Baumgarter of the Ione Band of Miwok Indians; Clifford McKean of the Miwok Indian Community of the Wilton Rancheria; Dwight Dutschke of the Sierra Native American Council; and Mary Daniels-Tarango of the Wilton Rancheria. No replies were received in response to the Peak & Associates outreach.

DE NOVO PLANNING GROUP

De Novo Planning Group, on behalf of the City, sent a letter to the NAHC requesting the Senate Bill (SB) 18 Tribal Consultation List. The NAHC did provide a list of individuals and groups to contact regarding the site. Letters were sent to: Rhonda Morningstar Pope, Buena Vista Rancheria of Me-Wuk Indians; Pamela Cubbler, Colfax-Todds Valley Consolidated Tribe; Clyde Prout, Colfax-Todds Valley Consolidated Tribe; Sara Dutschke Setchwaelo, Ione Band of Miwok Indians; Cosme A. Valdez, Nashville Enterprise Miwok-Maidu-Nishinam Tribe; Regina Cuellar; Shingle Springs Band of Miwok Indians; Grayson Coney, Tsi Akim Maidu; Gene Whitehouse, United Auburn Indian Community of the Auburn Rancheria (UAIC); and Raymond Hitchcock, Wilton Rancheria. One tribe, the Shingle Springs Band of Miwok Indians responded to the De Novo Planning Group/City outreach. The response letter notes that the Shingle Springs Band of Miwok Indians is not aware of any known cultural resources on the Project site. However, the Shingle Springs Band of Miwok Indians requested to have continued consultation through updates as the Project progresses. Additionally, the Shingle Springs Band of Miwok Indians requested any and all completed record searches and/or surveys that were done in or around the Project area up to and including environmental, archaeological, and cultural reports. Further, the Shingle Springs Band of Miwok Indians requested that, if during the progress of the Project new information or human remains are found, they would like to go over their process with the City to protect such important and sacred artifacts (especially near rivers and streams).

CITY OF RANCHO CORDOVA

Pursuant to Assembly Bill (AB) 52, the City sent letters to the following tribal representatives: Antonio Ruiz Jr. of Wilton Rancheria; Gene Whitehouse of UAIC; Jason Camp of UAIC; Marcos Guerrero of UAIC; and Randy Yonemura of Ione Band of Miwok Indians. One tribe, the UAIC responded to the City outreach. The response letter notes that the UAIC does not wish to initiate consultation under AB 52. However, the UAIC requested that the Tribe be informed of any changes to the Project. The UAIC also requested any and all completed record searches and/or surveys that were done in or around the Project area up to and including environmental, archaeological, and cultural reports. The Tribe also requested to be contacted if any tribal cultural resources are discovered in the Project area. The City sent a response to the UAIC which included the *Determination of Eligibility and Effect for the Jaeger 530 Project Area, Sacramento County,*

California (Peak & Associates, 2005). The City's response further notes that the Tribe is on the City's list to receive notification when the environmental document is available for public review and comment. The City's response letter concludes by noting that the City will notify the Tribe if the Project changes or if tribal cultural resources are identified within the Project area.

WINDMILLER CONSULTING

In 2017, Windmiller Consulting contacted NAHC to request an updated Sacred Land Files search and Native American contacts. The NAHC responded on May 30, 2017 and noted that the Sacred Land Files search was negative. No Native American cultural resources were identified by NAHC staff in the Project area. NAHC staff recommended contacting other sources for information on known and documented sites. The staff included a list of Native American contacts with the response letter:

- Mr. Randy Yonemura, Ione Band of Miwok Indians;
- Ms. Rhonda Morningstar Pope, Chairperson, Buena Vista Rancheria, Sacramento;
- Mr. Cosme Valdez, interim Chief Executive Officer, Nashville-Eldorado Miwok;
- Ms. Crystal Martinez, Chairperson, Ione Band of Mi wok Indians;
- Mr. Grayson Coney, Cultural Director, Tsi Akim Maidu;
- Mr. Nicholas Fonseca, Chairperson, Shingle Springs Band of Miwok Indians, Shingle Springs;
- Mr. Don Ryberg, Chairperson, Tsi Akim Maidu;
- Mr. Raymond Hitchcock, Chairperson, Wilton Rancheria;
- Mr. Gene Whitehouse, Chairperson, UAIC.

A letter dated April 26, 2018 along with a location map was mailed to each of the above contacts describing the Project and asking for volunteered information on the location of any sacred or other sites of importance to Native American tribal groups. A follow-up telephone call was made to each contact on May 8, 2018.

In a letter dated May 10, 2018 that appeared to be a standard response, Mr. Gene Whitehouse, Chairman, UAIC stated that the UAIC is concerned about development within its aboriginal territory including potential impact on the lifeways, cultural sites, and landscapes that may be of sacred or ceremonial importance. To ascertain if the Project could affect cultural resources of importance to the UAIC, the UAIC would like to consult on the Project. In addition, the UAIC would like to receive copies of any archaeological reports, environmental documents and the opportunity to comment on the identification, assessment and mitigation related to cultural resources. The UAIC also recommends that UAIC tribal representatives observe and participate in all cultural resource surveys. The letter ended with the statement that the UAIC Preservation Committee requests a meeting or site visit and for further contact, address Mr. Marcos Guerrero, Cultural Resource Manager at UAIC. Mr. Whitehouse's letter did not identify any specific sites of Native American importance within or near the Project site. No other responses from tribal contacts were received as of the date of the Windmiller Consulting report.

Earlier, on May 22, 2017, an email was sent to the Sacramento County Historical Society and to the Elk Grove Historical Society. The email described the Project, its location and requested

information on potential historic sites that may be impacted by the Project. There was one response received. Mr. Jim Entrican, Elk Grove Historical Society responded on several occasions with a discussion of pioneer families in the region, but did not specify any historic sites located at the Project location.

There was no response from the Sacramento Historical Society. A second email was sent to the Sacramento Historical Society on May 8, 2018. However, no response was received as of the date of the Windmiller Consulting report.

Field Assessment

PEAK & ASSOCIATES - 2004

Ann Peak, Peak & Associates, Inc., assisted by Sue Merritt (graduate student in Anthropology, CSU Sacramento) and Leland Daniels (archaeological technician of Miwok descent), completed a complete field survey and inspection of the Project site in December 2004. Ground visibility was fair to good. No historic, archaeological, or tribal cultural resources were found on the site during the survey. Based on the results of the inspection, there are no prehistoric nor historic period resources located within the Project site.

WINDMILLER CONSULTING - 2018

In April 2018, Ric Windmiller, M.A., conducted a pedestrian reconnaissance of the Project site was conducted along widely spaced transects. Ground visibility was fair to good; grass was cropped close to the ground by grazing cattle. One person day was expended on the reconnaissance. Expectations of finding prehistoric or historic archaeological resources were low. None were identified. However, a double row of parallel high voltage electric transmission lines crosses the Project site from northeast to southwest. The towers (P-34-5210, SMUD Electrical Transmission Towers and Lines) were recorded on DPR 523 series forms by architectural historian Dana Supernowicz, M.A.

P-34-5210, SMUD Electrical Transmission Towers and Lines, consists of two parallel rows of 230kV electrical transmission towers with attached transmission lines. The towers are over 100 feet high and made of riveted steel with lattice bracing. The double row of towers traverses the Project site from northeast to southwest along a utility easement owned by SMUD. Each tower has three horizontal arms or masts mounted to the upper half of the tower. The rectangular, truncated-shaped lattice transmission towers rest on four concrete piers. A form of "X" bracing with radiating steel lattice braces is used on opposing sides of the towers for support. The three steel arms on each tower, also containing lattice bracing, connect to twisted or elongated insulators attached to high lead cables that transmit electricity from tower to tower. The double line of towers cuts through a large swath of agricultural open-space land, terminating to the west at the West Hedge Substation at Elder Creek. The subject transmission towers were reportedly constructed between 1961 and 1968, which is based on a review of historic topographic maps and aerial photographs. P-34-5210, SMUD Electrical Transmission Towers and Lines, are not individually eligible or collectively eligible as a National Register historic district.

3.4.2 REGULATORY SETTING

FEDERAL

National Historic Preservation Act

The National Historic Preservation Act was enacted in 1966 as a means to protect cultural resources that are eligible to be listed on the National Register of Historic Places (NRHP). The law sets forth criterion that is used to evaluate the eligibility of cultural resources. The NRHP is composed of districts, sites, buildings, structures, objects, architecture, archaeology, engineering, and culture that are significant to American History.

Virtually any physical evidence of past human activity can be considered a cultural resource. Although not all such resources are considered to be significant and eligible for listing, they often provide the only means of reconstructing the human history of a given site or region, particularly where there is no written history of that area or that period. Consequently, their significance is judged largely in terms of their historical or archaeological interpretive values. Along with research values, cultural resources can be significant, in part, for their aesthetic, educational, cultural and religious values.

STATE

California Register of Historic Resources

The CRHR was established in 1992 and codified in the Public Resource Code §5020, 5024 and 21085. The law creates several categories of properties that may be eligible for the CRHR. Certain properties are included in the program automatically, including: properties listed in the NRHP; properties eligible for listing in the NRHP; and certain classes of State Historical Landmarks. Determining the CRHR eligibility of historic and prehistoric properties is guided by CCR §§15064.5(b) and Public Resources Code (PRC) §§21083.2 and 21084.1. NRHP eligibility is based on similar criteria outlined in Section 106 of the NHPA (16 U.S. Code [USC] 470).

Cultural resources, under CRHR and NRHP guidelines, are defined as buildings, sites, structures, or objects that may have historical, architectural, archaeological, cultural, or scientific importance. A cultural resource may be eligible for listing on the CRHR and/or NRHP if it:

- is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- is associated with the lives of persons important in our past;
- embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual or possesses high artistic values; or
- has yielded, or may be likely to yield, information important in prehistory or history.

If a prehistoric or historic period cultural resource does not meet any of the four CRHR criteria, but does meet the definition of a "unique" site as outlined in PRC §21083.2, it may still be treated as a

significant resource if it is: an archaeological artifact, object or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- it contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information,
- it has a special and particular quality such as being the oldest of its type or the best available example of its type, or
- it is directly associated with a scientifically recognized important prehistoric or historic event.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) Guidelines §15064.5 provides guidance for determining the significance of impacts to archaeological and historical resources. Demolition or material alteration of a historical resource, including archaeological sites, is generally considered a significant impact. Determining the CRHR eligibility of historic and prehistoric properties is guided by CCR §§15064.5(b) and Public Resources Code (PRC) §§21083.2 and 21084.1. NRHP eligibility is based on similar criteria outlined in Section 106 of the NHPA (16 U.S. Code [USC] 470).

CEQA also provides for the protection of Native American human remains (CCR §15064.5[d]). Native American human remains are also protected under the Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001 et seq.), which requires federal agencies and certain recipients of federal funds to document Native American human remains and cultural items within their collections, notify Native American groups of their holdings, and provide an opportunity for repatriation of these materials. This act also requires plans for dealing with potential future collections of Native American human remains and associated funerary objects, sacred objects, and objects of cultural patrimony that might be uncovered as a result of development projects overseen or funded by the federal government.

Assembly Bill 52

AB 52, approved in September 2014, creates a formal role for California Native American tribes by creating a formal consultation process and establishing that a substantial adverse change to a tribal cultural resource has a significant effect on the environment. Tribal cultural resources are defined as:

1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
   A) Included or determined to be eligible for inclusion in the CRHR
   B) Included in a local register of historical resources as defined in PRC Section 5020.1(k)
2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC Section 5024.1 (c). In applying the criteria set forth in PRC Section 5024.1 (c) the lead agency shall consider the significance of the resource to a California Native American tribe.

A cultural landscape that meets the criteria above is also a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape. In addition, a historical resource described in PRC Section 21084.1, a unique archaeological resource as defined in PRC Section 21083.2(g), or a "non-unique archaeological resource" as defined in PRC Section 21083.2(h) may also be a tribal cultural resource if it conforms with above criteria.

AB 52 requires a lead agency, prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project, to begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of a proposed project if: (1) the California Native American tribe requested to the lead agency, in writing, to be informed by the lead agency through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe, and (2) the California Native American tribe responds, in writing, within 30 days of receipt of the formal notification, and requests the consultation.

Assembly Bill 978

In 2001, AB 978 expanded the reach of Native American Graves Protection and Repatriation Act of 1990 and established a state commission with statutory powers to assure that federal and state laws regarding the repatriation of Native American human remains and items of patrimony are fully complied with. In addition, AB 978 also included non-federally recognized tribes for repatriation.

LOCAL

Rancho Cordova General Plan

The Rancho Cordova General Plan contains the following goals and policies that are relevant to cultural and tribal resources:

CULTURAL AND HISTORIC RESOURCES ELEMENT

Goal CHR.1: Identify and preserve the history of Rancho Cordova for future generations.

> **Policy CHR.1.1:** Establish, support, and fund programs that enhance Rancho Cordova's sense of community and identity, such as the collection of oral histories; genealogical research; and the acquisition of collections of historic artifacts, photographs, memorabilia, or other information relevant to the history of the City.
>
> **Policy CHR.1.2:** Establish and promote programs that identify, maintain, and protect buildings, sites, or other features of the landscape possessing historic or cultural significance.
>
> **Policy CHR.1.3:** Establish review procedures for development projects that recognize the history of the area in conjunction with State and federal laws.

3.4.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the Project is considered to have a significant impact on cultural and tribal cultural resources if it will:

- Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines §15064.5;
- Cause a substantial adverse change in the significance of archaeological resource pursuant to CEQA Guidelines §15064.5;
- Disturb any human remains, including those interred outside of formal cemeteries;
- Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:
  1) listed or eligible for listing on the California Register of Historical Resources, or on a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
  2) a resource determined by a lead agency, in its discretion and supported by substantial evidence, to be significant according to the historical register criteria in Public Resources Code section 5024.1 (c), and considering the significance of the resource to a California Native American tribe.

IMPACTS AND MITIGATION MEASURES

Impact 3.4-1: Project implementation has the potential to cause a substantial adverse change to a significant historical or archaeological resource, as defined in CEQA Guidelines §15064.5, or a significant tribal cultural resource, as defined in Public Resources Code §21074 (Less than Significant with Mitigation)

The Project site is located in an area known to have historical, archaeological, and tribal cultural resources. The field surveys did not reveal a significant historical, archaeological, or tribal cultural resources or sites on the Project site. The field surveys did identify a historical resource; however, it was determined to not be historically significant (Windmiller Consulting, 2018).

As described under the Consultation heading above, the City of Rancho Cordova sent outreach letters to five tribal representatives pursuant to AB 52; De Novo Planning Group contacted nine tribal representatives pursuant to AB 52, and Windmiller Consulting contacted nine tribal representatives as part of their outreach efforts. None of the tribes that were contacted identified any tribal cultural resources on the Project site.

The UAIC responded in writing to both the City and Windmiller Consulting and requested to be notified of any changes to the Project, provided with any additional surveys, record searches or

reports, and recommended that the UAIC participate in or observe any surveys. The Shingle Springs Band of Miwok Indians responded in writing to De Novo Planning Group and requested to be notified of any changes to the Project, provided with any additional surveys, record searches or reports, and requested to be contacted if any tribal cultural resources are discovered in the Project area. The UAIC's request to observe cultural surveys is addressed by Mitigation Measure 3.4-1 which provides for the tribe's monitoring of ground-disturbing activities and provides the tribe with an opportunity to make recommendations regarding any tribal cultural resources if inadvertently discovered Mitigation Measure 3.4-1 provides the tribe with an opportunity to make recommendations regarding tribal cultural resources or Native American remains, if inadvertently discovered. The request by the Shingle Springs Band of Miwok Indians to be notified if if human remains are found is addressed by Mitigation Measure 3.4-2 which requires the tribe to be consulted if human remains that are Native American in origin are inadvertently discovered.

As with most projects in the region that involve ground-disturbing activities, there is the potential for discovery of a previously unknown historical, archaeological, or tribal cultural resource. Implementation of the following mitigation measure would ensure that any finds are appropriately evaluated, documented, and addressed and would reduce this potential impact to a ***less than significant*** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.4-1: *Prior to any ground-disturbing activities on the Project site, a qualified archaeologist shall conduct pre-construction worker cultural resources sensitivity training. The training session shall focus on the recognition of the types of historical and cultural, including Native American, resources that could be encountered, procedures to be followed if resources are found, and pertinent laws protecting these resources. Representatives from the Shingle Springs Band of Miwok Indians and the United Auburn Indian Community shall be invited to attend the training.*

If any cultural resources, including prehistoric or historic artifacts, or other indications of archaeological resources or tribal cultural resources are found during grading and construction activities, all work shall be halted immediately within a 100-foot radius of the discovery until an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, has evaluated the find(s) and until the Shingle Springs Band of Miwok Indians and the United Auburn Indian Community have been contacted and invited to review and document the find.

Work shall not continue at the discovery site until the archaeologist conducts sufficient research and data collection to make a determination that the resource is either 1) not cultural in origin; or 2) not potentially significant or eligible for listing on the NRHP or CRHR; or 3) not a significant Public Trust Resource.

If a significant finding is made, a plan must be developed for this inadvertent finding. Measures to potentially address a subsurface finding could include one or more of the following depending upon the nature of the find: recordation of the finding; further efforts to define the extent and nature of

the resource; preservation in place, and re-design to ensure long-term preservation of the resource; and/or data recovery excavations.

If Native American resources are identified, a Native American monitor, following the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites established by the Native American Heritage Commission, may also be required and, if required, shall be retained at the Applicant's expense. Additionally, if any of these resources are identified, the Shingle Springs Band of Miwok Indian shall be notified and provided the opportunity to comment on the process to protect any potentially important or sacred resources, particularly if located along the on-site aquatic resources.

Impact 3.4-2: Project implementation has the potential to disturb human remains, including those interred outside of formal cemeteries (Less than Significant with Mitigation)

Indications suggest that humans have occupied Sacramento County for over 10,000 years and it is not always possible to predict where human remains may occur outside of formal burials. Therefore, excavation and construction activities, regardless of depth, may yield human remains that may not be interred in marked, formal burials.

Under CEQA, human remains are protected under the definition of archaeological materials as being "any evidence of human activity." Additionally, Public Resources Code Section 5097 has specific stop-work and notification procedures to follow in the event that human remains are inadvertently discovered during Project implementation.

While no human remains were found during field surveys of the Project site, implementation of the following mitigation measure would ensure that all construction activities which inadvertently discover human remains implement state-required consultation methods to determine the disposition and historical significance of any discovered human remains. The following mitigation measure would ensure that any discovered human remains are evaluated and addressed in compliance with State law and would reduce this impact to a ***less-than-significant*** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.4-2: *If human remains are discovered during the course of construction during any phase of the Project, work shall be halted at the site and at any nearby area reasonably suspected to overlie adjacent human remains until the Sacramento County Coroner has been informed and has determined that no investigation of the cause of death is required. If the remains are of Native American origin, either of the following steps will be taken:*

- *The coroner shall contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner shall make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.*

- *The Shingle Springs Band of Miwok Indian shall be consulted to go over the process to protect any human remains, particularly if located along the on-site aquatic resources.*
- *The landowner shall retain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance when any of the following conditions occurs:*
    - *The Native American Heritage Commission is unable to identify a descendent.*
    - *The descendant identified fails to make a recommendation.*
    - *The City of Rancho Cordova or its authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.*

The purpose of this section is to disclose and analyze the potential impacts associated with the geology of the Project region and general vicinity, and to analyze issues such as the potential exposure of people and property to geologic hazards, landform alteration, and erosion. This section is based in part on the following:

- *Rancho Cordova General Plan* (City of Rancho Cordova, Adopted June 26, 2006);
- *Rancho Cordova General Plan Draft Environmental Impact Report* (City of Rancho Cordova, March 2006);
- *Preliminary Geotechnical Engineering Report – Jaeger Ranch Property* (Wallace-Kuhl & Associates, September 2016);
- *Web Soil Survey (*United States Department of Agriculture Natural Resources Conservation Service, 2018); and
- *Soil Survey of Sacramento County, California* (USDA, 1993).

One comment was received during the public review period or scoping meeting for the Notice of Preparation regarding this topic from the following: Cordova Recreation & Park District (August 3, 2018). The comment related to this topic is addressed within this section.

3.5.1 ENVIRONMENTAL SETTING

REGIONAL GEOLOGY

The Project site is located near the center of the Sacramento Valley, approximately 16 miles southeast of the confluence of the American and Sacramento Rivers. The Sacramento Valley is bordered by the Coast Ranges and Delta on the west and the foothills of the Sierra Nevada to the east.

The Sacramento Valley has been filled over time with up to a six-mile thick sequence of interbedded clay, silt, sand, and gravel deposits. The sediments range in age from more than 144 million years old (Jurassic Period) to less than 10,000 years (Holocene). The most recent sediments consist of coarse-grained (sand and gravel) deposits along river courses and fine-grained (clay and silt) deposits located in low-lying areas or flood basins and are referred to as alluvial deposits. These deposits are loose and not well consolidated soils.

Older alluvial deposits underlie the edges of the Valley. The older alluvial deposits are exposed in the foothill regions in the eastern portion of the county. The alluvial deposits, which slope gradually toward the center of the Valley, contain most of the groundwater supplies in region. The foothills of the coast ranges to the west of the Project site are underlain by alluvial deposits and older marine sediments deposited during the Tertiary Period when an inland sea occupied the Great Valley.

Great Valley Geomorphic Province

The Great Valley is an alluvial plain, about 50 miles wide and 400 miles long, between the Coast Ranges and Sierra Nevada. The Great Valley is drained by the Sacramento and San Joaquin rivers,

which join and enter San Francisco Bay. The eastern border is the west-sloping Sierran bedrock surface, which continues westward beneath alluvium and older sediments. The western border is underlain by east-dipping Cretaceous and Cenozoic strata that form a deeply buried synclinal trough, lying beneath the Great Valley along its western side.

City of Rancho Cordova

The geological formations underlying the majority of the City of Rancho Cordova General Plan Planning Area consist mostly of Cenozoic Quaternary gravelly alluvial and glacial deposits from the ancestral channel of the American River, which date back to the mid Pleistocene age or approximately 600,000 years. These formations are typically found north of Douglas Road and east of Sunrise Boulevard. The geologic structure east of Grant Line Road consists primarily of Cenozoic Tertiary Mehrten formations of andesitic conglomerate, sandstone, and breccia. The youngest geomorphic features in the Planning Area are low floodplains, which are found primarily along the American River and Cosumnes River. These features include natural levees, alluvial plains, and many smaller channels along both river corridors. Bar and channel topography is evident on the low floodplains adjacent to these river corridors. The floodplains along the Cosumnes River are not protected by levees or dams and are frequently inundated during the rainy season.

The majority of the soils in the City's General Plan Planning Area are the result of alluvial deposits, or river and lake deposits on various geomorphic surfaces. The U.S. Department of Agriculture (USDA) Soil Conservation Service produces maps classifying soil groups based on physical, hydrologic, and chemical properties. According to the USDA Soil Survey of Sacramento County (Soil Survey), the Planning Area contains 59 separate soil types.

SITE GEOLOGY

Soil Survey

A Custom Soil Survey was completed for the Project site using the Natural Resources Conservation Service (NRCS) Web Soil Survey program. The NRCS Soils Map is provided in Figure 3.5-1. Table 3.5-1 identifies the type and range of soils found in the Project site.

TABLE 3.5-1: PROJECT SITE SOILS

UNIT SYMBOL	*NAME*	*ACRES IN PROJECT SITE*	*PERCENT OF PROJECT SITE*
145	Fiddyment fine sandy loam, 1-8% slopes	2.60	0.5%
159	Hicksville gravelly loam, 0-2% slopes	12.41	2.4%
193	Red Bluff-Redding complex, 0-5% slopes	85.18	16.2%
197	Redding loam, 2-8% slopes	54.90	10.5%
198	Redding gravelly loam, 0-8% slopes, MLRA 17	370.39	70.5%

SOURCE: NRCS CUSTOM SOIL SURVEY 2018.

Fiddyment. The Fiddyment series consists of moderately deep, well drained soils formed in material weathered from consolidated sediments of mixed rock sources. Fiddyment soils are on nearly level to rolling low terraces and hills. This soils series is well drained, has slow to medium

runoff, and very slow permeability. Water perches above the claypan for short periods after periods of high rainfall in December through April. The soil is used for rangeland, non-irrigated small grain crops, and urban development. Some areas are used for irrigated pasture. Natural vegetation is annual grasses and forbs such as soft chess, oats, and filaree and a few scattered oaks.

Hicksville. The Hicksville series consists of deep and very deep, moderately well drained soils that formed in alluvium derived from mixed rock sources. Hicksville soils are on low stream terraces and alluvial flats along drainageways of terraces and hills. This soils series is moderately well drained, has very slow to slow runoff, and moderately slow permeability. These soils are used for livestock grazing. A few areas are used for irrigated hay and pasture and irrigated row and orchard crops. Natural vegetation is soft chess, wild oats, ripgut brome, needlegrass and filaree.

Red Bluff. The Red Bluff series consists of very deep, well drained soils formed in old mixed alluvium. Red Bluff soils are on terraces. This soils series is well drained, has slow to medium runoff, and moderately slow permeability. Small grains and pasture are grown where dry farmed. Row crops, pasture and a few orchards are grown under irrigation. Native vegetation consists of blue oak, live oak, manzanita, soft chess, wild oats, and annual forbs. In lower rainfall areas, oaks and brush are absent.

Redding. The Redding series consists of moderately deep to duripan, well or moderately well drained soils that formed in alluvium derived from mixed sources. They are on nearly level or dissected fan remnants. This soils series is well or moderately well drained, has very low to high runoff, except for local ponding in intermound areas, and very slow to slow permeability. These soils are used for rangeland and dryland small grain. A few areas are used for irrigated pasture. Natural vegetation is annual grasses and forbs.

Groundwater

The Central Area groundwater subbasin (i.e., the Central Basin) corresponds to the South American Sub-Basin (California Department of Water Resources [DWR] Basin Number 5-21.65) and is located between the American River and the Cosumnes River. Zone 40 is located within the Central Basin.

Groundwater in the Central Basin is classified as occurring in a shallow aquifer zone (Laguna or Modesto Formation) or in an underlying deeper aquifer zone (Mehrten Formation). Within Zone 40, the shallow aquifer extends to approximately 200 to 300 feet below the ground surface; in general, the water quality in this zone is considered good, except for the occurrence of low levels of arsenic in some locations. The shallow aquifer is typically used for private domestic wells and requires no treatment unless naturally occurring arsenic is encountered.

The deep aquifer is semiconfined by and separated from the shallow aquifer by a discontinuous clay layer. The base of the deep aquifer averages approximately 1,400 feet below the ground surface. Water at the base of the deep aquifer has higher concentrations of total dissolved solids.

Iron and manganese typically found in the deep aquifer are at levels requiring treatment. Groundwater used in Zone 40 is supplied from both the shallow and deeper aquifer systems.

Groundwater in central Sacramento County moves from sources of recharge to areas of discharge. Recharge to the aquifer system occurs along river and stream channels where extensive sand and gravel deposits exist, particularly along the American, Cosumnes, and Sacramento River channels. Additional recharge occurs along the eastern boundary of Sacramento County at the transition point from the consolidated rocks of the Sierra Nevada to the alluvial deposited basin sediments. This typically occurs through fractured granitic rock that makes up the Sierra Nevada foothills. Other sources of recharge within the areas include deep percolation from applied surface water, precipitation, and small streams.

Groundwater elevations through much of the Central Basin generally declined from the 1950s to about 1980 by about 20 to 30 feet. From 1980 to 1983, water levels recovered by about 10 feet and remained stable until 1987, which was the beginning of the 1987–1992 droughts. From 1987 to 1995, water levels declined by about 15 feet. From 1995 to 2003, most water levels recovered to higher levels than before the 1987–1992 drought. Much of this recovery can be attributed to increased use of surface water in the Central Basin and the fallowing of previously irrigated agricultural lands for development of urban uses.

According to the Geotechnical Engineering Report prepared for the Project site (Wallace-Kuhl, 2016) (Appendix E of this Draft EIR), groundwater was not encountered in the test pits excavated at the site in August of 2016. Based on groundwater depth observations taken from 2008 to 2012 in nearby wells (e.g. Wells EX-20, EX-21, EX-22, and EX-27 from Central Valley Regional Water Quality Control Board Case Number SL205493018) permanent groundwater is anticipated to vary between 150 and 240 feet below existing surface grades.

However, perched seasonal groundwater is anticipated to occur at this site. Surface water features observed during site exploration activities included vernal ponds and ephemeral streams/washes. Based on these surface features, and the underlying geology, we anticipate the perched groundwater conditions are likely to occur at the site with potential for significant surface water flows. Perched groundwater conditions should be expected after heavy rainfall or during the wetter seasons of the year.

FAULTS AND SEISMICITY

Faults

A fault is a fracture in the crust of the earth along which rocks on one side have moved relative to those on the other side. A fault trace is the line on the earth's surface defining the fault. Displacement of the earth's crust along faults releases energy in the form of earthquakes and in some cases in fault creep. Most faults are the result of repeated displacements over a long period of time.

Surface rupture occurs when movement on a fault deep within the earth breaks through to the surface. Surface ruptures have been known to extend up to 50 miles with displacements of an inch

to 20 feet. Fault rupture almost always follows preexisting faults, which are zones of weakness. Rupture may occur suddenly during an earthquake or slowly in the form of fault creep. Sudden displacements are more damaging to structures because they are accompanied by shaking.

The State of California designates faults as active, potentially active, and inactive depending on how recent the movement that can be substantiated for a fault. Table 3.5-2 presents the California fault activity rating system.

TABLE 3.5-2: FAULT ACTIVITY RATING

FAULT ACTIVITY RATING	*GEOLOGIC PERIOD OF LAST RUPTURE*	*TIME INTERVAL*
Active (A)	Holocene	Within last 11,700 Years
Potentially Active (PA)	Quaternary	Age Undifferentiated
Inactive (I)	Pre-Quaternary	Greater than 1.6 Million Years

SOURCE: CALIFORNIA DEPARTMENT OF CONSERVATION, FAULT ACTIVITY MAP OF CALIFORNIA (2010).

No known faults traverse through the Rancho Cordova Planning Area. However, the site does lie within a seismically active region, as California has numerous faults that are considered active. Generally, a fault is considered active if it has ruptured within the Holocene epoch (11,700 years before present). Mapped, active regional faults within the vicinity of the Project site range from 14 to 50 miles away.

Fault Systems

Seismicity is directly related to the distribution of fault systems within a region. Depending on activity patterns, faults and fault-related geologic features may be classified as active, potentially active, or inactive.

The Quaternary Faults are illustrated on Figure 3.5-2. There are no Alquist-Priolo Earthquake Fault Zones in the region. With the exception of the Dunnigan Hills fault, located in the Woodland area, the Sacramento Valley has generally not been seismically active in the last 11,000 years (Holocene time). Faults with known or estimated activity during the Holocene are generally located in the San Francisco Bay Area to the west, or in the Lake Tahoe area to the east.

Seismicity

The amount of energy available to a fault is determined by considering the slip-rate of the fault, its area (fault length multiplied by down-dip width), maximum magnitude, and the rigidity of the displaced rocks. These factors are combined to calculate the moment (energy) release on a fault. The total seismic energy release for a fault source is sometimes partitioned between two different recurrence models, the characteristic and truncated Gutenberg-Richter (G-R) magnitude-frequency distributions. These models incorporate our knowledge of the range of magnitudes and relative frequency of different magnitudes for a particular fault. The partition of moment and the weights for multiple models are given in the following summary.

Earthquakes are generally expressed in terms of intensity and magnitude. Intensity is based on the observed effects of ground shaking on people, buildings, and natural features. By comparison, magnitude is based on the amplitude of the earthquake waves recorded on instruments, which

have a common calibration. The Richter scale, a logarithmic scale ranging from 0.1 to 9.0, with 9.0 being the strongest, measures the magnitude of an earthquake relative to ground shaking. Table 3.5-3 provides a description and a comparison of intensity and magnitude.

The California Building Standards Code (CBSC) places all of California in the zone of greatest earthquake severity because recent studies indicate high potential for severe ground shaking.

TABLE 3.5-3: MODIFIED MERCALLI INTENSITY SCALE FOR EARTHQUAKES

RICHTER MAGNITUDE	*MODIFIED MERCALLI SCALE*	*EFFECTS OF INTENSITY*
0.1 – 0.9	I	Earthquake shaking not felt
1.0 – 2.9	II	Shaking felt by those at rest.
3.0 – 3.9	III	Felt by most people indoors, some can estimate duration of shaking.
4.0 – 4.5	IV	Felt by most people indoors. Hanging objects rattle, wooden walls and frames creak.
4.6 – 4.9	V	Felt by everyone indoors, the duration of shaking can be estimated by most people. Standing autos rock. Crockery clashes, dishes rattle and glasses clink. Doors open, close and swing.
5.0 – 5.5	VI	Felt by all who estimate duration of shaking. Sleepers awaken, liquids spill, objects are displaced, and weak materials crack.
5.6 – 6.4	VII	People frightened and walls unsteady. Pictures and books thrown, dishes and glass are broken. Weak chimneys break. Plaster, loose bricks and parapets fall.
6.5 – 6.9	VIII	Difficult to stand. Waves on ponds, cohesionless soils slump. Stucco and masonry walls fall. Chimneys, stacks, towers, and elevated tanks twist and fall.
7.0 – 7.4	IX	General fright as people are thrown down, hard to drive. Trees broken, damage to foundations and frames. Reservoirs damaged, underground pipes broken.
7.5 – 7.9	X	General panic. Ground cracks, masonry and frame buildings destroyed. Bridges destroyed, railroads bent slightly. Dams, dikes and embankments damaged.
8.0 – 8.4	XI	Large landslides, water thrown, general destruction of buildings. Pipelines destroyed, railroads bent.
8.5 +	XII	Total nearby damage, rock masses displaced. Lines of sight/level distorted. Objects thrown into air.

SOURCE: UNITED STATES GEOLOGICAL SURVEY.

Alquist-Priolo Special Stud y Zone

The California legislature passed the Alquist-Priolo Special Studies Zone Act in 1972 to address seismic hazards associated with faults and to establish criteria for developments for areas with identified seismic hazard zones. The California Geologic Survey (CGS) evaluates faults with available geologic and seismologic data and determines if a fault should be zoned as active, potentially active, or inactive. If CGS determines a fault to be active, then it is typically incorporated into a Special Studies Zone in accordance with the Alquist-Priolo Earthquake Hazard Act. Alquist-Priolo Special Study Zones are usually one-quarter mile or less in width and require site-specific evaluation of fault location and require a structure setback if the fault is found traversing a Project site. The Project site is not within an Alquist-Priolo Special Study Zone.

SEISMIC HAZARDS

Seismic Ground Shaking

The potential for seismic ground shaking is expected in California. As a result of the foreseeable seismicity in California, the State requires special design considerations for all structural improvements in accordance with the seismic design provisions in the California Building Code. These seismic design provisions require enhanced structural integrity based on several risk parameters. Seismic ground shaking on the Project site is expected during the life of the Project.

Fault Rupture

A fault rupture occurs when the surface of the earth breaks as a result of an earthquake, although this does not happen with all earthquakes. These ruptures generally occur in a weak area of an existing fault. Ruptures can be sudden (i.e. earthquake) or slow (i.e. fault creep). The Alquist-Priolo Fault Zoning Act requires active earthquake fault zones to be mapped and it provides special development considerations within these zones. The Project site does not have surface expression of active faults and fault rupture is not anticipated.

Liquefaction

Liquefaction typically requires a significant sudden decrease of shearing resistance in cohesionless soils and a sudden increase in water pressure, which is typically associated with an earthquake of high magnitude. The potential for liquefaction is highest when groundwater levels are high, and loose, fine, sandy soils occur at depths of less than 50 feet. Based on a review of geologic maps and Natural Resources Conservation Service (NRCS) soil data, it is unlikely that soils on the Project site would be subject to liquefaction in the event of an earthquake because the Project site is underlain by relatively stable Pleistocene-age soils, the potential seismic sources are a relatively long distance away, and the groundwater table is at least 100 feet below the ground surface.

According to the Geotechnical Engineering Report prepared for the Project site (Wallace-Kuhl, 2016), groundwater at the site is greater than 50 feet below grade, and saturated soils were not encountered during site exploration activities. Soils will likely remain unsaturated during the majority of the year, and are thus not considered susceptible to liquefaction. The silty sands and sands are susceptible to seismic compression. Therefore, liquefaction potential at the site is considered very low.

Lateral Spreading

Lateral spreading typically results when ground shaking moves soil toward an area where the soil integrity is weak or unsupported, and it typically occurs on the surface of a slope, although it does not occur strictly on steep slopes. Oftentimes, lateral spreading is directly associated with areas of liquefaction. Areas in the region that are susceptible to this hazard are located along creeks or open water bodies, or within the foothills to the west. According to the City's General Plan Draft EIR, the potential for lateral spreading throughout the General Plan Planning Area to occur during or after seismic events is considered to be low due to the distance of active faults.

Landslides

Landslides include rockfalls, deep slope failure, and shallow slope failure. Factors such as the geological conditions, drainage, slope, vegetation, and others directly affect the potential for landslides. One of the most common causes of landslides is construction activity that is associated with road building (i.e. cut and fill). The potential for landslides is considered remote in the Sacramento Valley floors due to the lack of significant slopes. For this reason, the probability of landslides occurring on the Project site is low.

NON-SEISMIC HAZARDS

Expansive Soils

Expansive soils can undergo significant volume change with changes in moisture content. They shrink and harden when dried and expand and soften when wet. If structures are underlain by expansive soils, it is important that foundation systems be capable of tolerating or resisting any potentially damaging soil movements. In addition, it is important to limit moisture changes in the surficial soils by using positive drainage away from buildings as well as limiting landscaping watering. As shown in Figure 3.5-3, the expansive potential of the Project site soils is generally low. According to the Geotechnical Engineering Report prepared for the Project site (Wallace-Kuhl, 2016), laboratory test results performed on Project site soil samples collected in the upper two to three feet indicate that these soils typically have a plasticity index of less than 15 and can be considered to have a low expansion potential. The soils beneath about two feet typically have a plasticity index of greater than 15, and should be considered to have a low to moderate expansion potential.

Erosion

Erosion naturally occurs on the surface of the earth as surface materials (i.e. rock, soil, debris, etc.) is loosened, dissolved, or worn away, and transported from one place to another by gravity. Two common types of soil erosion include wind erosion and water erosion. The steepness of a slope is an important factor that affects soil erosion. Erosion potential in soils is influenced primarily by loose soil texture and steep slopes. Loose soils can be eroded by water or wind forces, whereas soils with high clay content are generally susceptible only to water erosion. The potential for erosion generally increases as a result of human activity, primarily through the development of facilities and impervious surfaces and the removal of vegetative cover. According to the City's General Plan Draft EIR and the SunCreek Specific Plan Draft EIR, the erosion potential for the Project area is low to moderate.

The *Custom Soils Report* identified the erosion potential for the soils in the Project site. This report summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. Soil property data for each map unit component includes the hydrologic soil group, erosion factor "K" for the surface horizon, erosion factor "T", and the representative percentage of sand, silt, and clay in the surface horizon.

Erosion factor "K" indicates the susceptibility of a soil to sheet and rill erosion by water. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water. Within the Project site, the erosion factor Kf varies from 0.32 to 0.49, which is considered a moderate potential for erosion.

Subsidence

Land subsidence is the gradual settling or sinking of an area with little or no horizontal motion due to changes taking place underground. It is a natural process, although it can also occur (and is greatly accelerated) as a result of human activities. Common causes of land subsidence from human activity include: pumping water, oil, and gas from underground reservoirs; dissolution of limestone aquifers (sinkholes); collapse of underground mines; drainage of organic soils; and initial wetting of dry soils. Sacramento County is affected by five causes of land subsidence: 1) compaction of unconsolidated soils from earthquakes; 2) compaction by heavy structures; 3) erosion of peat soils; 4) peat oxidation; and 5) groundwater withdrawal. Minor land subsidence was observed and recorded in the County between 1912 and the mid-1960s for all groundwater basins underlying the County. However, subsidence did not exceed 0.40-feet during this time frame.

The Project site contains creek banks, and areas of low soil bearing strength. According to the City's General Plan EIR, the likeliness of subsidence in the City's Planning Area is considered very low.

3.5.2 REGULATORY SETTING

STATE

The State of California has established a variety of regulations and requirements related to seismic safety and structural integrity, including the California Building Code, the Alquist-Priolo Earthquake Fault Zoning Act and the Seismic Hazards Mapping Act.

California Building Standards Code

The CBSC is included in Title 24 of the California Code of Regulations (CCR) and includes the California Building Code. Under state law, all building standards must be centralized in Title 24 or they are not enforceable.

The CBSC is a compilation of three types of building criteria from three different origins:

- Building standards that have been adopted by state agencies without change from building standards contained in national model codes;
- Building standards that have been adopted and adapted from the national model code standards to meet California conditions; and
- Building standards, authorized by the California legislature, that constitute extensive additions not covered by the model codes that have been adopted to address particular California concerns.

Through the CBSC, the state provides a minimum standard for building design and construction. The CBSC contains specific requirements for seismic safety, excavation, foundations, retaining walls, and site demolition. It also regulates grading activities, including drainage and erosion control.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 sets forth the policies and criteria of the State Mining and Geology Board, which governs the exercise of governments' responsibilities to prohibit the location of developments and structures for human occupancy across the trace of active faults. The policies and criteria are limited to potential hazards resulting from surface faulting or fault creep within Earthquake Fault Zones, as delineated on maps officially issued by the State Geologist. Working definitions include:

- Fault – a fracture or zone of closely associated fractures along which rocks on one side have been displaced with respect to those on the other side;
- Fault Zone – a zone of related faults, which commonly are braided and sub parallel, but may be branching and divergent. A fault zone has a significant width (with respect to the scale at which the fault is being considered, portrayed, or investigated), ranging from a few feet to several miles;
- Sufficiently Active Fault – a fault that has evidence of Holocene surface displacement along one or more of its segments or branches (last 11,000 years); and
- Well-Defined Fault – a fault whose trace is clearly detectable by a trained geologist as a physical feature at or just below the ground surface. The geologist should be able to locate the fault in the field with sufficient precision and confidence to indicate that the required site-specific investigations would meet with some success.

"Sufficiently Active" and "Well Defined" are the two criteria used by the State to determine if a fault should be zoned under the Alquist-Priolo Act.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act, passed in 1990, addresses non-surface fault rupture earthquake hazards, including liquefaction and seismically-induced landslides. Under the Act, seismic hazard zones are to be mapped by the State Geologist to assist local governments in land use planning. The program and actions mandated by the Seismic Hazards Mapping Act closely resemble those of the Alquist-Priolo Earthquake Fault Zoning Act (which addresses only surface fault-rupture hazards) and are outlined below:

The State Geologist is required to delineate the various "seismic hazard zones."

- Cities and Counties, or other local permitting authority, must regulate certain development "projects" within the zones. They must withhold the development permits

for a site within a zone until the geologic and soil conditions of the site are investigated and appropriate mitigation measures, if any, are incorporated into development plans.

- The State Mining and Geology Board provides additional regulations, policies, and criteria, to guide cities and counties in their implementation of the law. The Board also provides guidelines for preparation of the Seismic Hazard Zone Maps and for evaluating and mitigating seismic hazards.

- Sellers (and their agents) of real property within a mapped hazard zone must disclose that the property lies within such a zone at the time of sale.

National Pollutant Discharge Elimination System (NPDES)

National Pollutant Discharge Elimination System (NPDES) permits are required for discharges of pollutants to navigable waters of the United States, which includes any discharge to surface waters, including lakes, rivers, streams, bays, the ocean, dry stream beds, wetlands, and storm sewers that are tributary to any surface water body. NPDES permits are issued under the Federal Clean Water Act, Title IV, Permits and Licenses, Section 402 (33 USC 466 et seq.)

The Regional Water Quality Control Board (RWQCB) issues these permits in lieu of direct issuance by the Environmental Protection Agency, subject to review and approval by the Environmental Protection Agency Regional Administrator. The terms of these NPDES permits implement pertinent provisions of the Federal Clean Water Act and the Act's implementing regulations, including pre-treatment, sludge management, effluent limitations for specific industries, and anti- degradation. In general, the discharge of pollutants is to be eliminated or reduced as much as practicable so as to achieve the Clean Water Act's goal of "fishable and swimmable" navigable (surface) waters. Technically, all NPDES permits issued by the RWQCB are also Waste Discharge Requirements issued under the authority of the California Water Code.

These NPDES permits regulate discharges from publicly owned treatment works, industrial discharges, stormwater runoff, dewatering operations, and groundwater cleanup discharges. NPDES permits are issued for five years or less, and are therefore to be updated regularly. The rapid and dramatic population and urban growth in the Central Valley Region has caused a significant increase in NPDES permit applications for new waste discharges. To expedite the permit issuance process, the RWQCB has adopted several general NPDES permits, each of which regulates numerous discharges of similar types of wastes. The SWRCB issues general permits for stormwater runoff from construction sites statewide. Stormwater discharges from industrial and construction activities in the Central Valley Region can be covered under these general permits, which are administered jointly by the SWRCB and RWQCB.

In accordance with the NPDES General Construction Permit requirements, a Storm Water Pollution Prevention Plan (SWPPP) is required for projects that disturb at least one acre of soil. The SWPPP must be submitted to the RWQCB.

LOCAL

Rancho Cordova General Plan

The Rancho Cordova General Plan contains the following goals and policies that are relevant to geotechnical aspects of the proposed Project:

SAFETY ELEMENT

Goal S.3: Reduce the risk of adverse effects to residents or businesses as a result of geologic or seismic instability.

Policy S.3.1: Support efforts by federal, State, and local jurisdictions to investigate local seismic and geologic hazards and support those programs that effectively mitigate these hazards.

Policy S.3.2: Ensure that new structures are protected from damage caused by geologic and/or soil conditions to the greatest extent feasible.

NATURAL RESOURCES ELEMENT

Goal NR.5: Protect the quantity and quality of the City's water resources.

Policy NR.5.5: Minimize erosion to stream channels resulting from new development in urban areas consistent with State law.

City of Rancho Cordova Municipal Code

Chapter 16.04, Building Code, provides minimum standards to safeguard life or limb, health, property, and public welfare by regulating and controlling the design, construction, installation, quality of materials, use and occupancy, location and maintenance of all buildings and structures within this jurisdiction, and certain equipment. Section 16.030 of this chapter adopts the 2016 California Building Code.

Chapter 16.44, Land Grading and Erosion Control, establishes administrative procedures, a minimum standard of review, and implementation and enforcement procedures for controlling erosion, sedimentation, and other pollutant runoff from new development projects. The ordinance also addresses grading, filling, land excavation, construction activities, and drainage as they relate to a particular project. The ordinance applies to any development project resulting in the excavation of 350 cubic yards of soil or more. Grading and erosion control permits, and amendments thereto, are subject to the requirements of the California Environmental Quality Act (CEQA) if they have not been addressed in a previous environmental document. Individual project applicants are required to furnish a copy of the permit application to the City for review and approval. The City reviews all grading and erosion control permits and geotechnical studies and reports in accordance with the Ordinance to ensure geologic and soil stability have been properly addressed.

3.5.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the Project will have a significant impact on geology, soils, and minerals if it will:

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
    - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;
    - Strong seismic ground shaking;
    - Seismic-related ground failure, including liquefaction; and/or
    - Landslides;
- Result in substantial soil erosion or the loss of topsoil;
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property; and/or
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

As discussed in the Initial Study prepared for the Project (see Appendix A), there would be ***no impact*** regarding mineral resources and ***no impact*** associated with the use of septic tanks or alternative wastewater disposal systems. These issues will not be addressed further.

IMPACTS AND MITIGATION MEASURES

Impact 3.5-1: Project implementation would not directly or indirectly cause potential substantial adverse effects involving strong seismic ground shaking or seismic related ground failure (Less than Significant)

The Project site is not within an Alquist-Priolo Special Study Zone. There are no known faults (active, potentially active, or inactive) that traverse through the City.

With the exception of the Dunnigan Hills fault, located in the Woodland area, the Sacramento Valley has generally not been seismically active in the last 11,000 years (Holocene time). Faults with known or estimated activity during the Holocene are generally located in the San Francisco Bay Area to the west, or in the Lake Tahoe area to the east. The CBSC places all of California in the zone of greatest earthquake severity because recent studies indicate high potential for severe ground shaking.

There will always be a potential for groundshaking caused by seismic activity anywhere in California, including the Project site. In order to minimize potential damage to the buildings and site improvements, all construction in California is required to be designed in accordance with the latest seismic design standards of the California Building Code. Design in accordance with these standards would reduce any potential impact to a ***less than significant*** level. Refer to Impact 3.5-3 for a discussion of impacts related to landslides, lateral spreading, subsidence, and liquefaction.

Impact 3.5-2: Project construction and implementation has the potential to result in substantial soil erosion or the loss of topsoil (Less than Significant with Mitigation)

According to the *Custom Soils Report* prepared for the Project site, the erosion potential for the soils on the Project site is moderate, with the erosion factor Kf varying from 0.32 to 0.49. There is always the potential for human caused erosion associated with construction activities or through the operational phase of a Project.

Grading, excavation, removal of vegetation cover, and loading activities associated with construction activities could temporarily increase runoff, erosion, and sedimentation. Construction activities also could result in soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at construction sites and staging areas. Mitigation Measure 3.5-1 requires an approved SWPPP that includes best management practices for grading and preservation of topsoil. The SWPPP will be designed to control storm water quality degradation to the extent practicable using best management practices during and after construction. The Project applicant will submit the SWPPP with a Notice of Intent to the RWQCB to obtain a General Permit. The RWQCB is an agency responsible for reviewing the SWPPP with the Notice of Intent, prior to issuance of a General Permit for the discharge of storm water during construction activities.

Additionally, there is the potential for erosion associated with stormwater runoff throughout the operational phase of the Project. The potential for erosion is associated with the design of the improvements, structures, and landscaping. Mitigation Measure 3.5-2 requires the Project to incorporate design measures that treat stormwater runoff in accordance with the standards of the California Stormwater Best Management Practice New Development and Redevelopment Handbook and Section E.12 of the Phase II Small MS4 General Permit. This includes the drainage design from all paved surfaces, including streets, parking lots, driveways, and roofs, as well as landscaping.

The California Stormwater Best Management Practice New Development and Redevelopment Handbook addresses potential water quality impacts from completed development that can include the following:

- Urban activities can result in the generation of new dry-weather runoff that may contain many of the following pollutants: sediment, nutrients, bacteria and viruses, oil and grease, metals, organics, pesticides, and trash;

- Impervious surfaces associated with development, such as streets, rooftops, and parking lots, prevent runoff infiltration and increase the rate and volume of stormwater runoff that may increase downstream erosion potential and associated potential water quality impairment;
- Urban activities and increased impervious surfaces which can increase the concentration and/or total load of many of the pollutants listed above in wet weather stormwater runoff.

Practices that reduce erosion and help retain water on-site include incorporating organic amendments into disturbed soils after construction, retaining native vegetation, covering soil during revegetation, providing street trees, drainage basin maintenance, and more. Compliance with the California Stormwater Best Management Practice New Development and Redevelopment Handbook would ensure that the storm drain system does not increase flooding and erosion potential.

With the implementation of the following mitigation measures, the Project would have a ***less than significant*** impact relative to this topic.

MITIGATION MEASURE(S)

Mitigation Measure 3.5-1: *Prior to any site disturbance, the Project proponent shall submit a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) to the RWQCB in accordance with the NPDES General Construction Permit requirements. The SWPPP shall be designed to control pollutant discharges utilizing Best Management Practices (BMPs) and technology to reduce erosion and sediments. BMPs may consist of a wide variety of measures taken to reduce pollutants in stormwater runoff from the Project site. Measures shall include temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) that will be employed to control erosion from disturbed areas. Final selection of BMPs will be subject to approval by the City of Rancho Cordova and the RWQCB. The SWPPP will be kept on site during construction activity and will be made available upon request to representatives of the RWQCB.*

Impact 3.5-3: The Project has the potential to be located on a geologic unit or soil that is unstable, or that would become unstable as a result of Project implementation, and potentially result in landslide, lateral spreading, subsidence, liquefaction or collapse (Less than Significant with Mitigation)

The on-site soils include: Fiddyment fine sandy loam, 1-8% slopes; Hicksville gravelly loam, 0-2% slopes; Red Bluff-Redding complex, 0-5% slopes; Redding loam, 2-8% slopes; and Redding gravelly loam, 0-8% slopes, MLRA 17. These soils are well or moderately well drained with very slow to slow permeability. According to the NRCS Web Soil Survey, these soils are rated as “somewhat limited” for development of dwellings and commercial buildings.

LANDSLIDES

Landslides include rockfalls, deep slope failure, and shallow slope failure. Factors such as the geological conditions, drainage, slope, vegetation, and others directly affect the potential for landslides. One of the most common causes of landslides is construction activity that is associated with road building (i.e. cut and fill). The potential for landslides is considered remote in the Sacramento Valley floors due to the lack of significant slopes. For this reason, the probability of landslides occurring on the Project site is low.

LATERAL SPREADING

Lateral spreading typically results when ground shaking moves soil toward an area where the soil integrity is weak or unsupported, and it typically occurs on the surface of a slope, although it does not occur strictly on steep slopes. Oftentimes, lateral spreading is directly associated with areas of liquefaction. Areas in the region that are susceptible to this hazard are located along creeks or open water bodies, or within the foothills to the west. The potential for lateral spreading to occur during or after seismic events is considered to be low due to the distance of active faults from the Project site.

SUBSIDENCE

Sacramento County is affected by five causes of land subsidence: 1) compaction of unconsolidated soils from earthquakes; 2) compaction by heavy structures; 3) erosion of peat soils; 4) peat oxidation; and 5) groundwater withdrawal. Minor land subsidence was observed and recorded in the County between 1912 and the mid-1960's for all groundwater basins underlying the County. However, subsidence did not exceed 0.40-feet during this time frame. The Project site contains creek banks, and areas of low soil bearing strength. According to the City's General Plan EIR, the likeliness of subsidence in the City's Planning Area is considered very low.

LIQUEFACTION

Soil liquefaction results from loss of strength during cyclic loading, such as imposed by earthquakes. Soils most susceptible to liquefaction are clean, loose, saturated, uniformly graded, fine-grained sands. It is unlikely that soils on the Project site would be subject to liquefaction in the event of an earthquake because the Project site is underlain by relatively stable Pleistocene-age soils, and the potential seismic sources are a relatively long distance away.

According to the Geotechnical Engineering Report prepared for the Project site (Wallace-Kuhl, 2016), groundwater at the site is greater than 50 feet below grades, and saturated soils were not encountered during site exploration activities. Soils will likely remain unsaturated during the majority of the year, and are thus not considered susceptible to liquefaction. The silty sands, and sands are susceptible to seismic compression. While liquefaction potential at the site is considered very low, there is the potential for some limited settlement associated with the potential for low to moderate ground shaking that could occur at the site. The Preliminary Geotechnical Engineering Report recommended that the expected total and differential settlements of soil be evaluated in more detail in the final geotechnical engineering report.

CORROSIVITY

The California Department of Transportation Corrosion and Structural Concrete Field Investigation Branch, 2012 Corrosion Guidelines, considers a site to be corrosive to foundation elements if one or more of the following conditions exists for the representative soil and/or water samples taken: has a chloride concentration greater than or equal to 500 parts per million (ppm), sulfate concentration greater than or equal to 2000 ppm, or a pH of 5.5 or less (Caltrans, 2012). The Preliminary Geotechnical Engineering Report prepared for the Project identified soil corrosivity testing results for the Project site, which included a pH of 5.22 for the soil sample tested. While the chloride and sulfate levels (6.5 and 1.9 ppm, respectively) were well below the levels identified for corrosivity concerns, the pH of the Project site is considered potentially corrosive based on the California Department of Transportation 2012 Corrosion Guidelines.

CONCLUSION

While the potential for landslides, lateral spreading, subsidence, and liquefaction are low at the site, the potential for soils instability associated with settlement to occur associated with potential groundshaking and the corrosivity is a potentially significant impact. Mitigation Measure 3.5-2 below would be required to address this impact once design-level details (i.e., foundation planning and lot layouts) are available for future phases of the Project. This mitigation measure would mitigate this potential impact related to unstable soils because the design-level geotechnical engineering report would include compaction and subgrade specifications for the site-specific soil conditions. The soil and groundwater conditions would be determined through laboratory test data and exploration data to be completed by a licensed Geotechnical Engineer. Overall, it was determined that the Project site was suitable for the proposed types of development, and with implementation of the following mitigation measure, the proposed Project would have a ***less than significant*** impact relative to this topic.

MITIGATION MEASURE(S)

Mitigation Measure 3.5-2*: Prior to final design approval and issuance of building permits for each phase of the Project, the Project applicant shall submit to the City of Rancho Cordova Building and Safety Division, for review and approval, a design-level geotechnical engineering report produced by a California Registered Civil Engineer or Geotechnical Engineer. The design-level report shall address, at a minimum, the following:*

- *Compaction specifications and subgrade preparation for onsite soils;*
- *Structural foundations, including concrete design that addresses potential soils corrosivity;*
- *Grading practices; and*
- *Expansive/unstable soils.*

The design-level geotechnical engineering report shall include a summary of the site, soil, and groundwater conditions, seismicity, laboratory test data, exploration data and a site plan showing exploratory locations and improvement limits. The report shall include borings/test pits for park sites and include recommendations for park site development, including the potential to amend soils, if necessary, during the preliminary grading of the Project site during the first phase of

construction activities. The report shall be signed by a licensed California Geotechnical Engineer. Design-level recommendations shall be included in the foundation and improvement plans and approved by the City of Rancho Cordova Public Works Department prior to issuance of any building permits.

Impact 3.5-4: The Project would not be located on expansive soil creating substantial risks to life or property (Less than Significant)

Expansive soils are those that undergo volume changes as moisture content fluctuates; swelling substantially when wet or shrinking when dry. Soil expansion can damage structures by cracking foundations, causing settlement and distorting structural elements. Expansion is a typical characteristic of clay-type soils. Expansive soils shrink and swell in volume during changes in moisture content, such as a result of seasonal rain events, and can cause damage to foundations, concrete slabs, roadway improvements, and pavement sections.

As shown in Figure 3.5-3, the expansive potential of the Project site soils is low. According to the Geotechnical Engineering Report prepared for the Project site (Wallace-Kuhl, 2016), laboratory test results performed on Project site soil samples collected in the upper two to three feet indicate that these soils typically have a plasticity index of less than 15 and can be considered to have a low expansion potential. The soils beneath about two feet typically have a plasticity index of greater than 15, and should be considered to have a low to moderate expansion potential. Additional testing of the clay and silty/clay should be conducted to confirm the expansive potential of this soil layer prior to final design. These soils were typically encountered in the northwestern area of the property, with the presence of these soils less prominent to the south and east.

Implementation of Mitigation Measure 3.5-2 requires submittal of a design-level geotechnical engineering report which will include geotechnical recommendations to address the potential effects of the expansive clays present on the Project site. Implementation of the Mitigation Measure 3.5-2 would ensure that the Project would have a ***less than significant*** impact relative to this topic.

Impact 3.5-5: Project implementation has the potential to directly or indirectly destroy a unique paleontological resource (Less than Significant with Mitigation)

The field surveys conducted for the Project did not reveal any surface evidence of paleontological resources on the Project site. The Project site is not expected to contain subsurface paleontological resources; however, it is possible that undiscovered paleontological resources could be encountered during ground-disturbing activities.

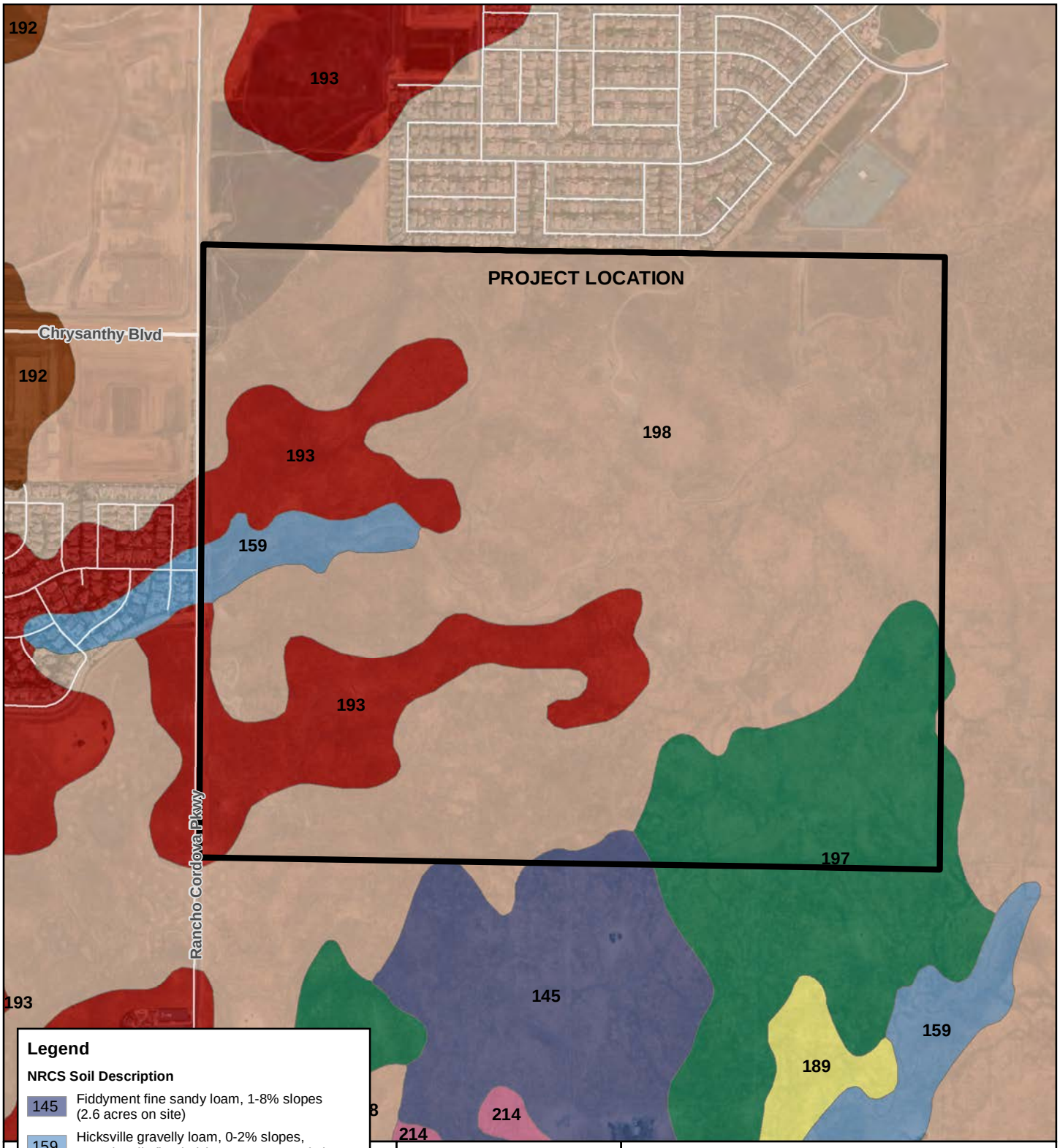
Damage to or destruction of a paleontological resource would be considered a potentially significant impact under local, state, or federal criteria. Implementation of Mitigation Measure 3.5-3 would ensure steps would be taken to reduce impacts to paleontological resources in the event that they are discovered during construction. This mitigation measure would reduce this impact to a ***less-than-significant*** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.5-3: *If any paleontological resources are found during grading and construction activities, all work shall be halted immediately within a 200-foot radius of the discovery until a qualified paleontologist has evaluated the find.*

Work shall not continue at the discovery site until the paleontologist evaluates the find and makes a determination regarding the significance of the resource and identifies recommendations for conservation of the resource, including preserving in place or relocating on the Project site, if feasible, or collecting the resource to the extent feasible and documenting the find with the University of California Museum of Paleontology.

This page left intentionally blank.



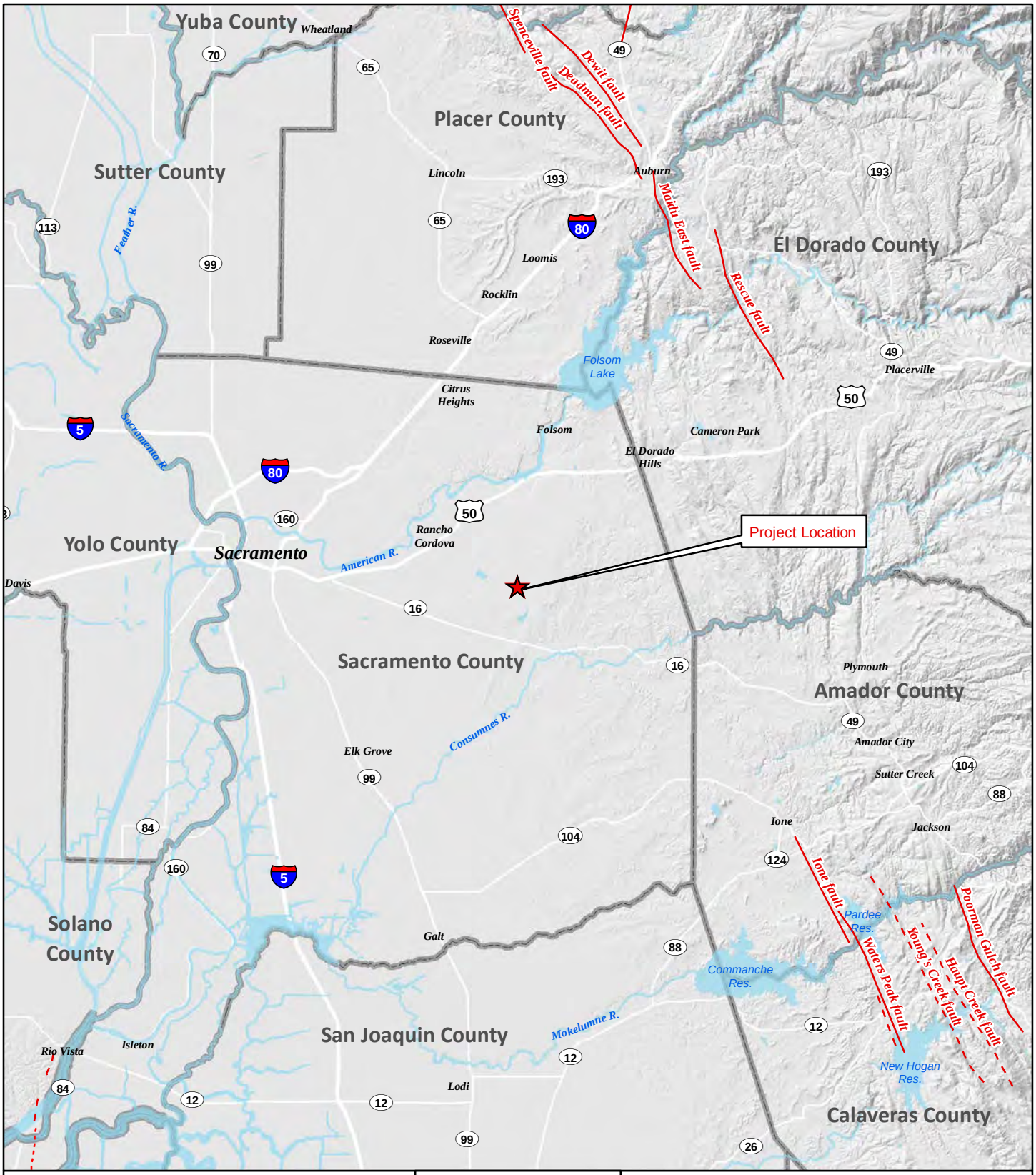
Data sources: Sacramento County GIS; ArcGIS Online World Imagery Map Service. NRCS Web Soil Survey, Sacramento County, California (CA067). Map date: July 16, 2018.

THE RANCH
SACRAMENTO COUNTY, CALIFORNIA

Figure 3.5-1. Project Site Soils

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.



Legend

Quaternary Faults

- Well-constrained
- Moderately-constrained
- Inferred

Data sources: US Geologic Survey; CalAtlas; Open Streets. Map date: July 16, 2018.

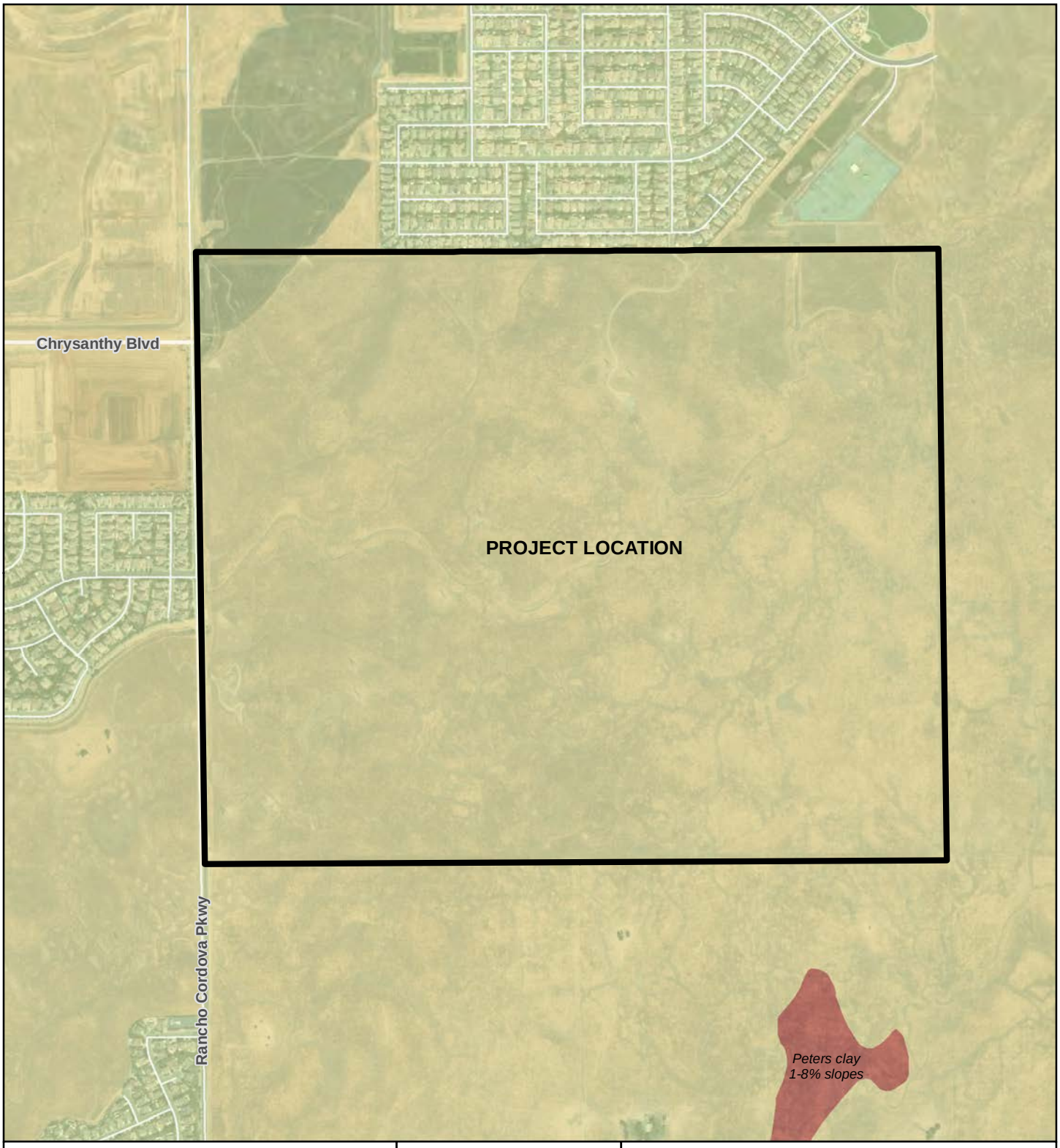
0 2½ 5
Miles

THE RANCH
SACRAMENTO COUNTY, CALIFORNIA

Figure 3.5-2. Known Faults in the Project Area

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.



Legend

Shrink-Swell Potential*

- Low Potential
- High Potential

**Shrink-Swell Potential is determined by linear extensibility. Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Soils are considered to have low potential when the linear extensibility is less than 3%, moderate if 3-6%, high if 6-9%, and very high if greater than 9%.*

Data sources: Sacramento County GIS; ArcGIS Online World Imagery Map Service. NRCS Web Soil Survey, Sacramento County, California (CA067). Map date: July 16, 2018.

N

0 400 800

Feet

1:12,000

THE RANCH
SACRAMENTO COUNTY, CALIFORNIA

Figure 3.5-3. Shrink-Swell Potential of Soils

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.

This section discusses regional greenhouse gas (GHG) emissions, climate change, and energy conservation impacts that could result from implementation of the Project. This section provides a background discussion of greenhouse gases and climate change linkages and effects of global climate change. This section also provides background discussion on energy use of the Project. This section is organized with an existing setting, regulatory setting, approach/methodology, and impact analysis.

The analysis and discussion of the GHG, climate change, and energy conservation impacts in this section focuses on the Project's consistency with local, regional, statewide, and federal climate change and energy conservation planning efforts and discusses the context of these planning efforts as they relate to the Project. Disclosures of the Project's estimated energy usage and greenhouse gas emissions are provided.

Emissions of GHGs have the potential to adversely affect the environment in a cumulative context. The emissions from a single project will not cause global climate change; however, GHG emissions from multiple projects throughout the world could result in a cumulative impact with respect to global climate change. Therefore, the analysis of GHGs and climate change presented in this section is presented in terms of the Project's contribution to cumulative impacts and potential to result in cumulatively considerable impacts related to GHGs and climate change.

Comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic from the Sacramento Metropolitan Air Quality Management District (SMAQMD) (July 13, 2018) and the Sacramento Municipal Utility District (SMUD) (August 6, 2018). Each of the comments related to this topic are addressed within this section.

3.6.1 ENVIRONMENTAL SETTING

GREENHOUSE GASES AND CLIMATE CHANGE LINKAGES

Various gases in the Earth's atmosphere, classified as atmospheric GHGs, play a critical role in determining the Earth's surface temperature. Solar radiation enters Earth's atmosphere from space, and a portion of the radiation is absorbed by the Earth's surface. The Earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation.

Naturally occurring greenhouse gases include water vapor (H_2O), carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and ozone (O_3). Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also greenhouse gases, but they are, for the most part, solely a product of industrial activities. Although the direct greenhouse gases CO_2, CH_4, and N_2O occur naturally in the atmosphere, human activities have changed their atmospheric concentrations. From the pre-industrial era (i.e., ending about 1750) to 2011, concentrations of these three greenhouse gases have increased globally by 40, 150, and 20 percent, respectively (IPCC, 2013).

Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now

retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are CO_2, CH_4, O_3, water vapor, N_2O, and chlorofluorocarbons (CFCs).

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. In California, the transportation sector is the largest emitter of GHGs, followed by the industrial sector (California Energy Commission, 2018a).

As the name implies, global climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern, respectively. California produced approximately 440 million gross metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2016 (California Energy Commission, 2018a). To meet the annual statewide targets set by the California Air Resources Board, California would need to reduce emissions to below 431 $MMTCO_2e$ by 2020, and to below 260 $MMTCO_2e$ by 2030 (California Air Resources Board, 2017).

Carbon dioxide equivalents are a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential of a GHG, is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2016, accounting for 41% of total GHG emissions in the state. This category was followed by the industrial sector (23%), the electricity generation sector (including both in-state and out of-state sources) (16%), the agriculture sector (8%), the residential energy consumption sector (7%), and the commercial energy consumption sector (5%) (California Energy Commission, 2018a).

EFFECTS OF GLOBAL CLIMATE CHANGE

The effects of increasing global temperature are far-reaching and extremely difficult to quantify. The scientific community continues to study the effects of global climate change. In general, increases in the ambient global temperature as a result of increased GHGs are anticipated to result in rising sea levels, which could threaten coastal areas through accelerated coastal erosion, threats to levees and inland water systems and disruption to coastal wetlands and habitat.

If the temperature of the ocean warms, it is anticipated that the winter snow season would be shortened. Snowpack in the Sierra Nevada provides both water supply (runoff) and storage (within the snowpack before melting), which is a major source of supply for the state. The snowpack portion of the supply could potentially decline by 50% to 75% by the end of the 21st century (National Resources Defense Council, 2014). This phenomenon could lead to significant challenges securing an adequate water supply for a growing state population. Further, the increased ocean

temperature could result in increased moisture flux into the state; however, since this would likely increasingly come in the form of rain rather than snow in the high elevations, increased precipitation could lead to increased potential and severity of flood events, placing more pressure on California's levee/flood control system.

Sea level has risen approximately seven inches during the last century and it is predicted to rise an additional 22 to 35 inches by 2100, depending on the future GHG emissions levels (California Environmental Protection Agency, 2010). If this occurs, resultant effects could include increased coastal flooding, saltwater intrusion and disruption of wetlands. As the existing climate throughout California changes over time, mass migration of species, or failure of species to migrate in time to adapt to the perturbations in climate, could also result. According to the most recent California Climate Change Assessment (*California's Fourth Climate Change Assessment*) (2019), the impacts of global warming in California are anticipated to include, but are not limited to, the following.

Wildfires

In recent years, the area burned by wildfires has increased in parallel with increasing air temperatures. Wildfires have also been occurring at higher elevations in the Sierra Nevada mountains, a trend which is expected to continue under future climate change. Climate change will likely modify the vegetation in California, affecting the characteristics of fires on the land. Land use and development patterns also play an important role in future fire activity. Because of these complexities, projecting future wildfires is complicated, and results depend on the time period for the projection and what interacting factors are included in the analysis. Because wildfires are affected by multiple and sometimes complex drivers, projections of wildfire in future decades in California range from modest changes from historical conditions to relatively large increases in wildfire regimes.

Public Health

Nineteen heat-related events occurred from 1999 to 2009 that had significant impacts on human health, resulting in about 11,000 excess hospitalizations. However, the National Weather Service issued Heat Advisories for only six of the events. Heat-Health Events (HHEs), which better predict risk to populations vulnerable to heat, will worsen drastically throughout the state: by midcentury, the Central Valley is projected to experience average Heat-Health Events that are two weeks longer, and HHEs could occur four to ten times more often in the Northern Sierra region.

Higher temperatures are expected to increase the frequency, duration, and intensity of conditions conducive to air pollution formation. Climate change poses direct and indirect risks to public health, as people will experience earlier death and worsening illnesses. Air quality could be further compromised by increases in wildfires, which emit fine particulate matter that can travel long distances depending on wind conditions.

Energy Resources

Higher temperatures will increase annual electricity demand for homes, driven mainly by the increased use of air conditioning units. High demand is projected in inland and Southern California,

and more moderate increases are projected in cooler coastal areas. However, the increased annual residential energy demand for electricity is expected to be offset by reduced use of natural gas for space heating. Increases in peak hourly demand during the hot months of the year could be more pronounced than changes in annual demand. This is a critical finding for California's electric system, because generating capacity must match peak electricity demand.

Water Supply

A vast network of man-made reservoirs and aqueducts capture and transport water throughout the state from northern California rivers and the Colorado River. The current distribution system relies on Sierra Nevada snow pack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snow pack, increasing the risk of summer water shortages.

The state's water supplies are also at risk from rising sea levels. An influx of saltwater would degrade California's estuaries, wetlands, and groundwater aquifers. Saltwater intrusion caused by rising sea levels is a major threat to the quality and reliability of water within the southern edge of the Sacramento/San Joaquin River Delta, a major state fresh water supply.

Current management practices for water supply and flood management in California may need to be revised for a changing climate. This is in part because such practices were designed for historical climatic conditions, which are changing and will continue to change during the rest of this century and beyond. As one example, the reduction in the Sierra Nevada snowpack, which provides natural water storage, will have implications throughout California's water management system. Even under the wetter climate projections, the loss of snow pack would pose challenges to water managers, hamper hydropower generation, and nearly eliminate all skiing and other snow-related recreational activities.

Agriculture

Increased GHG emissions are expected to cause widespread changes to the agriculture industry reducing the quantity and quality of agricultural products statewide. Although higher carbon dioxide levels can stimulate plant production and increase plant water-use efficiency, California's farmers will face greater water demand for crops and a less reliable water supply as temperatures rise.

Plant growth tends to be slow at low temperatures, increasing with rising temperatures up to a threshold. However, faster growth can result in less-than-optimal development for many crops, so rising temperatures are likely to worsen the quantity and quality of yield for a number of California's agricultural products. Products likely to be most affected include wine grapes, fruits and nuts, and milk.

Crop growth and development will be affected, as will the intensity and frequency of pest and disease outbreaks. Rising temperatures will likely aggravate ozone pollution, which makes plants more susceptible to disease and pests and interferes with plant growth.

In addition, continued global warming will likely shift the ranges of existing invasive plants and weeds and alter competition patterns with native plants. Range expansion is expected in many species while range contractions are less likely in rapidly evolving species with significant populations already established. Should range contractions occur, it is likely that new or different weed species will fill the emerging gaps. Continued global warming is also likely to alter the abundance and types of many pests, lengthen pests' breeding season, and increase pathogen growth rates.

Forests and Landscapes

Climate change will make forests more susceptible to extreme wildfires. *California's Fourth Climate Change Assessment* found that by 2100, if greenhouse gas emissions continue to rise, the frequency of extreme wildfires burning over approximately 25,000 acres would increase by nearly 50 percent, and that average area burned statewide would increase by 77 percent by the end of the century. In the areas that have the highest fire risk, wildfire insurance is estimated to see costs rise by 18 percent by 2055 and the fraction of property insured would decrease.

Moreover, continued global warming will alter natural ecosystems and biological diversity within the state. For example, alpine and sub-alpine ecosystems are expected to decline by as much as 60% to 80% by the end of the century as a result of increasing temperatures. The productivity of the state's forests is also expected to decrease as a result of global warming.

Rising Sea Levels

A new model estimates that, under mid to high sea-level rise scenarios, 31 to 67 percent of Southern California beaches may completely erode by 2100 without large-scale human interventions. Statewide damages could reach nearly $17.9 billion from inundation of residential and commercial buildings under 50 centimeters (~20 inches) of sea-level rise, which is close to the 95th percentile of potential sea-level rise by the middle of this century. A 100-year coastal flood, on top of this level of sea-level rise, would almost double the costs.

Rising sea levels, more intense coastal storms, and warmer water temperatures will increasingly threaten the state's coastal regions. Rising sea levels would inundate coastal areas with saltwater, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.

ENERGY CONSUMPTION

Energy in California is consumed from a wide variety of sources. Fossil fuels (including gasoline and diesel fuel, natural gas, and energy used to generate electricity) are most widely used form of energy in the State. However, renewable source of energy (such as solar and wind) are growing in proportion to California's overall energy mix. A large driver of renewable sources of energy in California is the State's current Renewable Portfolio Standard (RPS), which requires the State to derive at least 33% of electricity generated from renewable resources by 2020, and 50 percent by 2030.

Overall, in 2015, California's per capita energy usage was ranked 49th in the nation (U.S. EIA, 2017). Additionally, California's per capita rate of energy usage has remained relatively constant since the 1970's. Many State regulations since the 1970's, including new building energy efficiency standards, vehicle fleet efficiency measures, as well as growing public awareness, have helped to keep per capita energy usage in the State in check.

The consumption of nonrenewable energy (primarily gasoline and diesel fuel) associated with the operation of passenger, public transit, and commercial vehicles results in GHG emissions that ultimately result in global climate change. Other fuels such as natural gas, ethanol, and electricity (unless derived from solar, wind, nuclear, or other energy sources that do not produce carbon emissions) also result in GHG emissions and contribute to global climate change.

Electricity Consumption

California relies on a regional power system composed of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. Approximately 71 percent of the electrical power needed to meet California's demand is produced in the state. Approximately 29 percent of its electricity is imported from the Pacific Northwest and the Southwest (California Energy Commission, 2019). In 2010, California's in-state generated electricity was derived from natural gas (53.4 percent), large hydroelectric resources (14.6 percent), coal (1.7 percent), nuclear sources (15.7 percent), and renewable resources that include geothermal, biomass, small hydroelectric resources, wind, and solar (14.6 percent) (California Energy Commission, 2019). The percentage of renewable resources as a proportion of California's overall energy portfolio is increasing over time, as directed the State's Renewable Portfolio Standard (RPS).

According to the California Energy Commission (CEC), total statewide electricity consumption increased from 166,979 gigawatt-hours (GWh) in 1980 to 228,038 GWh in 1990, which is an estimated annual growth rate of 3.66 percent. The statewide electricity consumption in 1997 was 246,225 GWh, reflecting an annual growth rate of 1.14 percent between 1990 and 1997 (California Energy Commission, 2019). Statewide consumption was 274,985 GWh in 2010, an annual growth rate of 0.9 percent between 1997 and 2010. The Sacramento Area Council of Governments (SACOG) region consumed 18,398 GWh in 2010 (SACOG MTP/SCS 2035 Draft EIR, 2011) and 17,824 GWh in 2016 (CEC, 2016), roughly 6.7 percent of the state total. The SACOG region includes the counties of El Dorado, Placer, Sacramento, Sutter, Yolo and Yuba as well as the 22 cities within these six counties.

Oil

The primary energy source for the United States is oil, which is refined to produce fuels like gasoline, diesel, and jet fuel. Oil is a finite, nonrenewable energy source. World consumption of petroleum products has grown steadily in the last several decades. As of 2018, world consumption of oil had reached 100 million barrels per day (U.S. EIA, 2019a). The United States, with approximately five percent of the world's population, accounts for approximately 21 percent of world oil consumption, or approximately 20.5 million barrels per day (U.S. EIA, 2019b). The transportation sector relies heavily on oil. In California, petroleum based fuels currently provide

approximately 96 percent of the state's transportation energy needs (California Energy Commission, 2018b).

Natural Gas

In 2010, the SACOG region consumed 529.5 million therms of natural gas. Natural gas supplies are derived from underground sources and brought to the surface at gas wells. Once it is extracted, gas is purified and the odorant that allows gas leaks to be detected is added to the normally odorless gas. Natural gas suppliers, such as PG&E, then send the gas into transmission pipelines, which are usually buried underground. Compressors propel the gas through the pipeline system, which delivers it to homes and businesses.

The state produces approximately 12 percent of its natural gas, while obtaining 22 percent from Canada and 65 percent from the Rockies and the Southwest (California Energy Commission, 201b). In 2006, California produced 325.6 billion cubic feet of natural gas (California Energy Commission, 2019). PG&E is the largest publicly-owned utility in California and provides natural gas for residential, industrial, and agency consumers within the SACOG area, including the City of Rancho Cordova.

3.6.2 REGULATORY SETTING

FEDERAL

Clean Air Act

The Federal Clean Air Act (FCAA) was first signed into law in 1970. In 1977, and again in 1990, the law was substantially amended. The FCAA is the foundation for a national air pollution control effort, and it is composed of the following basic elements: National ambient air quality standards (NAAQS) for criteria air pollutants, hazardous air pollutant standards, state attainment plans, motor vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

The U.S. Environmental Protection Agency (USEPA) is responsible for administering the FCAA. The FCAA requires the USEPA to set NAAQS for several problem air pollutants based on human health and welfare criteria. Two types of NAAQS were established: primary standards, which protect public health, and secondary standards, which protect the public welfare from non-health-related adverse effects such as visibility reduction.

Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the Act, the National Highway Traffic and Safety Administration, which is part of the U.S. Department of Transportation (USDOT), is responsible for establishing additional vehicle standards and for revising existing standards.

Since 1990, the fuel economy standard for new passenger cars has been 27.5 mpg. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is determined on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the U.S. The Corporate Average Fuel Economy (CAFE) program, which is administered by the USEPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The USEPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. Based on the information generated under the CAFE program, the USDOT is authorized to assess penalties for noncompliance.

Energy Policy Act of 1992 (EPAct)

The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

Energy Policy Act of 2005

The Energy Policy Act of 2005 was signed into law on August 8, 2005. Generally, the act provides for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for a clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Intermodal Surface Transportation Efficiency Act (ISTEA)

ISTEA (49 U.S.C. § 101 et seq.) promoted the development of intermodal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. ISTEA contained factors that metropolitan planning organizations (MPOs), such as SACOG, were to address in developing transportation plans and programs, including some energy-related factors. To meet the ISTEA requirements, MPOs adopted explicit policies defining the social, economic, energy, and environmental values that were to guide transportation decisions in that metropolitan area. The planning process was then to address these policies. Another requirement was to consider the consistency of transportation planning with federal, state, and local energy goals. Through this requirement, energy consumption was expected to become a criterion, along with cost and other values that determine the best transportation solution.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)

SAFETEA-LU (23 U.S.C. § 507), renewed the Transportation Equity Act for the 21st Century (TEA-21) of 1998 (23 U.S.C.; 49 U.S.C.) through FY 2009. SAFETEA-LU authorized the federal surface transportation programs for highways, highway safety, and transit. SAFETEA-LU addressed the many challenges facing our transportation system today—such as improving safety, reducing traffic congestion, improving efficiency in freight movement, increasing intermodal connectivity, and protecting the environment—as well as laying the groundwork for addressing future challenges. SAFETEA-LU promoted more efficient and effective federal surface transportation programs by focusing on transportation issues of national significance, while giving state and local transportation decision makers more flexibility to solve transportation problems in their communities. SAFETEA-LU was extended in March of 2010 for nine months, and expired in December of the same year. In June 2012, SAFETEA-LU was replaced by the Moving Ahead for Progress in the 21st Century Act (MAP-21), which will take effect October 1, 2012.

U.S. Federal Climate Change Policy

According to the USEPA, "the United States government has established a comprehensive policy to address climate change" that includes slowing the growth of emissions; strengthening science, technology, and institutions; and enhancing international cooperation. To implement this policy, "the Federal government is using voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science." The federal government's goal is to reduce the greenhouse gas (GHG) intensity (a measurement of GHG emissions per unit of economic activity) of the American economy by 18 percent over the 10-year period from 2002 to 2012. In addition, the EPA administers multiple programs that encourage voluntary GHG reductions, including "ENERGY STAR", "Climate Leaders", and Methane Voluntary Programs. However, as of this writing, there are no adopted federal plans, policies, regulations, or laws directly regulating GHG emissions.

Mandatory Greenhouse Gas Reporting Rule

On September 22, 2009, EPA issued a final rule for mandatory reporting of GHGs from large GHG emissions sources in the United States. In general, this national reporting requirement will provide USEPA with accurate and timely GHG emissions data from facilities that emit 25,000 metric tons or more of CO_2 per year. This publicly available data will allow the reporters to track their own emissions, compare them to similar facilities, and aid in identifying cost effective opportunities to reduce emissions in the future. Reporting is at the facility level, except that certain suppliers of fossil fuels and industrial greenhouse gases along with vehicle and engine manufacturers will report at the corporate level. An estimated 85% of the total U.S. GHG emissions, from approximately 10,000 facilities, are covered by this final rule.

STATE

Warren-Alquist Act

The 1975 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as CEC. The Act established state policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures. The California Public Utilities Commission (CPUC) regulates privately-owned utilities in the energy, rail, telecommunications, and water fields.

Energy Action Plan

The first Energy Action Plan (EAP) emerged in 2003 from a crisis atmosphere in California's energy markets. The State's three major energy policy agencies (CEC, CPUC, and the Consumer Power and Conservation Financing Authority [established under deregulation and now defunct]) came together to develop one high-level, coherent approach to meeting California's electricity and natural gas needs. It was the first time that energy policy agencies formally collaborated to define a common vision and set of strategies to address California's future energy needs and emphasize the importance of the impacts of energy policy on the California environment.

In the October 2005 Energy Action Plan II, CEC and CPUC updated their energy policy vision by adding some important dimensions to the policy areas included in the original EAP, such as the emerging importance of climate change, transportation-related energy issues, and research and development activities. The CEC adopted an update to the EAP II in February 2008 that supplements the earlier EAPs and examines the State's ongoing actions in the context of global climate change.

State of California Energy Action Plan

The CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The current plan is the 1997 California Energy Plan. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero-emission vehicles and addressing their infrastructure needs; and encouragement of urban design that reduces VMT and accommodates pedestrian and bicycle access.

Assembly Bill 1493

In response to AB 1493, CARB approved amendments to the California Code of Regulations (CCR) adding GHG emission standards to California's existing motor vehicle emission standards. Amendments to CCR Title 13 Sections 1900 (CCR 13 1900) and 1961 (CCR 13 1961), and adoption of Section 1961.1 (CCR 13 1961.1) require automobile manufacturers to meet fleet average GHG emission limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes beginning with the 2009 model year. Emission limits are

further reduced each model year through 2016. For passenger cars and light-duty trucks 3,750 pounds or less loaded vehicle weight (LVW), the 2016 GHG emission limits are approximately 37 percent lower than during the first year of the regulations in 2009. For medium-duty passenger vehicles and light-duty trucks 3,751 LVW to 8,500 pounds gross vehicle weight (GVW), GHG emissions are reduced approximately 24 percent between 2009 and 2016.

The CARB requested a waiver of federal preemption of California's Greenhouse Gas Emissions Standards. The intent of the waiver is to allow California to enact emissions standards to reduce carbon dioxide and other greenhouse gas emissions from automobiles in accordance with the regulation amendments to the CCRs that fulfill the requirements of AB 1493. The U.S. EPA granted a waiver to California to implement its greenhouse gas emissions standards for cars.

Assembly Bill 1007

Assembly Bill 1007, (Pavley, Chapter 371, Statutes of 2005) directed the CEC to prepare a plan to increase the use of alternative fuels in California. As a result, the CEC prepared the State Alternative Fuels Plan in consultation with the state, federal, and local agencies. The plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. The Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce greenhouse gas emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Bioenergy Action Plan – Executive Order #S-06-06

Executive Order #S-06-06 establishes targets for the use and production of biofuels and biopower and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The executive order establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. The executive order also calls for the state to meet a target for use of biomass electricity.

California Executive Orders S-3-05 and S-20-06, and Assembly Bill 32

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80% below the 1990 levels by the year 2050. EO-S-20-06 establishes responsibilities and roles of the Secretary of Cal/EPA and state agencies in climate change

In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that the CARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases."

Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

EO S-13-08

EO S-13-08 was issued on November 14, 2008. The EO is intended to hasten California's response to the impacts of global climate change, particularly sea level rise, and directs state agencies to take specified actions to assess and plan for such impacts, including requesting the National Academy of Sciences to prepare a Sea Level Rise Assessment Report, directing the Business, Transportation, and Housing Agency to assess the vulnerability of the State's transportation systems to sea level rise, and requiring the Office of Planning and Research and the Natural Resources Agency to provide land use planning guidance related to sea level rise and other climate change impacts.

The order also required State agencies to develop adaptation strategies to respond to the impacts of global climate change that are predicted to occur over the next 50 to 100 years. The adaption strategies report summarizes key climate change impacts to the State for the following areas: public health; ocean and coastal resources; water supply and flood protection; agriculture; forestry; biodiversity and habitat; and transportation and energy infrastructure. The report recommends strategies and specific responsibilities related to water supply, planning and land use, public health, fire protection, and energy conservation.

Assembly Bill 32 - Climate Change Scoping Plan

On December 11, 2008, the CARB adopted its *Climate Change Scoping Plan* (Scoping Plan), which functions as a roadmap of the CARB's plans to achieve GHG reductions in California required by Assembly Bill (AB) 32 through subsequently enacted regulations. The Scoping Plan contains the main strategies California will implement to reduce carbon dioxide-equivalent (CO_2e) emissions by 169 million metric tons (MMT), or approximately 30 percent, from the state's projected 2020 emissions level of 596 MMT of CO_2e under a business-as-usual scenario. (This is a reduction of 42 MMT CO_2e, or almost 10 percent, from 2002–2004 average emissions, but requires the reductions in the face of population and economic growth through 2020.) The Scoping Plan also breaks down the amount of GHG emissions reductions the CARB recommends for each emissions sector of the state's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_2e);
- the Low-Carbon Fuel Standard (15.0 MMT CO_2e);
- energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO_2e); and
- a renewable portfolio standard for electricity production (21.3 MMT CO_2e).

The CARB updated the Scoping Plan in 2013 (*First Update to the Scoping Plan*) and again in 2017 (the *Final Scoping Plan*). The 2013 Update built upon the initial Scoping Plan with new strategies and recommendations, and also set the groundwork to reach the long-term goals set forth by the

state. Successful implementation of existing programs (as identified in previous iterations of the Scoping Plan) has put California on track to meet the 2020 target. The 2017 Update expands the scope of the plan further by focusing on the strategy for achieving the state's 2030 GHG target of 40 percent emissions reductions below 1990 levels (to achieve the target codified into law by SB 32), and substantially advances toward the state's 2050 climate goal to reduce GHG emissions by 80 percent below 1990 levels.

The 2017 Update relies on the preexisting programs paired with an extended, more stringent Cap-and-Trade Program, to delivery climate, air quality, and other benefits. The 2017 Update identifies new technologically feasible and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health.

Senate Bill 32

Senate Bill 32, which passed into law in 2016, sets the target of reducing greenhouse gas emissions to 40 percent below the 1990 level by the year 2030. SB 32 extends the original set of greenhouse gas targets provided by the passage of AB 32 (the Global Warmings Solutions Act of 2006). This new target sets an aggressive goalpost, helping the State along its pathway to achieve its longer-term goal of an 80 percent reduction in greenhouse gas emissions by the year 2050.

Senate Bill 743

SB 743, passed into law in 2013, changes the way that public agencies evaluate the transportation impacts of projects under CEQA. The proposed revisions to the State CEQA Guidelines would establish new criteria for determining the significance of a project's transportation impacts that will more appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of GHGs. The 2017 Update to the Scoping Plan identified that slower VMT growth from more efficient land use development patterns would promote achievement of the state's climate goals.

As detailed in SB 743, the Governor's Office of Planning and Research (OPR) was tasked with developing potential metrics to measure transportation impacts and replace the use of delay and level of service (LOS). More detail about SB 743 is provided in the setting Chapter 17, "Traffic and Circulation."

In December 2018, OPR released its final changes to the CEQA Guidelines, including the addition of Section 15064.3 that would implement SB 743. In support of these changes, OPR also published its Technical Advisory on Evaluating Transportation Impacts in CEQA, which recommends that the transportation impact of a project be based on whether it would generate a level of vehicle miles traveled (VMT) per capita (or VMT per employee) that is 15 percent lower than existing development in the region. OPR's technical advisory explains that this criterion is consistent with Section 21099 of the California Public Resources Code, which states that the criteria for determining significance must "promote the reduction in greenhouse gas emissions". It is also consistent with the statewide per capita VMT reduction target developed by Caltrans in its

Strategic Management Plan, which calls for a 15 percent reduction in per capita VMT, compared to 2010 levels, by 2020. Additionally, the California Air Pollution Control Officers Association (CAPCOA) determined that a 15 percent reduction in VMT is typically achievable for projects. CARB's First Update to the Climate Change Scoping Plan also called for local governments to set communitywide GHG reduction targets of 15 percent below then-current levels by 2020. Although not required, a lead agency may elect to be governed by the provisions of Section 15064.3 immediately. However, the provisions of Section 15064.3 do not apply statewide until July 1, 2020.

Executive Order B-48-18: Zero-Emission Vehicles

In January 2018, EO B-48-18 was signed into law and requires all State entities to work with the private sector to have at least 5 million zero-emission vehicles (ZEVs) on the road by 2030, as well as install 200 hydrogen fueling stations and 250,000 electric vehicle charging stations by 2025. It specifies that 10,000 of the electric vehicle charging stations should be direct current fast chargers. This Executive Order also requires all State entities to continue to partner with local and regional governments to streamline the installation of ZEV infrastructure. The Governor's Office of Business and Economic Development is required to publish a Plug-in Charging Station Design Guidebook and update the 2015 Hydrogen Station Permitting Guidebook to aid in these efforts. All State entities are required to participate in updating the 2016 Zero-Emissions Vehicle Action Plan (Governor's Interagency Working Group on Zero-Emission Vehicles 2016) to help expand private investment in ZEV infrastructure with a focus on serving low-income and disadvantaged communities. Additionally, all State entities are to support and recommend policies and actions to expand ZEV infrastructure at residential uses through the Low Carbon Fuel Standard Program, and recommend how to ensure affordability and accessibility for all drivers.

Assembly Bill 2076: California Strategy to Reduce Petroleum Dependence

In response to the requirements of Assembly Bill (AB) 2076 (Chapter 936, Statutes of 2000), the CEC and the CARB developed a strategy to reduce petroleum dependence in California. The strategy, *Reducing California's Petroleum Dependence*, was adopted by the CEC and CARB in 2003. The strategy recommends that California reduce on-road gasoline and diesel fuel demand to 15 percent below 2003 demand levels by 2020 and maintain that level for the foreseeable future; the Governor and Legislature work to establish national fuel economy standards that double the fuel efficiency of new cars, light trucks, and sport utility vehicles (SUVs); and increase the use of non-petroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030.

Assembly Bill 2188: Solar Permitting Efficiency Act

Assembly Bill (AB) 2188, enacted in California in 2015, required local governments to adopt a solar ordinance by September 30, 2015 that creates a streamlined permitting process that conforms to the bests practices for expeditious and efficient permitting of small residential rooftop solar systems. The act is designed to lower the cost of solar installations in California and further expand the accessibility of solar to more California homeowners. The bulk of the time and cost savings associated with a streamlined permitting process comes from the use of a standardized eligibility checklist and a simplified plan. This bill also shortens the number of days for those seeking Homeowner's Association (HOA) approval for a written denial of a proposed solar installation.

Governor's Low Carbon Fuel Standard (Executive Order #S-01-07)

Executive Order #S-01-07 establishes a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 through establishment of a Low Carbon Fuel Standard. The Low Carbon Fuel Standard is incorporated into the State Alternative Fuels Plan and is one of the proposed discrete early action GHG reduction measures identified by the CARB pursuant to AB 32.

Senate Bill 97

Senate Bill (SB) 97 (Chapter 185, 2007) required OPR to develop recommended amendments to the State CEQA Guidelines for addressing greenhouse gas emissions. OPR prepared its recommended amendments to the State CEQA Guidelines to provide guidance to public agencies regarding the analysis and mitigation of greenhouse gas emissions and the effects of greenhouse gas emissions in draft CEQA documents. The Amendments became effective on March 18, 2010.

Senate Bill 375

Senate Bill (SB) 375 (Stats. 2008, ch. 728) (SB 375) was built on AB 32 (California's 2006 climate change law). SB 375's core provision is a requirement for regional transportation agencies to develop a Sustainable Communities Strategy (SCS) in order to reduce GHG emissions from passenger vehicles. The SCS is one component of the existing Regional Transportation Plan (RTP).

The SCS outlines the region's plan for combining transportation resources, such as roads and mass transit, with a realistic land use pattern, in order to meet a state target for reducing GHG emissions. The strategy must take into account the region's housing needs, transportation demands, and protection of resource and farmlands.

Additionally, SB 375 modified the state's Housing Element Law to achieve consistency between the land use pattern outlined in the SCS and the Regional Housing Needs Assessment allocation. The legislation also substantially improved cities' and counties' accountability for carrying out their housing element plans.

Finally, SB 375 amended the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) to ease the environmental review of developments that help reduce the growth of GHG emissions.

Executive Order B-30-15

On April 29, 2015, Governor Jerry Brown issued Executive Order (EO) B-30-15, which establishes a State GHG reduction target of 40 percent below 1990 levels by 2030. The new emission reduction target provides for a mid-term goal that would help the State to continue on course from reducing GHG emissions to 1990 levels by 2020 (per AB 32) to the ultimate goal of reducing emissions 80 percent under 1990 levels by 2050 (per EO S-03-05). This is in line with the scientifically established levels needed in the U.S. to limit global warming below 2 degrees Celsius – the warming threshold at which scientists say there will likely be major climate disruptions. EO B-30-15 also addresses the need for climate adaptation and directs State government to:

- Incorporate climate change impacts into the State's Five-Year Infrastructure Plan;
- Update the Safeguarding California Plan, the State climate adaptation strategy, to identify how climate change will affect California infrastructure and industry and what actions the State can take to reduce the risks posed by climate change;
- Factor climate change into State agencies' planning and investment decisions; and
- Implement measures under existing agency and departmental authority to reduce GHG emissions.

Advanced Clean Cars Program

In January 2012, the CARB approved the Advanced Clean Cars program which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of zero-emission vehicles, into a single package of standards for vehicle model years 2017 through 2025. The new rules strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's zero-emission vehicle regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of zero-emission hydrogen fuel cell vehicles planned by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the state. The program will have significant energy demand implications as battery, fuel cell, and/or plug-in hybrid electric vehicle sales increase overtime, creating new demand for electricity services both in residential and commercial buildings (e.g. charging stations) as well as demand for new EV and hydrogen fuel cell charging stations. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. According to the CARB, by 2025, when the rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions than the statewide fleet in 2016.

California Building Energy Efficiency Standards

Title 24, Part 6 of the California Code of Regulations, known as the Building Energy Efficiency Standards (Standards), was established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. On January 1, 2010, the California Building Standards Commission adopted CALGreen and became the first state in the United States to adopt a statewide green building standards code.

The 2016 update to the California Building Energy Efficiency Standards (the current version of the Standards) went into effect on January 1, 2017. The Standards are divided into three basic sets. First, there is a basic set of mandatory requirements that apply to all buildings. Second, there is a set of performance standards – the energy budgets – that vary by climate zone (of which there are 16 in California) and building type; thus, the Standards are tailored to local conditions. Finally, the third set constitutes an alternative to the performance standards, which is a set of prescriptive packages that are basically a recipe or a checklist compliance approach.

Compared with the previous version of the Standards, the 2016 Standards are expected to reduce statewide annual electricity consumption by approximately 281 gigawatt-hours per year, and natural gas consumption by 16 million therms per year, which is equivalent to a reduction in GHG emissions of approximately 160,000 MT CO_2e/year. The forthcoming update to the Standards (the 2019 Standards) will become effective on January 1, 2020, and will further increase energy efficiency requirements for new development beyond the 2016 update.

CEQA Guidelines Appendix F

In order to ensure that energy implications are considered in project decisions, Appendix F of the CEQA Guidelines requires that EIRs include a discussion of the potential energy impacts of projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy. The goal of conserving energy implies the wise and efficient use of energy.

LOCAL

Sacramento Area Local Council of Governments

The SACOG Board, which is the local metropolitan planning organization that covers the six-county area in the Sacramento region, including the City of Ranch Cordova, adopted the 2012 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) in April 2012. An update to the 2012 MTP/SCS (the "2016" MTP/SCS), with a focus on implementation of the goals established in the 2012 MTP/SCS, was adopted by the SACOG Board in February 2016. A program-level EIR addressing the environmental impacts of the 2016 MTP/SCS was also prepared and certified. The SCS portion of the MTP/SCS identifies polices and strategies to reduce GHG emissions from passenger vehicles to targets set by the CARB. Pursuant to SB 375, SACOG was tasked by the CARB to achieve a 7 percent per capita reduction in passenger-vehicle generated transportation emissions by 2020 and a 16 percent per capita reduction by 2035 from 2005, which the CARB confirmed the region would achieve by implementing its Sustainable Communities Strategy. SACOG's 2012-2035 MTP/SCS projects (as identified in the 2012 MTP/SCS) are estimated to exceed the CARB's targets with anticipated per capita reductions of 10 percent by 2020 and 16 percent by 2035 from 2005 levels [23.0 pounds (lb) CO_2 per capita per day]. The SACOG 2016 MTP/SCS reaffirmed these targets. The CARB verified SACOG's modeled CO2 emissions reductions and affirmed that the SCS meets the adopted per capita GHG emissions reduction targets for years 2020 and 2035.

Rancho Cordova General Plan

The Rancho Cordova General Plan contains the following goals and policies that are relevant to greenhouse gases, climate change, and energy:

AIR QUALITY ELEMENT

Goal AQ.2: Support land use patterns and densities that lessen air quality impacts.

Policy AQ.2.1: Promote strategic land use patterns for businesses that reduce the number and length of motor vehicle trips and that encourage multiple forms of transportation for employees and patrons.

Policy AQ.2.2: Encourage mixed-use developments that put residences in close proximity to services, employment, transit, schools, and civic facilities/services.

Policy AQ.2.3: Encourage infill development as a way to reduce vehicle trips and improve air quality.

Policy AQ.2.4: Maximize air quality benefits through selective use of landscaping vegetation that is low in emission of volatile organic compounds, and through revegetation of appropriate areas.

Goal AQ.3: Support multiple forms of transportation and a circulation system design that reduces vehicle trips and emissions.

Policy AQ.3.1: Promote walking and bicycling as viable forms of transportation to services, shopping, and employment.

Policy AQ.3.2: Promote mass transit as an alternative to single-occupant motor vehicle travel.

Policy AQ.3.3: Involve local businesses in creating, maintaining, or promoting mass transit opportunities and reducing vehicle emissions.

Policy AQ.3.4: Emphasize "demand management" strategies that seek to reduce single-occupant vehicle use in order to achieve state and federal air quality plan objectives.

Goal AQ.4: Support energy conservation, the use of alternative fuels, clean vehicles and industries to reduce air quality impacts.

Policy AQ.4.1: Promote improved air quality benefits through energy conservation measures for new and existing development.

Policy AQ.4.2: Support vehicle improvements and the use of clean vehicles that reduce emissions and improve air quality.

Policy AQ.4.4: Support SMAQMD's program of retrofitting construction equipment.

LAND USE ELEMENT

Goal LU.1: Achieve a balanced and integrated land use pattern throughout the community.

Policy LU.1.4: Promote high quality, efficient, and cohesive land utilization that minimizes negative impacts (e.g., traffic congestion and visual blight) and environmental hazards (e.g. flood, soil instability) on adjacent neighborhoods and infrastructure and preserve existing and future residential neighborhoods from encroachment of incompatible activities and land uses.

City of Rancho Cordova Municipal Code

Chapter 16.07 of the City of Rancho Cordova Municipal Code (Municipal Code) provides for an expedited, streamlined solar permitting process that complies with the Solar Rights Act and AB 2188 (Chapter 521, Statutes 2013, California Government Code Section 65850.5) in order to achieve timely and cost-effective installations of small residential rooftop solar energy systems. The provisions of this chapter encourage the use of solar systems by removing unreasonable barriers, minimizing costs to property owners and the city, and expanding the ability of property owners to install solar energy systems.

Additionally, Chapter 10.64 of the Municipal Code establishes requirements and procedures whereby major employers can develop and implement programs designed to reduce the number of employee vehicle commute trips as part of a broad city of Rancho Cordova program to achieve the following objectives:

A. Reduce peak-hour traffic circulation and congestion by reducing the number of single-occupant motor vehicle trips associated with home-to-work commuting.

B. Reduce or delay the need for major transportation facility improvements by making more efficient use of existing facilities.

C. Reduce future air pollution concentrations and strive towards meeting federal ambient air pollution standards by reducing the number of single-occupant motor vehicle trips associated with home-to-work commuting.

D. Reduce the consumption of energy for transportation uses and thereby contribute to the national policy to increase energy self-sufficiency.

3.6.3 IMPACTS AND MITIGATION MEASURES

GHG THRESHOLDS OF SIGNIFICANCE AND METHODOLOGY

Analysis Approach

Cumulative impacts are the collective impacts of one or more past, present, and future projects that, when combined, result in adverse changes to the environment. In determining the significance of a project's contribution to anticipated adverse future conditions, a lead agency should generally undertake a two-step analysis. The first question is whether the *combined* effects from *both* the Project *and* other projects would be cumulatively significant. If the agency answers this inquiry in the affirmative, the second question is whether "the project's *incremental* effects are cumulatively considerable" and thus significant in and of themselves. The cumulative project list for this issue (climate change) comprises anthropogenic (i.e., human-made) GHG emissions sources across the globe and no project alone would reasonably be expected to contribute to a noticeable incremental change to the global climate. However, legislation and executive orders on the subject of climate change in California have established a statewide context and process for developing an enforceable statewide cap on GHG emissions. Given the nature of environmental

consequences from GHGs and global climate change, CEQA requires that lead agencies consider evaluating the cumulative impacts of GHGs. Small contributions to this cumulative impact (from which significant effects are occurring and are expected to worsen over time) may be potentially considerable and, therefore, significant.

The California Office of Planning and Research (OPR) recommends that lead agencies under CEQA make a good-faith effort, based on available information, to estimate the quantity of GHG emissions that would be generated by a project, including the emissions associated with construction activities, vehicular traffic, energy consumption, and area sources: to determine whether the impacts have the potential to result in a significant project or cumulative environmental impact; and, where feasible mitigation is available, to mitigate any project or cumulative impact determined to be potentially significant. The guidance contained within Chapter 6 of the SMAQMD *Guide to Air Quality Assessment in Sacramento County* (CEQA Guide) (2018) was used in the following analysis.

GREENHOUSE GASES THRESHOLDS OF SIGNIFICANCE

Per Appendix G of the CEQA Guidelines, climate change-related impacts are considered significant if implementation of the Project under consideration would do any of the following:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Methodology

Greenhouse gases attributable to the construction phase of the Project would be generated from two primary sources: 1) emissions from off-road construction vehicles used to develop the Project and 2) emissions from worker, vendor, and hauler vehicle trips and vehicle miles travelled generated during construction activities.

Greenhouse gases attributable to the operational phase of the Project would be generated from two primary sources: 1) indirect energy (e.g. electricity and natural gas) usage from the Project and 2) emissions from vehicle trips and vehicle miles travelled generated by the Project.

The Project would include housing units that exceed the operational and construction greenhouse gas screening levels as provided by SMAQMD (2018). Therefore, in order to determine whether or not the Project would generate GHG emissions that may have a significant impact on the environment during the Project's construction and operational phases, this EIR addresses the Project's compliance with the SMAQMD's established and adopted greenhouse gas emission thresholds (SMAQMD, 2018). These thresholds and standards are used by the City to determine a project's GHG emissions impacts during a project's construction and operational phases. The SMAQMD thresholds for both construction and operational emissions are 1,100 metric tons of CO_2e/year. CalEEMod (v.2016.3.2) was utilized to calculate construction and operational GHG

emissions. Only CO_2, CH_4, and N_2O emissions were considered. Other GHGs were considered to be negligible.

It should be noted that the SMAQMD is currently in the process of updating their operational GHG emissions thresholds for land development projects. On November 28, 2018, the SMAQMD released the *Draft Sacramento Metropolitan Air Quality Management District Greenhouse Gas Thresholds of Significance Update for Land Development Operational Emissions*. After review of the current thresholds and available land use and GHG datasets, the SMAQMD staff is recommending an update to the land use operational threshold to include a screening level for smaller projects and an efficiency metric for projects exceeding the screening level to determine significance of operational emissions. For projects exceeding a 3,500 metric tons GHG/year screening threshold, the SMAQMD staff recommends (in their draft report) to compare project GHG emissions to one of the efficiency metrics shown in the following table to determine significance and the need to mitigate GHG emissions. An analysis of the Project's compliance with this draft threshold is provided.

TABLE 3.6-1: RECOMMENDED LAND USE OPERATIONAL THRESHOLDS OF SIGNIFICANCE (METRIC TONS)

YEAR	*GHG/CAPITA (METRIC TONS)*	*GHG/SERVICE POPULATION*
2020	5.90	4.16
2036	2.94	2.05

SOURCE: DRAFT SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT GREENHOUSE GAS THRESHOLDS OF SIGNIFICANCE UPDATE FOR LAND DEVELOPMENT OPERATIONAL EMISSIONS, 2018.

An analysis of the Project's consistency with applicable plans, policies, and regulations for the purpose of reducing greenhouse gas emissions is also provided, including consistency with:

- AB 32, SB 32, the CARB Scoping Plan, and Executive Order B-30-15 goals; and
- The SACOG MTP/SCS.

The City of Rancho Cordova does not have a qualified climate action plan or GHG reduction plan. Therefore, an analysis of the Project's consistency with such planning documents is not provided herein.

ENERGY CONSERVATION THRESHOLDS OF SIGNIFICANCE

Per Appendix G of the State CEQA Guidelines, the Project would result in a significant impact on energy use if it would:

1. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or

2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

In order to determine whether or not the Project would result in a significant impact on energy use, this EIR includes an analysis of Project energy use, as provided under *Impacts and Mitigation*

Measures, below. A description of the methodology used to estimate energy emissions is provided within the analysis provided under *Impacts and Mitigation Measures*.

IMPACTS AND MITIGATION MEASURES

Impact 3.6-1: The Project has the potential to generate construction-related GHGs, either directly or indirectly, that may have a significant effect on the environment (Less than Significant with Mitigation)

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on Earth. A project's GHG emissions are at a micro-scale relative to global emissions, but could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. Implementation of the Project would contribute to increases of GHG emissions that are associated with global climate change. Estimated GHG emissions attributable to future development would be primarily associated with increases of CO_2 and other GHG pollutants, such as methane (CH_4) and nitrous oxide (N_2O), from mobile sources and utility usage.

The Project's short-term construction-related and long-term operational GHG emissions were estimated using the California Emission Estimator Model (CalEEMod)™ (v.2016.3.2). CalEEMod is a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify GHG emissions from land use projects. The model quantifies direct GHG emissions from construction and operation (including vehicle use), as well as indirect GHG emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Emissions are expressed in annual metric tons of CO_2 equivalent units of measure (i.e., MT CO_2e), based on the global warming potential of the individual pollutants. Section 3.2 (Air Quality) provides further detail on the construction phasing and parameters assumed for the purposes of modeling.

Construction-related activities that would generate GHGs include worker commute trips, haul trucks carrying supplies, materials, and cut and fill to and from the Project site, and off-road construction equipment (e.g., dozers, loaders, excavators). Construction of the land uses on the Project site is expected to occur over several years. Annual construction emissions are summarized in Table 3.6-2, in units of metric tons per year (MT/year). Table 3.6-2 represents both unmitigated and mitigated construction-related GHG emissions, since the measures provided within Mitigation Measure 3.6-1 would not affect the Project construction GHG emissions directly.

TABLE 3.6-2: SUMMARY OF CONSTRUCTION-RELATED GREENHOUSE GAS EMISSIONS (METRIC TONS/YEAR)

CONSTRUCTION YEAR	BIO-CO_2	NON-BIO CO_2	TOTAL CO_2	CH_4	N_2O	CO_2E
PHASE 1						
2020	0	948.8	948.8	0.2	0	953.9
2021	0	1,001.8	1,001.8	0.2	0	1,006.1
2022	0	1,070.7	1,070.7	0.2	0	1,075.1
2023	0	368.9	368.9	0.1	0	370.3
PHASE 2						
2022	0	226.0	226.0	0.1	0	227.4
2023	0	579.1	579.1	0.1	0	580.8
2024	0	800.9	800.9	0.1	0	803.1
2025	0	482.5	482.5	0.1	0	483.8
PHASE 3						
2025	0	557.2	557.2	0.2	0	561.3
2026	0	1,169	1,169	0.1	0	1,171.5
2027	0	1,582.0	1,582.0	0.2	0	1,587.7
2028	0	1,250.3	1,250.3	0.2	0	1,255.0
2029	0	111.5	111.5	<0.1	0	112.4
PHASE 4						
2030	0	304.3	304.3	<0.1	0	304.6
2031	0	388.4	388.4	<0.1	0	388.7
2032	0	514.2	514.2	<0.1	0	514.7
2033	0	21.7	21.7	<0.1	0	21.7
PHASE 5						
2034	0	313.8	313.8	<0.1	0	314.2
2035	0	282.3	282.3	<0.1	0	282.6
Threshold	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**1,100**
Above Threshold?	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**Y**

SOURCE: CALEEMOD (V.2016.3.2)

NOTES: BIO-CO_2 REFERS TO BIOGENIC SOURCES OF CO_2. THE LOSS OF CARBON SEQUESTRATION FROM THE REMOVAL OF EXISTING VEGETATION IS ADDRESSED UNDER THE OPERATIONAL IMPACT DISCUSSION UNDER IMPACT 3.6-2. THE SMAQMD PROVIDES GHG THRESHOLDS ONLY FOR CO_2E, WHICH IS AN AGGREGATE OF ALL GHG EMISSIONS AS EXPRESSED IN TERM OF CO_2.

TABLE 3.6-3: SUMMARY OF CONSTRUCTION GREENHOUSE GAS EMISSIONS (METRIC TONS/YEAR) IN YEARS WITH CONCURRENT PHASES

YEAR	BIO-CO_2	NON-BIO CO_2	TOTAL CO_2	CH_4	N_2O	CO_2E
2022						
Phase 1	0	1,070.70	1,070.70	0.2	0	1,075.10
Phase 2	0	226	226	0.1	0	227.4
Total	**0**	**1,296.7**	**1,296.7**	**0.3**	**0**	**1,302.5**
2023						
Phase 1	0	368.9	368.9	0.1	0	370.3
Phase 2	0	579.1	579.1	0.1	0	580.8
Total	**0**	**948**	**948.0**	**0.2**	**0**	**951.1**
2025						
Phase 2	0	482.5	482.5	0.1	0	483.8
Phase 3	0	557.2	557.2	0.2	0	561.3
Total	**0**	**1,039.7**	**1,039.7**	**0.3**	**0**	**1,045.1**
Maximum	**0**	**1,296.7**	**1,296.7**	**0.3**	**0**	**1,302.5**
Threshold	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**1,100**
Above Threshold?	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**Y**

SOURCE: CALEEMOD (V.2016.3.2); DE NOVO PLANNING GROUP, 2019

It is noted that construction phases would overlap in 2022, 2023, and 2025 and emissions during these years would reflect concurrent development of multiple phases, as shown in Table 3.6-3.

The GHG emissions would be the greatest during year 2027 because that is the year when a large amount of building construction, site preparation, and grading for Phases 3 and 4, as well as grading and paving for the Rancho Cordova Parkway widening, would occur. The GHG emissions threshold would also be exceeded during years 2022 (with Phases 1 and 2 combined), 2025, with Phases 2 and 3 combined, 2028, and 2029. Refer Section 3.2, Air Quality, for additional details on the construction schedule. Refer to Appendix B.1 for a detailed summary of the CalEEMod modeling assumptions, inputs, and outputs.

As presented in the table, short-term construction emissions of GHG associated with the Project are estimated to be a maximum of approximately 1,587.7 MT CO_2e in a single year (year 2027). Construction GHG emissions are a one-time release and are, therefore, not expected to generate a significant contribution to global climate change in the long-term. Emissions from construction are above the SMAQMD construction phase threshold of 1,100 MT CO_2e/year. Therefore, during the construction phase, the Project would be required to implement mitigation to reduce emissions to less than the SMAQMD construction phase threshold of 1,100 MT CO_2e/year. The SMAQMD *Guide to Air Quality Assessment in Sacramento County* allows for construction emissions to be amortized over the expected (long-term) operational life of a project. Therefore, construction emissions are amortized (as provided under Impact 3.6-2, below) and are subject to Mitigation Measure 3.6-1 (as

provided under Impact 3.6-2). With implementation of Mitigation Measure 3.6-1, the Project would have a ***less than significant*** impact relative to this topic.

Impact 3.6-2: The Project has the potential to generate operation-related GHGs, either directly or indirectly, that may have a significant effect on the environment (Less than Significant with Mitigation)

The Project is anticipated to be fully developed (i.e. achieve buildout) by approximately 2035. However, partial buildout (completion of Phase 1) could occur as soon as 2023. The long-term operational GHG emissions estimate for the Project incorporates the Project's potential area source and vehicle emissions, and emissions associated with utility and water usage, and wastewater and solid waste generation. The modeling also reflects a loss of carbon sequestration from the loss of existing trees and vegetation, as well as the benefits of carbon sequestration from the installation of new trees within the Project site.

Project Operational Characteristics

CalEEMod was used to estimate operational emissions for the Project. As described in Section 3.2, Air Quality, the CalEEMod model only allows some Project characteristics to be modeled as "mitigation" for the purposes of the model; therefore, the "mitigated" Project scenario modeled in the unmitigated CalEEMod run represents reductions associated with Project characteristics that reduce emissions.

A summary of the Project characteristics that reduce GHG emissions is provided below (note: the associated CalEEMod measure is provided in brackets). For further detail, see the list of sustainability features and other Project details as provided in Chapter 2.0, Project Description.

- Density to 6.86 dwelling units per acre [Traffic Mitigation, LUT-1];
- Increase diversity through single family residential, multi-family residential, commercial, parks and recreation, and senior uses [Traffic Mitigation, LUT-3];
- Improve walkability design (123.53 intersections per square miles) [Traffic Mitigation, LUT-9];
- Improve destination accessibility (12.3 miles) [Traffic Mitigation LUT-4];
- Increase transit accessibility (Project site would include transit facilities for the City's Signature Transit Route) – average distance to transit for Project residents would be approximately 0.25 miles) [Traffic Mitigation, LUT-5];
- Improve pedestrian network (Project site and connecting off-site) [Traffic Mitigation, SDT-1];
- Provide traffic calming measures (50% of streets and intersections with improvements) [Traffic Mitigation, SDT-2];
- Install electric vehicle (EV) charging stations throughout the Project site, such that at least 50% of single-family residences and 5% of parking spaces within the commercial, park and recreation, and multi-family land uses will have EV charging stations [Traffic Mitigation SDT-3];
- Expand transit network [Traffic Mitigation, TST-3];
- Plant a minimum of 2,240 new trees throughout the Project site [4.11.2-Sequestration];
- No hearths [Area Mitigation];
- Use low-VOC paint (50 EF g/L);

- Install energy efficient (i.e. LED or better lighting) for all outdoor lighting (for outdoor lighting) [Energy Mitigation, LE-1];
- Generate 95% or more of electricity via renewable energy (on-site energy generation and/or contract with SMUD) [Energy Mitigation, AE-1, AE-2, AE-3];
- Install energy efficient *(i.e. Energy Star)* appliances [Energy Mitigation, BE-4];
- Install low-flow appliances (bathroom faucet, kitchen faucet, toilet, and shower) [Water Mitigation, WUW-1];
- Use water-efficient irrigation systems (automatic rain shut-off, maximum gallon per minute restriction, WiFi connectivity) [Water Mitigation, WUW-4]; and
- Minimize turf for residential uses to 70% less than the maximum allowed turf area [Water Mitigation, WUW-5].

Furthermore, as discussed in Section 3.2, Air Quality, the Project would implement all feasible SMAQMD BMPs for particulate matter emissions from land use development projects. The SMAQMD BMPs are required by existing regulations. The following list identifies the BMPs for operational PM emissions for land use development projects that would also contribute to a reduction in GHGs:

- Compliance with the mandatory measures in the California Building Energy Efficiency Standards (Title 24, Part 6) that pertain to efficient use of natural gas for space and water heating and other uses at residential or non-residential land uses.

- Compliance with mandatory measures in the California Green Building Code (Title 24, Part 11). Current mandatory measures related to operational PM include requirements for bicycle parking, parking for fuel-efficient vehicles, electric vehicle charging, and fireplaces for non-residential projects. Residential project measures include requirements for electric vehicle charging and fireplaces.

- Compliance with anti-idling regulations for diesel-powered commercial motor vehicles (greater than 10,000 gross vehicular weight rating). This BMP focuses on non-residential land use projects (retail and industrial) that would attract these vehicles.

Unmitigated Project Emissions

For Table 3.6-4, two mobile source scenarios are provided: the first scenario shows mobile source emissions inclusive of all Project trips, whilst a second scenario for the mobile emissions category ("Mobile Emissions Category Excluding Car and Light-Duty Truck Trips") shows Project mobile category emissions without emissions from car and light-duty truck trips (consistent with the SB 375 CEQA streamlining benefit for "Mixed-Use Residential Projects", for which the Project qualifies).

TABLE 3.6-4: UNMITIGATED OPERATIONAL GHG EMISSIONS AT PROJECT BUILDOUT (METRIC TONS/YEAR)

CATEGORY	*BIO- CO_2*	*NON-BIO- CO_2*	*TOTAL CO_2*	*CH_4*	*N_2O*	*CO_2E*
Area	0	29.1	29.1	<0.1	0	29.8
Energy	0	1,758.7	1,758.7	<0.1	<0.1	1,768.9
Mobile	0	6,834.0	6,834.0	0.3	0	6,840.5
Waste	252.0	0	252.0	14.9	0	624.5
Water	32.5	199.4	231.9	0.1	0.1	256.6
Total	**284.5**	**8,821.2**	**9,105.7**	**15.3**	**0.1**	**9,520.1**
MOBILE EMISSIONS CATEGORY EXCLUDING CAR AND LIGHT-DUTY TRUCK TRIPS						
Mobile	0	3,063.4	3,063.4	0.2	0	3,068.8
Total	**284.5**	**5,050.60**	**5,335.1**	**15.2**	**0.1**	**5,748.6**

SOURCE: CALEEMOD (V.2016.3.2)

As shown in Table 3.6-4 the Project's operational GHG emissions would equal approximately 5,748.6 MT CO_2e/year, when removing the emissions from car and light-duty truck trips, per the SB 375 CEQA streamlining benefits.

In addition to the emissions shown in Table 3.6-4, the CalEEMod results also identify the sequestration loss from existing vegetation as well as the benefits of of carbon sequestration from the installation of new trees within the Project site. As a conservative estimate, the loss of existing vegetation (annual grasslands) was estimated to generate a one-time loss (from carbon sequestration) of approximately 1,083.3 MT CO_2e.[1] If amortized over a 30-year period, this loss represents an approximate carbon sequestration loss of 36.11 MT CO_2e/year. However, installation of new trees within the Project site is expected to sequester approximately 1,585.9 MT CO_2e. If amortized over a 30-year period, this represents an approximate carbon sequestration gain of 52.86 MT CO_2e/year. Combined with the loss from existing vegetation, the net change to carbon sequestration due to development of the Project at full buildout is expected to be approximately 502.6 MT CO_2e, or 16.8 MT CO_2e/year. This carbon sequestration gain (i.e. net reduction in Project GHG emissions) is in addition to the Project unmitigated operational GHG emissions provided in Table 3.6-3.

Separately, as provided under Impact 3.6-1, construction emissions as modeled by CalEEMod would total approximately 12,014.9 CO_2e/year over the life of the Project. If amortized over a 40-year period (consistent with SMAQMD guidance)[2], total amortized construction emissions would be equivalent to 200.4 CO_2e/year.

When carbon sequestration and amortized construction emissions are included in the calculation, the Project's net annual GHG emissions would equal 5,446.4 MT CO_2e/year, as shown in Table 3.6-5. Therefore, the Project is required to implement all feasible mitigation to reduce Project operational GHG emissions to a below the applicable threshold of significance.

[1] Note: for the purposes of modeling, it was assumed that the Project site currently consists of "Grassland". The proposed project was assumed to remove an amount of "Grassland" representative of the land area to be developed (not including the open space areas that would be preserved upon proposed project buildout).

[2] As provided on page 6-14 of the SMAQMD's Guide to Air Quality Assessment in Sacramento County (2018).

TABLE 3.6-5: UNMITIGATED OPERATIONAL GHG EMISSIONS AT PROJECT BUILDOUT (METRIC TONS/YEAR)

CATEGORY	*CO_2E*
Total Area, Energy, Mobile, Waste, and Water Emissions (Table 3.4-3)	5,748.6
Net Carbon Sequestration (Reduction)[1]	<502.6>
Net Construction Amortization (Gain)[2]	200.4
Total	**5,446.4**

[1] ONE-TIME LOSS OF APPROXIMATELY 1,083.3 MT CO_2E AMORTIZED OVER A 30-YEAR PERIOD REPRESENTS AN APPROXIMATE CARBON SEQUESTRATION LOSS OF 36.11 MT CO_2E/YEAR ASSOCIATED WITH REMOVAL OF EXISTING VEGETATION DUE TO PROJECT CONSTRUCTION. INSTALLATION OF NEW TREES AS PART OF THE PROJECT WOULD SEQUESTER APPROXIMATELY 1,585.9 MT CO_2E, REPRESENTS AN APPROXIMATE CARBON SEQUESTRATION GAIN OF 52.86 MT CO_2E/YEAR IF AMORTIZED OVER A 30-YEAR PERIOD.
[2] CONSTRUCTION EMISSIONS WOULD TOTAL APPROXIMATELY 12,014.9 CO_2E/YEAR OVER THE LIFE OF THE PROJECT (SEE IMPACT 3.6-1). WHEN AMORTIZED OVER A 40-YEAR PERIOD, TOTAL AMORTIZED CONSTRUCTION EMISSIONS WOULD BE EQUIVALENT TO 200.4 CO_2E/YEAR.
SOURCE: CALEEMOD (V.2016.3.2)

Mitigated Project Emissions

The Project has been designed and planned to incorporate a substantial amount of available mitigation. As shown in the Project's GHG Reduction Plan (see Mitigation Measure 3.6-1), the Project has been designed to incorporate the majority of CalEEMod measures identified by SMAQMD as appropriate for reducing GHG emissions. These measures are described previously under the Project Operational Characteristics heading. In reviewing GHG reduction measures identified by SMAQMD as included in CalEEMod and appropriate for reducing GHG emissions, an additional three measures were identified as applicable to the Project, as described below:

- Implement Trip Reduction Program (100% of employees eligible; voluntary) [Traffic Mitigation, TRT-1 and TRT-2];
- Exceed Title 24 (2% improvement) [Energy Mitigation, BE-1]; and
- Apply Water Conservation Strategy (25% reduction in outdoor water consumption) [Water Mitigation WUW-2].

Table 3.6-6 provides the mitigation operational GHG emissions at project buildout in year 2035.

TABLE 3.6-6: UNMITIGATED OPERATIONAL GHG EMISSIONS AT PROJECT BUILDOUT (METRIC TONS/YEAR)

CATEGORY	*BIO- CO_2*	*NON-BIO- CO_2*	*TOTAL CO_2*	*CH_4*	*N_2O*	*CO_2E*
Area	0	29.1	29.1	<0.1	0	29.8
Energy	0	1,730.7	1,730.7	<0.1	<0.1	1,740.8
Mobile	0	6,640.6	6,640.6	0.3	0	6,646.9
Waste	252.0	0	252.0	14.9	0	624.3
Water	40.6	214.5	255.1	0.2	0.1	285.9
Total	**292.6**	**8,614.9**	**8,907.5**	**15.4**	**0.1**	**9,327.6**
MOBILE EMISSIONS CATEGORY EXCLUDING CAR AND LIGHT-DUTY TRUCK TRIPS						
Mobile	0	2,982.3	2,982.3	0.2	0	2,987.7
Total	**292.6**	**4,956.6**	**5,249.2**	**15.3**	**0.1**	**5,668.5**

SOURCE: CALEEMOD (V.2016.3.2)

As shown in Table 3.6-6, the Project's operational GHG emissions would equal approximately 5,668.5 MT CO_2e/year, when removing the impact from car and light-duty truck trips, per the SB 375 CEQA streamlining benefits.

In addition to the emissions shown in Table 3.6-6, the CalEEMod results also identify the sequestration loss from existing vegetation as well as the benefits of carbon sequestration from the installation of new trees within the Project site. As a conservative estimate, the loss of existing vegetation (annual grasslands) was estimated to generate a one-time loss (from carbon sequestration) of approximately 1,083.3 MT CO_2e.[3] If amortized over a 30-year period, this loss represents an approximate carbon sequestration loss of 36.11 MT CO_2e/year. However, installation of new trees within the Project site is expected to sequester approximately 1,585.9 MT CO_2e. If amortized over a 30-year period, this represents an approximate carbon sequestration gain of 52.86 MT CO_2e/year. Combined with the loss from existing vegetation, the net change to carbon sequestration due to development of the Project at full buildout is expected to be approximately 502.6 MT CO_2e, or 16.8 MT CO_2e/year. This carbon sequestration gain (i.e. net reduction in Project GHG emissions) is in addition to the Project unmitigated operational GHG emissions provided in Table 3.6-3.

Separately, as provided under Impact 3.6-1, construction emissions as modeled by CalEEMod would total approximately 12,014.9 CO_2e/year over the life of the Project. If amortized over a 40-year period (consistent with SMAQMD guidance)[4], total amortized construction emissions would be equivalent to 200.4 CO_2e/year.

When carbon sequestration and amortized construction emissions are included in the calculation, the Project's net annual GHG emissions would equal 5,336.3 MT CO_2e/year, as shown in Table 3.6-7. Therefore, the Project is required to implement all feasible mitigation to reduce Project operational GHG emissions to a below the applicable threshold of significance.

TABLE 3.6-7: UNMITIGATED OPERATIONAL GHG EMISSIONS AT PROJECT BUILDOUT (METRIC TONS/YEAR)

CATEGORY	*CO_2E*
Total Area, Energy, Mobile, Waste, and Water Emissions (Table 3.4-3)	5,668.5
Net Carbon Sequestration (Reduction)[1]	<502.6>
Net Construction Amortization (Gain)[2]	200.4
Total	**5,336.3**

[1] ONE-TIME LOSS OF APPROXIMATELY 1,083.3 MT CO_2E AMORTIZED OVER A 30-YEAR PERIOD REPRESENTS AN APPROXIMATE CARBON SEQUESTRATION LOSS OF 36.11 MT CO_2E/YEAR ASSOCIATED WITH REMOVAL OF EXISTING VEGETATION DUE TO PROJECT CONSTRUCTION. INSTALLATION OF NEW TREES AS PART OF THE PROJECT WOULD SEQUESTER APPROXIMATELY 1,585.9 MT CO_2E, REPRESENTS AN APPROXIMATE CARBON SEQUESTRATION GAIN OF 52.86 MT CO_2E/YEAR IF AMORTIZED OVER A 30-YEAR PERIOD.

[2] CONSTRUCTION EMISSIONS WOULD TOTAL APPROXIMATELY 12,014.9 CO_2E/YEAR OVER THE LIFE OF THE PROJECT (SEE IMPACT 3.6-1). WHEN AMORTIZED OVER A 40-YEAR PERIOD, TOTAL AMORTIZED CONSTRUCTION EMISSIONS WOULD BE EQUIVALENT TO 200.4 CO_2E/YEAR.

SOURCE: CALEEMOD (V.2016.3.2)

[3] Note: for the purposes of modeling, it was assumed that the Project site currently consists of "Grassland". The proposed project was assumed to remove an amount of "Grassland" representative of the land area to be developed (not including the open space areas that would be preserved upon proposed project buildout).

[4] As provided on page 6-14 of the SMAQMD's Guide to Air Quality Assessment in Sacramento County (2018).

CONSISTENCY WITH THE DRAFT RECOMMENDED LAND USE OPERATIONAL GHG THRESHOLDS

The following discussion provides an analysis of the Project's compliance with the draft recommended land use operational GHG thresholds that are currently under consideration by the SMAQMD.

The Project includes both residential and non-residential components, and is not expected to achieve full buildout until approximately 2035. Therefore, the GHG per service population threshold for year 2036 (as provided in Table 3.6-1) was selected the purposes of comparing Project operational GHG emissions to the new draft recommended land use thresholds of significance for GHG emissions. As provided in Table 3.6-1, the proposed project would need to reach a GHG service population threshold of 2.05 in 2036. Operational emissions for 2035 are used as a proxy for year 2036 (carbon efficiency is expected to improve in California over time, so this serves as a conservative estimate).

The residential population of the Project is expected to be 4,319 persons and the number of employees within the Project at buildout is estimated at 106 employees, as described in Chapter 2.0, Project Description. Therefore, the service population for the Project would be 4,425. With total operational emissions for the Project at approximately 5,336.3 MT CO_2e/year, as shown in Table 3.6-7, the GHG per service population thresholds would equal approximately 1.21 MT CO_2e/year. Therefore, the Project would achieve the year 2036 GHG/capita thresholds of 2.05 MT CO_2e/service population under the mitigated scenario. Nevertheless, since the GHG/service population thresholds are not yet final, the existing 1,100 MT CO_2e thresholds for operational GHG emissions that is currently in place is used as the basis for the analysis of the Project's operation-related GHGs emissions.

CONCLUSION

Even with inclusion of the aforementioned Project characteristics, the Project would not meet the operational level emissions threshold as currently provided by the SMAQMD. Therefore, the Project would be required to implement Mitigation Measure 3.6-1, which requires the Project applicant to implement additional features in the Project that would reduce GHG emissions, including membership of Project components (residential communities, commercial uses, and parks and recreation uses), in a Transportation Management Association, increased efficiency beyond the minimum requirements of Title 24, use of native and drought-tolerant landscaping and trees, and purchasing carbon offsets. With implementation of Mitigation Measure 3.6-1, the Project would have a ***less than significant*** impact relative to this topic.

MITIGATION MEASURE(S)

Mitigation Measure 3.6-1: *The Project shall comply with the GHG Reduction Plan for The Ranch throughout all phases of Project construction and operation.*

The Ranch GHG Reduction Plan

The Project shall implement all measures shown in the table below that are identified as "Incorporated into Project Design" or "Mitigation Measure" in order to reduce the Project's net operational emissions, including amortized construction emissions, to an emissions level that meet

the SMAQMD threshold for GHG emissions. It is noted that incorporation of the three SMAQMD-Recommended CalEEMod Measures to Reduce GHGs that are identified as "Mitigation Measures" in the below table would reduce the Project's net operational emissions, including amortized construction emissions, to 5,336.3 MT CO_2e, as shown in Table 3.6-7 of the Draft EIR. Implementation of the required carbon offset purchase, as described in the below table, will ensure that the Project meets SMAQMD thresholds as it ensures the Project will purchase adequate carbon offsets to reduce all remaining emissions over SMAQMD thresholds to a level that meets the threshold.

GHG Reduction Measure	*Applicability*	*Implementation*
SMAQMD-Recommended CalEEMod Measure to Reduce GHGs[1]		
LUT-1 Increase Density: Project more dense than typical developments	Not applicable. Project is under minimum density required (eight units per acre).	Not applicable.
LUT-3 Increase Diversity of Land Uses: Different types of land uses are near each other	Incorporated into Project Description. Project provides single family residential, multifamily residential, commercial, senior community clubhouse, parks and recreation, and open space land uses.	Included in Project design as described in the Project Description. No additional implementation required.
LUT-9 Improve Walkability Design: Walkable street network	Incorporated into Project Description. Project is designed with a walkable street pattern, with 123.53 intersections per square mile, multiple bicycle/pedestrian connections, an off-street trail system, and bicycle lanes to encourage walkability.	Included in Project design as described in the Project Description. No additional implementation required.
LUT-4 Improve Destination Accessibility: Project close to regional employment or destination center	Incorporated into Project Description. Project is located 12.3 miles from a regional employment center in downtown Sacramento.	Included in Project design as described in the Project Description. No additional implementation required.
LUT-5 Increase Transit Accessibility: Project near high-quality transit	Not applicable. While Project would provide a transit stop for the planned regional transit line, transit is currently limited in the area.	Not applicable.
LUT-6 Integrate Below Market Rate Housing: Incorporates affordable housing	Not applicable. The Project includes two multifamily components, but does not include affordable housing.	Not applicable.
SDT-1 Improve Pedestrian Network: On-site pedestrian access network links all of project internally and externally	Incorporated into Project Description. Project is designed with a walkable street pattern, with 123.53 intersections per square mile, multiple bicycle/pedestrian connections, an off-street trail system, and bicycle lanes to encourage walkability.	Included in Project design as described in the Project Description. No additional implementation required.
SDT-2 Provide Traffic Calming Measures: Projects streets and intersections feature traffic calming features	Incorporated into Project Description. Project has been designed to include a range of traffic-calming street design features, such as narrower streets, limited single-loaded streets, parking on both sides of the street, posted speed limit signs, planter	Included in Project design as described in the Project Description. No additional implementation required.

GHG REDUCTION MEASURE	*APPLICABILITY*	*IMPLEMENTATION*
	strips with street trees, bulb-outs, and horizontal shifts (lane centerline that curves or shifts), and intersection traffic calming features, including pedestrian push-buttons at three intersections, marked crosswalks, count-down signal timers where appropriate, curb extensions, channelization islands, median islands, and tight corner radii.	
SDT-3 Implement a Neighborhood Electric Vehicle (NEV) Network: Project provides a viable NEV network	Incorporated into Project Design. While the Project does not include a traditional NEV, the Project would support electric vehicle use through installing EV charging stations throughout the Project site, such that at least 50% of single family residences and 5% of parking spaces within the commercial, park and recreation, and multi-family land uses will have EV charging stations to reduce reliance on gasoline-fueled vehicles.	Included in Project design as described in the Project Description. No additional implementation required.
PDT-1 Limit Parking Supply: Parking supply below Institute of Transportation Engineers (ITE) rates	Not applicable. The suburban context of the Project is not appropriate for this measure.	Not applicable.
PDT-2 Unbundle Parking Costs: Parking cost separate from property costs	Not applicable. Project design incorporates garages into the single family residential units and does not have significant opportunities for unbundled parking costs.	Not applicable.
TST-1 Provide a Bus Rapid Transit (BRT) System: Establish a BRT line with permanent operational funding stream	Not applicable. While the Project will provide for an expanded transit system through providing a transit stop in accordance with the City's transit plan, it will not create an independent funding source for transit.	Not applicable.
TST-3 Expand Transit Network: Establishes or enhances bus line with permanent operational funding stream	Not applicable. While the Project will provide for an expanded transit system through providing a transit stop in accordance with the City's transit plan, it will not create an independent funding source for transit.	Not applicable.
TST-4 Increase Transit Frequency: Reduces headways of existing transit	Not applicable. While the Project will provide for an expanded transit system through providing a transit stop in accordance with the City's transit plan, it will not create an independent funding source for transit that would reduce headways.	Not applicable.

GHG REDUCTION MEASURE	*APPLICABILITY*	*IMPLEMENTATION*
TRT-1&2 Implement Trip Reduction Program: Transportation Management Association (TMA) membership or other comprehensive services	Mitigation Measure. Mitigation Measure 3.6-1 requires the Project to join a Transportation Management Association (all employees located within the Project site to be eligible to participate).	Prior to issuance of occupancy permits for each construction phase of the Project, the Project applicant shall demonstrate that the residential, commercial, and parks and recreation uses associated with each phase have a permanent commitment, demonstrated through CC&Rs or comparable permanent mechanisms, have joined a Transportation Management Association and ensures payment of annual fees for on-going participation. The Transportation Management Association shall grant all employees located within the Project site eligibility to participate).
BE-1 Exceed Title 24 California Code of Regulations, known as the California Building Standards Code (Title 24): Use less energy than allowed by Title 24	Mitigation Measure. Mitigation Measure 3.6-1 requires the Project to exceed the 2016 Title 24 requirements by 2 percent.	Prior to issuance of building permits for each construction phase of the Project, including all residential, commercial, and parks and recreation uses, the Project applicant shall demonstrate that the phase exceeds the 2016 Title 24 requirements for energy use and efficiency by a minimum of 2 percent. The documentation shall identify specific Project components, such as building materials and design, lighting improvements beyond the minimum required by LE-1, etc. and the associated reduction with each component beyond the Title 24 requirements.
LE-1 Install High Efficiency Lighting: Make use of high-efficient outdoor and public lighting	Incorporated into Project Design. The Project proposes to install energy-efficient (i.e., LED or better) lighting for all outdoor lighting.	Included in Project design as described in the Project Description. No additional implementation required.
BE-4 Energy Efficient Appliances: Use appliances more energy efficient than standard models	Incorporated into Project Design. The Project proposes to install energy-efficient appliances.	Included in Project design as described in the Project Description. No additional implementation required.
AE-1 On-site Renewable Energy: Establish on-site renewable energy. (No	Incorporated into Project Design. The Project would generate a minimum of 95% of electricity via renewable	Included in Project design as described in the Project Description. No additional

GHG REDUCTION MEASURE	*APPLICABILITY*	*IMPLEMENTATION*
Ozone Precursor reductions if NO_X intensity is higher than electric utility.)	energy via either on-site energy generation and/or through a contract with SMUD.	implementation required.
WUW-2 Apply Water Conservation Strategy: Reduce indoor and outdoor water use	Incorporated into Project Design. The Project would	Included in Project design as described in the Project Description. No additional implementation required.
WSW-1 Use Reclaimed Water: Project utilizes non-potable water	Not applicable. Nonpotable water is not available to the Project site.	Not applicable.
WSW-2 Use Grey Water: Project reuses onsite water	Not applicable. The Project does not have significant opportunities to reuse onsite water.	Not applicable.
WUW-1 Install Low-Flow Bathroom Faucet, Install Low-Flow Kitchen Faucet, Install Low-flow Toilet, Install Low-flow Shower	Incorporated into Project Design. The Project proposes to install energy-efficient appliances.	Included in Project design as described in the Project Description. No additional implementation required.
WUW-5 Reduce Turf in Landscapes and Lawns: Use less turf than normal projects	Incorporated into Project Design. Minimize turf for residential uses to 70% less than the maximum allowed turf area to reduce water use.	Included in Project design as described in the Project Description. No additional implementation required.
WUW-4 Use Water-Efficient Irrigation Systems: Install a smart irrigation control system	Incorporated into Project Design. Use water-efficient irrigation systems (automatic rain shut-off, maximum gallon per minute restriction, WiFi connectivity) to reduce water waste.	Included in Project design as described in the Project Description. No additional implementation required.
WUW-3 Water Efficient Landscape: Plant native or drought-resistant trees and Vegetation	Mitigation Measure. Mitigation Measure 3.6-1 requires the Project to incorporate a minimum of 50 percent of native or drought-resistant trees and vegetation into the proposed landscaping, including landscaping lots, landscaping associated with parks and recreation facilities, and landscaping associated with residential uses. Project applicant shall demonstrate at least a 25% reduction in outdoor water use from implementation of this measure.	Prior to approval of improvement plans for each phase of construction, the Project applicant shall submit landscaping plans that demonstrate a minimum of 50 percent of of native or drought-resistant trees and vegetation are included in the non-turf component of proposed landscaping, including landscaping lots, parks and recreation lots and facilities, and residential uses.
SW-1 Institute Recycling and Composting Services: Project Recycles, Reduces, and Reuses	Incorporated into Project Design. The Project will comply with the City's recycling requirements. Credit is not taken for this measure.	Not applicable.

GHG REDUCTION MEASURE	*APPLICABILITY*	*IMPLEMENTATION*
ADDITIONAL MEASURES (NOT MODELED IN CALEEMOD)		
Purchase Offsets.	Mitigation Measure. This Mitigation Measure 3.6-1 requires the Project applicant to purchase carbon offsets to reduce net project operational and amortized construction emissions to less than SMAQMD's adopted threshold for GHG emissions.	Prior to issuance of the project's first building permit, the project applicant shall develop a SMAQMD-approved commitment to purchase carbon offsets sufficient to reduce project operational emissions and amortized construction emissions to less than SMAQMD's adopted threshold for GHG emissions that is in place at the time of the offset purchase. The purchase of carbon offsets may be prorated so that the offsets are paid concurrent with the approval of each project phase (small lot subdivision maps, multifamily parcel, etc.).

[1] *SMAQMD LAND USE EMISSIONS REDUCTIONS VERSION 4 (FOR OPERATIONAL EMISSIONS), SMAQMD, 2017.*

Impact 3.6-3: The Project has the potential to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases (Less than Significant with Mitigation)

The City of Rancho Cordova has not developed a qualified climate action plan or a GHG reduction plan. Therefore, the Project has been analyzed to determine consistency with State of California GHG reduction targets (as identified by AB 32, SB 32, and the Scoping Plan), the SACOG MTP/SCS, and Executive Order B-30-15 goals are provided below (per SMAQMD guidance contained within the SMAQMD CEQA Guide).

CONSISTENCY WITH THE SACOG MTP/SCS

The Project would be consistent with the planned-for development as provided with the MTP/SCS, and was therefore included within the SCS growth projections. When evaluating consistency with the MTP/SCS, the Project was reviewed as a mixed-use residential project located outside of a transit priority area. The Project meets the Public Resources Code Section 21159.28(a) requirements for a mixed-use residential project, with at least 75% of the total building square footage consisting of residential use, as approximately 98% of the Project's square footage would be residential (approximately 2,875,800 square feet residential uses divided by approximately 2,934,800 total building square feet).

The Project (the "Ranch at Sunridge" in the MTP/SCS) is located within a Developing Community and is consistent with the general uses envisioned for the site in the MTP/SCS. When determining consistency within a Developing Community, SACOG's Determination of MTP/SCS Consistency Worksheet indicates that the Project's average net density must meet or exceed the average net

density described for the specific Developing Community. The proposed average net residential density of 10 units/acre exceeds the average net density of 7 units/acre described for the the Ranch at Sunridge (MTP/SCS Appendix E-3, p. 137); in comparison to earlier development proposals for this site, the area for total residential, commercial, and other development is limited by the Project's significant preservation of open space and wetland resources (approximately 199.5-acre wetland preserve). This preservation of open space is consistent with the environmental principles of the SCS. Employment-generating uses include the proposed senior clubhouse, commercial parcel, and parks and recreation uses, which are consistent with the commercial and public uses envisioned by the MTP/SCS (MTP/SCS Appendix E-3, p. 137). A Special Planning Area (SPA) Handbook has been prepared for the Project, which acts in a similar capacity to a Specific Plan, and is consistent with the MTP/SCS. The Project is consistent with the goals of the City of Rancho Cordova General Plan (see SPA Handbook for further detail). The Project provides for a high level of bicycle and pedestrian connectivity throughout the Project site, including non-auto connections to the parks, open space, and trails features of the Project. An open space and wetland preserve area is provided, preserving wetlands and aquatic resources on the site. A range of housing types (including single family market rate and senior units at a range of densities and lot sizes, senior congregate care units, and multifamily units) will serve a broad spectrum of households. As described in Section 3.2, Air Quality, comprehensive features and measures are provided to reduce GHG emissions, including use of renewable energy for the residential component of the Project, an EV charging network, and use of energy-efficient and water-conserving building and design practices.

As described above, the Project is consistent with the MTP/SCS general use designation, density and intensity, and applicable MTP/SCS policies. The Project is located in the "Developing Community" community type. Development from the Project when added to other entitled projects would not exceed the MTP/SCS buildout assumptions for the area within this Community type, which is 152,027 new housing units and 81,837 new employees.

Therefore, the Project is consistent with the MTP/SCS and qualifies for CEQA Streamlining under the 'Residential or Mixed-Use Residential Project Designation for Projects Located Outside of an MTP/SCS TPA' (see Appendix B.3 for the "Determination of MTP/SCS Consistency Worksheet"). Therefore, the Project would have a ***less than significant*** impact relative to consistency with this plan.

CONSISTENCY WITH STATE OF CALIFORNIA GHG REDUCTION TARGETS & EO B-30-15

The State of California has a target to reach 1990 GHG levels by 2020 (consistent with AB 32), 40 percent below 1990 levels by 2030 (consistent with EO B-30-15 and SB 32), and 80 percent below 1990 levels by 2050 (consistent with EO S-03-05). The SACOG MTP/SCS is required to be consistent with these targets. Since the Project is consistent with and has been planned for in the SACOG MTP/SCS, the Project would also be consistent with the California statewide reduction targets. The Project is also consistent with the CARB Scoping Plan, which is developed in coordination with the SACOG MTP/SCS. Therefore, the Project would have a ***less than significant*** impact relative to this threshold.

CONSISTENCY WITH THE SMAQMD CONSTRUCTION AND OPERATIONAL GHG THRESHOLDS

As previously described, the SMAQMD thresholds for construction-related and operational-related emissions is 1,100 MT CO_2e/year. The Project would not exceed these thresholds with implementation of mitigation, as described under Impact 3.6-1. With implementation of Mitigation Measure 3.6-1, the Project would have a ***less than significant*** impact relative to this threshold.

CONCLUSION

As demonstrated in the analysis provided above, the Project is consistent with these adopted plans, and would assist the City and the State of California in achieving their adopted GHG reduction targets. The Project would also achieve the SMAQMD construction GHG emissions threshold of 1,100 MT CO_2e per year for construction-related emissions. Additionally, with Mitigation Measure 3.6-1, the Project would offset sufficient GHG emissions to achieve the GHG emissions threshold of 1,100 MT CO_2e per year for operational-related emissions (inclusive of amortized construction-related emissions). Therefore, there is a ***less than significant*** impact relative to this topic.

Impact 3.6-4: Project implementation has the potential to result in the inefficient, wasteful, or unnecessary use of energy resources, or conflict with or obstruct a state or local plan for renewable energy or energy efficiency (Less than Significant)

The State CEQA Guidelines require consideration of the potentially significant energy implications of a project. CEQA requires mitigation measures to reduce "wasteful, inefficient and unnecessary" energy usage (Public Resources Code Section 21100, subdivision [b][3]). According to Appendix F of the CEQA Guidelines, the means to achieve the goal of conserving energy include decreasing overall energy consumption, decreasing reliance on natural gas and oil, and increasing reliance on renewable energy sources. In particular, the Project would be considered "wasteful, inefficient, and unnecessary" if it were to violate state and federal energy standards and/or result in significant adverse impacts related to project energy requirements, energy inefficiencies, energy intensiveness of materials, cause significant impacts on local and regional energy supplies or generate requirements for additional capacity, fail to comply with existing energy standards, otherwise result in significant adverse impacts on energy resources, or conflict or create an inconsistency with applicable plan, policy, or regulation.

The Project includes primarily residential development, as well as a commercial parcel, an active adult community clubhouse and recreation facility, and parks and recreation land uses, including a comprehensive pedestrian and bicycle network. The amount of energy used at the Project site would directly correlate to the number and size of the residential units, the energy consumption of associated unit appliances, outdoor lighting, and energy use associated with other on-site (e.g. commercial) buildings and activities. Other major sources of Project energy consumption include fuel used by vehicle trips generated during Project construction and operation, and fuel used by off-road and on-road construction vehicles during construction. The following discussion provides calculated levels of energy use expected for the Project, based on commonly used modelling

software (i.e. CalEEMod v.2016.3.2 and the California Air Resource Board's EMFAC2014). It should be noted that many of the assumptions provided by CalEEMod are conservative relative to the Project, based on the long-term improvements in energy efficiency beyond 2050 that are not accounted for within the CalEEMod model. Therefore, this discussion provides a conservative estimate of Project energy use.

ELECTRICITY AND NATURAL GAS

Electricity and natural gas used by the Project would be used primarily to power on-site buildings. Total annual electricity (kWh) and natural gas (kBTU) usage associated with the operation of the Project are shown in Table 3.6-8, below (as provided by CalEEMod). The Project incorporates feasible mitigation to reduce the Project's operational electricity and natural gas consumption. As shown, electricity usage within the Project site would be reduced by more than 95% between the unmitigated and mitigated scenarios (due to Project mitigation, including the measure to ensure that at least 95% of Project building electricity usage is derived from renewable sources).

TABLE 3.6-8: PROJECT OPERATIONAL NATURAL GAS AND ELECTRICITY USAGE (UNMITIGATED SCENARIO)

EMISSIONS	*NATURAL GAS (KBTU/YEAR)*	*ELECTRICITY (KWH/YEAR)*
Apartments Mid Rise	2,095,840	38,917
City Park	0	0
Other Asphalt Surfaces	0	0
Parking Lot	0	326
Regional Shopping Center	173,440	12,167
Retirement Community	459,751	142,243
Retirement Community	8,916,760	7,334
Single Family Housing	18,988,500	261,857
Total	**30,634,291**	**462,844**

SOURCE: CALEEMOD (V.2016.3.2)

According to CalEEMod's *Appendix A: Calculation Details for CalEEMod*, CalEEMod uses the California Commercial End Use Survey (CEUS) database to develop energy intensity value for non-residential buildings. The energy use from residential land uses is calculated based on the Residential Appliance Saturation Survey (RASS). Similar to CEUS, this is a comprehensive energy use assessment that includes the end use for various climate zones in California.

As shown in Table 3.6-8, Project operational energy usage would be reduced with implementation of Project components considered mitigation by CalEEMod (note: given the limited mitigation options available in the current version of CalEEMod, the reduction attributable to mitigation represents a conservative analysis). As described under Mitigation Measure 3.2-1 (see Section 3.2, Air Quality), the Project incorporates feasible mitigation that would reduce the Project's energy consumption, as compared to the unmitigated scenario. These reductions in overall Project energy usage also reflect a reduction in the Project's energy intensity.

ON-ROAD VEHICLES (OPERATION)

The Project would generate vehicle trips during its operational phase. Based on the traffic study prepared for the Project (Kimley Horn, 2019), the Project would generate approximately 11,606

new daily vehicles trips[5]. In order to calculate operational on-road vehicle energy usage and emissions, default trip lengths generated by CalEEMod were used, which are based on the project location and urbanization level parameters De Novo (the EIR consultant) selected within CalEEMod (i.e. "Sacramento County" and "Urban", respectively). These values are provided by the individual districts or use a default average for the state, depending on the location of the Project (CAPCOA, 2017). Based on default factors provided by CalEEMod, the average distance per trip was conservatively calculated to be approximately 7.9 miles. The Project would generate at total of approximately 86,737 average daily vehicle miles travelled (average daily VMT). Using fleet mix data provide by CalEEMod (v2016.3.2), and Year 2026 gasoline and diesel MPG (miles per gallon) factors for individual vehicle classes as provided by EMFAC2014, De Novo derived weighted MPG factors for operational on-road vehicles of approximately 37.1 MPG for gasoline and 9.8 MPG for diesel vehicles. With this information, De Novo calculated as a conservative estimate that the unmitigated Project would generate vehicle trips that would use a total of approximately 2,186 gallons of gasoline and 566 gallons of diesel fuel per day, on average, or 798,060 gallons of gasoline and 206,430 annual gallons of diesel fuel per year.

ON-ROAD VEHICLES (CONSTRUCTION)

The Project would also generate on-road vehicle trips during Project construction (from construction workers and vendors). Estimates of vehicle fuel consumed were derived based on the assumed construction schedule, vehicle trip lengths and number of workers per construction phase as provided by CalEEMod (v 2016.3.2), and Year 2035 gasoline and diesel MPG factors provided by EMFAC2014. Table 3.6-9, below, describes gasoline and diesel fuel used by on-road mobile sources during each phase of the construction schedule. As shown, the vast majority of on-road mobile vehicle fuel used during the construction of the Project would occur during the building construction phase. See Appendix B.2 for a detailed calculation.

TABLE 3.6-9: ON-ROAD MOBILE FUEL GENERATED BY PROJECT CONSTRUCTION ACTIVITIES – BY PHASE

CONSTRUCTION PHASE	*TOTAL DAILY WORKER TRIPS[A]*	*TOTAL DAILY VENDOR TRIPS[A]*	*TOTAL DAILY HAULING TRIPS[A]*	*GALLONS OF GASOLINE FUEL[B]*	*GALLONS OF DIESEL FUEL[B]*
PHASE 1					
Site Preparation	18	0	0	315	0
Grading	20	0	9,544	825	31,797
Paving	15	0	0	263	0
Building Construction	283	61	0	44,708	31,882
Architectural Coating	57	0	0	9,020	0
PHASE 2					
Improvements for Phase 2 & Paving	23	0	0	1,215	0
Building Construction	290	70	0	47,612	38,022
Architectural Coating	58	0	0	9,522	0

[5] For the purposes of air quality and greenhouse gas emissions modeling (i.e. CalEEMod), the average internal capture rate calculated by Kimley Horn (for AM and PM peak hours) was applied to Project trips.

CONSTRUCTION PHASE	TOTAL DAILY WORKER TRIPS[A]	TOTAL DAILY VENDOR TRIPS[A]	TOTAL DAILY HAULING TRIPS[A]	GALLONS OF GASOLINE FUEL[B]	GALLONS OF DIESEL FUEL[B]
PHASE 3					
Site Preparation	18	0	3,181	315	10,598
Grading	20	0	0	825	0
Paving	15	0	0	2,463	0
Building Construction	535	145	0	87,835	80,766
Architectural Coating	107	0	0	17,567	0
Site Preparation for Rancho Cordova Widening	18	0	0	315	0
Paving for Rancho Cordova Widening	15	0	0	2,463	0
Site Preparation (Park Lot - D)	18	0	0	315	0
PHASE 4					
Site Preparation	18	0	0	199	0
Grading and Improvements	15	0	0	344	0
Paving	15	0	0	263	0
Building Construction	171	25	0	21,160	10,235
Architectural Coating	34	0	0	990	0
PHASE 5					
Site Preparation	18	0	0	204	0
Grading and Improvements	15	0	0	271	0
Paving	15	0	0	97	0
Building Construction	10	5	0	701	1,159
Architectural Coatings	2	0	0	46	0
Total	**N/A**	**N/A**	**N/A**	**249,853**	**204,459**

NOTE: [A] PROVIDED BY CALEEMOD. [B]SEE APPENDIX B.2 FOR FURTHER DETAIL

SOURCE: CALEEMOD (V.2016.3.2); EMFAC2014.

OFF-ROAD VEHICLES (CONSTRUCTION)

Off-road construction vehicles would use diesel fuel during the construction phase of the Project. A non-exhaustive list of off-road constructive vehicles expected to be used during the construction phase of the Project includes: cranes, forklifts, generator sets, tractors, excavators, and dozers. Based on the total amount of CO_2 emissions expected to be generated by the Project (as provided by the CalEEMod output), and a CO_2 to diesel fuel conversion factor (provided by the U.S. Energy Information Administration), the Project would use a total of approximately 134,644 gallons of diesel fuel for off-road construction vehicles (during the site preparation and grading phases of the Project). Detailed calculations are provided in Appendix B.2.

OTHER

Project landscape maintenance activities would generally require the use fossil fuel (i.e. gasoline) energy. For example, lawn mowers require the use of fuel for power. As an approximation, it is estimated that landscape care maintenance would require approximately 44,200 man-hours of mowing per year. Assuming an average of approximately 0.5 gallons of gasoline used per person-

hour, the Project would require the use of approximately 22,100 gallons of gasoline per year to power landscape maintenance equipment. The energy used to power landscape maintenance equipment would not differ substantially from the energy required for landscape maintenance for similar project.

The Project could also use other sources of energy not identified here. Examples of other energy sources include alternative and/or renewable energy (such as solar PV) and/or on-site stationary sources (such as on-site diesel generators) for electricity generation. The Project would introduce solar PV onto residential rooftops, which would greatly reduce the need for fossil fuel-based energy (for Project buildings), including for electricity.

CONCLUSION

The Project would use energy resources for the operation of Project buildings (electricity and natural gas), for on-road vehicle trips (e.g. gasoline and diesel fuel) generated by the Project, and from off-road construction activities associated with the Project (e.g. diesel fuel). Each of these activities would require the use of energy resources. The Project would be responsible for conserving energy, to the extent feasible, and relies heavily on reducing per capita energy consumption to achieve this goal, including through Statewide and local measures.

The Project would be in compliance with all applicable federal, state, and local regulations regulating energy usage. For example, SMUD is responsible for the mix of energy resources used to provide electricity for its customers, and it is in the process of implementing the Statewide Renewable Portfolio Standard (RPS) to increase the proportion of renewable energy (e.g. solar and wind) within its energy portfolio. SMUD is expected to achieve at least a 33% mix of renewable energy resources by 2020, and at least 40% by 2030. Additionally, energy-saving regulations, including the latest State Title 24 building energy efficiency standards ("part 6"), would be applicable to the Project. Other Statewide measures, including those intended to improve the energy efficiency of the statewide passenger and heavy-duty truck vehicle fleet (e.g. the Pavley Bill and the Low Carbon Fuel Standard), would improve vehicle fuel economies, thereby conserving gasoline and diesel fuel. These energy savings would continue to accrue over time. Furthermore, as described previously, the sustainability features of the Project that are incorporated into the project design (as described previously in this section) would further reduce Project energy consumption. The Project would also be in compliance with the planning documents described previously within this section.

As a result, the Project would not result in any significant adverse impacts related to project energy requirements, energy use inefficiencies, and/or the energy intensiveness of materials by amount and fuel type for each stage of the Project including construction, operations, maintenance, and/or removal. SMUD, the electricity provider to the site, and PG&E, the natural gas provider, maintains sufficient capacity to serve the Project. The Project would comply with all existing energy standards, including those established by Rancho Cordova, as described under Impacts 3.6-1 through 3.6-3, previously, and would not result in significant adverse impacts on energy resources. Furthermore, existing connections exist between the Project site and nearby pedestrian and bicycle pathways, and public transit access exists nearby, reducing the need for

local motor vehicle travel. Although improvements to the City's pedestrian, bicycle, and public transit systems would provide further opportunities for alternative transit, the Project would be linked closely with existing networks that, in large part, are sufficient for most residents of the Project and the City of Rancho Cordova as a whole. The Project would also be required to implement Mitigation Measures 3.6-1, which would greatly reduce the Project's net energy emissions further. For these reasons, the Project would not be expected cause an inefficient, wasteful, or unnecessary use of energy resources nor conflict with or obstruct a state or local plan for renewable energy or energy efficiency. This is a ***less than significant*** impact.

The purpose of this section is to disclose and analyze the potential impacts associated with hazards and hazardous materials related to the Project site and general vicinity, and to analyze the potential for exposure of people to hazards and hazardous materials as the Project is built and operated in the future. This section is based in part on the following:

- *Rancho Cordova General Plan* (City of Rancho Cordova, Adopted June 26, 2006);
- *Rancho Cordova General Plan Draft Environmental Impact Report* (City of Rancho Cordova, March 2006);
- *Phase I Environmental Site Assessment – Jaeger Ranch Property* (Wallace-Kuhl & Associates, September 2016);
- Envirostar database search (California Department of Toxic Substances Control [DTSC], 2018);
- GeoTracker Information System and Geographic Environmental Information Management System database search (State Water Resources Control Board [SWRCB], 2018);
- Toxics Release Inventory (TRI) Program database search (United States Environmental Protection Agency [EPA], 2018).

No comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic. The Sacramento Metropolitan Utilities District's (SMUD's) comment regarding its land use requirements for the transmission corridor, submitted via a letter dated August 6, 2018, are addressed in Section 3.9, Land Use.

3.7.1 ENVIRONMENTAL SETTING

PHYSICAL SETTING

Existing Site Uses

The Project site is currently vacant and has been previously used for agricultural uses (cattle grazing). The site is characterized by moderate rolling hills and areas of extensive flatlands, with wetlands, vernal pools, and seasonal drainage courses scattered throughout the site. A headwater tributary of Morrison Creek traverses the Project site, entering at the northeast corner and flowing generally to the southwest. A dirt/gravel road extends south into the site and terminates near a cluster of monitoring wells and a groundwater extraction feature.

The property is traversed by a 275-foot-wide utility easement occupied by a 230-kV Pacific Gas and Electric (PG&E) transmission line, one 230-kV Sacramento Municipal Utility District (SMUD) transmission line, and one 69-kV SMUD sub-transmission line. No other public utilities (water, sewer, drainage) are located on site.

The Phase I Environmental Site Assessment (ESA) performed for the Project site (see Appendix F) addressed conditions on the Project site associated with potential known hazards. One soil stockpile was observed along the eastern portion of the northern site boundary. No debris, stained soil, or distressed vegetation was observed in connection with this stockpile. Small amounts of refuse were observed along then northern and western site boundaries. Three modified tractor

tires set up as livestock watering troughs were observed along the northern Project site boundary. Each of these watering troughs had water lines plumbed utilizing PVC piping and valves. A metal water storage tank (approximately 1,500-gallon capacity) was observed north of the groundwater extraction well located within the Project site. At the time of the site reconnaissance, the tank was determined to be empty by tapping on the sides. The welded placard on the side of the tank stated that it was originally built to be utilized as an underground storage tank. No abnormally distressed vegetation or soil staining was observed in the vicinity of the tank.

Existing Surrounding Uses

The Project site is bound by the Sunridge Specific Plan to the north, east, and west, and by the SunCreek Specific Plan to the south and east. Land uses anticipated to the east and south of the Project site by the Sunridge Specific Plan and the SunCreek Specific Plan include low, medium, and high density residential uses, commercial mixed uses (retail, office, and retail professional), and neighborhood parks. Other land uses located nearby include new elementary, junior and senior high schools.

Site Topography

The topography of the site exhibits low relief topography with elevations ranging between 170 and 210 feet above mean sea level (MSL). The slopes throughout the site range from approximately zero to eight percent.

HAZARDS ASSESSMENT

For the purposes of this EIR, "hazardous material" is defined as provided in California Health & Safety Code, Section 25501:

- Any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment.

"Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

"Hazardous waste" is a subset of hazardous materials. For the purposes of this EIR, the definition of hazardous waste is essentially the same as that in the California Health & Safety Code, Section 25517, and in the California Code of Regulations (CCR), Title 22, Section 66261.2:

- Hazardous wastes are wastes that, because of their quantity, concentration, physical, chemical, or infectious characteristics, may either cause, or significantly contribute to, an increase in mortality or an increase in serious illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

CCR Title 22 categorizes hazardous waste into hazard classes according to specific characteristics of ignitibility, corrosivity, reactivity, or toxicity. Hazardous waste with any of these characteristics is also known as a Resource Conservation and Recovery Act (RCRA) waste.

Hazardous materials can be categorized as hazardous non-radioactive chemical materials, radioactive materials, toxic materials, and biohazardous materials. The previous definitions are adequate for non-radioactive hazardous chemicals. Radioactive and biohazardous materials are further defined as follows:

- Radioactive materials contain atoms with unstable nuclei that spontaneously emit ionizing radiation to increase their stability.
- Radioactive wastes are radioactive materials that are discarded (including wastes in storage) or abandoned.
- Toxic wastes are harmful or fatal when ingested or absorbed (e.g., containing mercury, lead). When toxic wastes are land disposed, contaminated liquid may leach from the waste and pollute groundwater.
- Biohazardous materials include materials containing certain infectious agents (microorganisms, bacteria, molds, parasites, and viruses) that cause or significantly contribute to increased human mortality or organisms capable of being communicated by invading and multiplying in body tissues.
- Medical wastes include both biohazardous wastes (byproducts of biohazardous materials) and sharps (devices capable of cutting or piercing, such as hypodermic needles, razor blades, and broken glass) resulting from the diagnosis, treatment, or immunization of human beings, or research pertaining to these activities.

There are countless categories of hazardous materials and hazardous wastes that could be found on any given property based on past uses. Some common examples include agrichemicals (chlorinated herbicides, organophosphate pesticides, and organochlorine pesticides, such as such as Mecoprop [MCPP], Dinoseb, chlordane, dichloro-diphenyltrichloroethane [DDT], and dichloro-diphenyl-dichloroethylene [DDE]), petroleum based products (oil, gasoline, diesel fuel), a variety of chemicals including paints, cleaners, and solvents, and asbestos-containing or lead-containing materials (e.g., paint, sealants, pipe solder).

“Recognized Environmental Conditions” is one of the terms used to identify environmental liability within the context of a Phase I ESA. The American Society for Testing and Materials (ASTM) defines the recognized environmental condition in the E1527-13 standard as “the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions.”

Historical Use Information

Historical information was reviewed to develop a history of the previous uses on the Project site and surrounding area, in order to evaluate the Project site and adjoining properties for evidence of Recognized Environmental Conditions. Standard historical sources reviewed during the preparation of this report included the following, as available:

ENVIRONMENTAL RECORDS AND DATABASES

De Novo Planning Group performed a search of local, state, and federal agency databases for the Project site and known contaminated sites in the vicinity. No parcels in the Project site were found to contain any known contamination.

The EPA Toxic Release Inventory (TRI) does not list data on disposal or other releases of toxic chemicals in the Project area (USEPA, 2017). The nearest TRI sites are located in the City of Rancho Cordova approximately 2.9 miles northwest of the Project site.

The DTSC maintains the *Envirostor Data Management System*, which provides information on hazardous waste facilities (both permitted and corrective action) as well as any available site cleanup information. There are no sites listed in the database within the Project site. The nearest Envirostor site, the Anatolia II Elementary School, is located approximately 0.45 miles west of the Project site and is a School Investigation Site with a status of No Further Action.

The Solid Waste Information System (SWIS) is a database of solid waste facilities that is maintained by the California Integrated Waste Management Board (CIWMB). The SWIS data identifies active, planned and closed sites. The Project site does not have any active or planned solid waste facilities listed in the database.

There is a broad list of federal and state databases that provide information for sites with varying potential for risk from the possible existence of hazardous materials. There are numerous redundancies among these various database listings. Below is a brief summary of each.

National Priorities List: The National Priorities List (NPL) of Superfund Sites and Proposed NPL Sites is EPA's database of more than 1,200 sites designated or proposed for priority cleanup under the Superfund program. NPL sites may encompass relatively large areas. The Project site is not listed in this database.

RCRIS System: The Resource Conservation and Recovery Information System (RCRIS) is an EPA database that includes selective information on sites that generate, transport, store, treat, and/or dispose of hazardous waste as defined by RCRA. Identification on this list does not indicate that there has been an impact on the environment. The Project site is not listed in this database.

CORRACTS: Corrective Action Report (CORRACTS) is an EPA database that identifies hazardous waste handlers with RCRA corrective action activity. The Project site is not listed in this database.

PADS System: PCB Activity Database System (PADS) is an EPA database that identifies generators, transporters, commercial storers, and/or brokers and disposers of polychlorinated biphenyls

(PCBs) who are required to notify EPA of such activities. The Project site is not listed in this database.

Cortese Database: The Cortese database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with underground storage tanks (USTs) having a reportable release, and all solid waste disposal facilities from which there is known hazardous substance migration. The source of this database is the California Environmental Protection Agency (Cal EPA). The Project site is not listed in this database.

GeoTracker: Geotracker provides online access to environmental data and is the interface to the Geographic Environmental Information Management System, a data warehouse which tracks regulatory data about underground fuel tanks, fuel pipelines, and public drinking water supplies. GeoTracker has replaced past databases, such as the Leaking Underground Storage Tank Information System and the Underground Storage Tank (UST) database. Permitted USTs are not located in the Project site. The nearest permitted UST is located at the ARCO Gas Station (#7029), located approximately 1.15 miles northwest of the Project site.

Hazardous Material Sites

As noted above, the State of California Hazardous Waste and Substances Site List (also known as the "Cortese List") is a planning document used by the state, local agencies, and developers to comply with the California Environmental Quality Act (CEQA) requirements for providing information about the location of hazardous materials sites. Government Code Section 65962.5 requires Cal EPA to annually update the Cortese List. DTSC is responsible for preparing a portion of the information that comprises the Cortese List. Other state and local government agencies are required to provide additional hazardous material release information that is part of the complete list.

Searches of the GeoTracker database identified ten active and five inactive hazardous material sites located within one mile of the Project site known to handle and store hazardous materials that are associated with a hazardous material related release or occurrence. The terms "release" or "occurrence" include any means by which a substance could harm the environment: by spilling, leaking, discharging, dumping, injecting, or escaping.

Table 3.7-1 displays the known hazardous material sites located within one mile of the Project site with a description of the type, status, and address.

TABLE 3.7-1: GEOTRACKER KNOWN HAZARDOUS MATERIAL RELEASE SITES WITHIN 1 MILE

SITE NAME	*TYPE*	*STATUS*	*ADDRESS*
ARCO 7029	Permitted UST	Active	4000 Sunrise Blvd., Rancho Cordova
Elementary School No. 42	School Investigation	No Action Required	Douglas Rd./Sunrise Blvd., Rancho Cordova
Anatolia II Elementary School	School Investigation	No Further Action	Appolon Dr./Sophistry Dr., Rancho Cordova
Inactive Rancho Cordova Test Site – Kappa/Gamma Complex	Cleanup Program Site	Open – Assessment & Interim Remedial Action	Quicksilver Dr., Rancho Cordova

SITE NAME	*TYPE*	*STATUS*	*ADDRESS*
Azteca Construction	LUST Cleanup Site	Completed - Case Closed	3871 Security Park Dr., Rancho Cordova
McDonnell Douglas – Inactive Test Site	State Response	Active	11505 Douglas Rd., Rancho Cordova
General Electric Medical Systems	Haz Waste - RCRA	Closed	3920 Security Park Dr., Rancho Cordova
Inactive Rancho Cordova Test Site – Southern Groundwater Contamination	Cleanup Program Site	Open - Remediation	Douglas Rd., Rancho Cordova
Inactive Rancho Cordova Test Site – IRCTS – Administration Area	Cleanup Program Site	Open - Remediation	Douglas Rd., Rancho Cordova
McDonnell Douglas/Aerojet Inactive (Field Point EX 26)	Complex Site Cleanup Program Facility	Open – Assessment & Interim Remedial Action	4,000 acres bounded by Douglas Rd. & Sunrise Blvd., Rancho Cordova
McDonnell Douglas/Aerojet Inactive (Field Point EX 21)	Complex Site Cleanup Program Facility	Open – Assessment & Interim Remedial Action	4,000 acres bounded by Douglas Rd. & Sunrise Blvd., Rancho Cordova
McDonnell Douglas/Aerojet Inactive (Field Point EX 20)	Complex Site Cleanup Program Facility	Open – Assessment & Interim Remedial Action	4,000 acres bounded by Douglas Rd. & Sunrise Blvd., Rancho Cordova
McDonnell Douglas/Aerojet Inactive (Field Point EX 22)	Complex Site Cleanup Program Facility	Open – Assessment & Interim Remedial Action	4,000 acres bounded by Douglas Rd. & Sunrise Blvd., Rancho Cordova
McDonnell Douglas/Aerojet Inactive (Field Point EX 27)	Complex Site Cleanup Program Facility	Open – Assessment & Interim Remedial Action	4,000 acres bounded by Douglas Rd. & Sunrise Blvd., Rancho Cordova

SOURCE: STATE WATER RESOURCES CONTROL BOARD GEOTRACKER (2018).

The ARCO 7029 site is an active permitted UST. The permitting agency for this site is the Sacramento County Environmental Management Department. The Department performs routine inspections of ongoing site operations at all permitted UST sites. As such, there are no hazards associated with this site that would affect the Project site.

The Inactive Rancho Cordova Test Site – Kappa/Gamma Complex site is a cleanup program site. Although the site has a cleanup status of Open – Assessment & Interim Remedial Action, the site history information on GeoTracker indicates that no further action and/or remedial action is required. Remedial Investigation involving soil, soil vapor, and groundwater samples was completed between July and September 1998. Contaminants of concern included volatile organics, metals, and kerosene. Kerosene was not detected at levels above limits. Mercury was the only metal found to be exceeding limits, and was evaluated in the risk assessment. Volatile organic compounds were detected in soil vapor, but are not expected to impact groundwater. Based on results of the health and ecological risk assessment, it is unlikely that exposures to soil or soil vapor will pose a risk to any current or future receptors. It is also unlikely that regional groundwater will be impacted. As such, there are no hazards associated with this site that would affect the Project site.

Eight sites listed in the above table are associated with the 4,000 acre former Aerojet site, including the: McDonnell Douglas – Inactive Test Site; Inactive Rancho Cordova Test Site – Southern Groundwater Contamination; Inactive Rancho Cordova Test Site – IRCTS – Administration Area; McDonnell Douglas/Aerojet Inactive (Field Point EX 26); McDonnell Douglas/Aerojet Inactive (Field Point EX 21); McDonnell Douglas/Aerojet Inactive (Field Point EX 20); McDonnell

Douglas/Aerojet Inactive (Field Point EX 22); and McDonnell Douglas/Aerojet Inactive (Field Point EX 27).

McDonnell Douglas – Inactive Test Site is a State Response site. The cleanup oversight agencies are the DTSC and the Regional Water Quality Control Board – Central Valley. The site, comprised of approximately 4,000 acres, is located between White Rock Road and Douglas Boulevard and between Sunrise Boulevard and just west of Grant Line Road. The site was utilized from approximately 1956 to 1972 for the assembly and testing of rocket systems and components. The last static rocket test occurred in 1969. The site consisted of seven areas, six utilized as test areas and one area serving for engineering and administration (now known as "Security Park"). Several other areas have been identified at the site including landfills, propellant burn areas and a rice hull burn area. During the processes involved in cleaning tested materials and maintaining test areas, numerous solvents, including chlorinated solvents, were utilized. Fuels utilized in testing included RP-1, hydrazine, ammonium perchlorate, and liquid hydrogen/oxygen. Releases to soil, surface water and groundwater of chlorinated solvents and fuels were detected during the Preliminary Endangerment Assessment (PEA).

The Inactive Rancho Cordova Test Site – Southern Groundwater Contamination site is a Cleanup Program site. The site has a cleanup status of Open – Remediation as of April 15, 2011. The site is an inactive rocket testing facility owned and operated over the years by Aerojet and/or the McDonnell-Douglas Corporation. The property is currently owned by Aerojet. The site is located roughly between White Rock Road on the North and Douglas Road on the south. The east and west directions are not as well defined by roads and cover the middle two-thirds of the area between Sunrise Boulevard and Grant Line Road. The remedial investigation is nearly complete on the several operable units. Groundwater remediation has been on-going for since 2004. The area is planned for the Rio Del Oro development consisting of housing, commercial and office facilities. As such, there are no hazards associated with this site that would affect the Project site.

The Inactive Rancho Cordova Test Site – IRCTS – Administration Area site is a cleanup program site. Although the site has a cleanup status of Open – Remediation, the site history information on GeoTracker indicates that the surface soils have been remediated to cleanup levels specified by DTSC. Soil vapor extraction system has been shutdown. Groundwater extraction system has been implemented and is controlling the downgradient migration of the plume. The groundwater is being covered under the site listed as IRCTS Southern Groundwater. As such, there are no hazards associated with this site that would affect the Project site.

The five McDonnell Douglas/Aerojet Inactive Field Points (Field Points EX 26, 27, 20, 21, and 22) have a status of Open – Assessment & Interim Remedial Action. The wells are a combination of monitoring wells and groundwater extraction wells associated with the inactive Rancho Cordova Test Site (Former McDonnell Douglas Test Site) located less than one-mile north of the site.

According to the site history information on GeoTracker, some interim remedial measures have taken place and additional actions will be necessary in the near future. Water supply issues are being addressed by pump and treat. All planned extraction wells have been constructed. Groundwater extraction and treatment systems are operating under an NPDES permit with the

current discharge of the treated groundwater to Morrison Creek at two locations. Soil vapor extraction and treatment at the Administration Area has been completed and the system decommissioned. An in-situ groundwater remediation project has been operating at the Sigma Complex to remediate perchlorate in groundwater at the source area. The Boeing Company is looking at expanding the system to help flush out perchlorate in the vadose zone at the source area. Extracted groundwater at these source areas will be treated in vessels designed to remove perchlorate biologically and Trichloroethylene (TCE) by granular activated carbon. The first of these treatment systems commenced in summer 2010.

According to the Phase I ESA prepared for the Project site, the constituents of concern associated with the former McDonnell Douglas Test Site include perchlorate and TCE. Groundwater is being extracted and pumped to a treatment plan approximately one-mile north/northwest of the site. The monitoring wells were installed to verify the edge of the plume and monitor concentrations of the constituents of concern. The minimum depth to water in these wells is reported to have been 149 feet below ground surface.

As part of the Phase I ESA, Wallace-Kuhl & Associates interviewed Mr. Alex McDonald of the Central Valley Regional Water Quality Control Board regarding sources of groundwater contamination within the former McDonnell Douglas facility. Mr. McDonald described two groundwater plumes originating from the former McDonnell Douglas facility approximately one-mile north of the Project site. Mr. McDonald reports that both plumes are within a deeper aquifer and that a layer of clean water separates the contaminants from the ground surface. Mr. McDonald stated the clean water layer forms a barrier to vapor migration; hence, there are no vapor intrusions concerns related to the two plumes. As such, there are no hazards associated with this site that would affect the Project site.

In order to determine whether any hazards are associated with the groundwater plume (see discussion above), Wallace-Kuhl & Associates conducted a preliminary screening for vapor encroachment conditions (VEC) beneath the site using the Tier I vapor encroachment screening evaluation. The Tier I screening included performing a *Search Distance Test* to identify if there are any known or suspect contaminated properties surrounding or upgradient of the site within specific search radii, and a *Chemicals of Concern (COC) Test* (for those known or suspect contaminated properties identified within the *Search Distance Test*) to evaluate whether or not COC are likely to be present.

Based on the completion of the VEC-screening matrix, a VEC can be ruled out because a VEC does not or is not likely to exist. EDR® provided a Vapor Encroachment Screen for the site. No areas of concern were identified.

The presence of perchlorate and TCE in groundwater under the Project site associated with the groundwater plume constitutes a Recognized Environmental Condition. The responsible party has been identified and ongoing groundwater treatment and monitoring is taking place with regulatory oversight provided by the Central Valley Regional Water Quality Control Board. Given the depth to water and soil conditions, Wallace & Kuhl concluded that it is unlikely that the TCE and perchlorate plume as currently understood will prohibit the proposed development. Periodic changes to the

groundwater monitoring and remedial program may be required necessitating the abandonment and installation of wells may be required.

Aerial Imagery

Aerial imagery from Google Earth was reviewed for information regarding past conditions and land use at the Project site and in the immediate vicinity. Below is a brief summary of the aerial imagery and related site conditions:

- 1993 – The Project site is vacant, except for transmission lines, similar to the current conditions. The property is traversed by a 275-foot-wide utility easement occupied by a 230-kV Pacific Gas and Electric (PG&E) transmission line, one 230-kV Sacramento Municipal Utility District (SMUD) transmission line, and one 69-kV SMUD sub-transmission line. None of the existing surrounding urban land uses have been developed. Three ranchette-style homes are located to the north and west of the site.
- 2003 – The Project site conditions are similar to the 1993 image. Dirt roadways have formed in the northern portion of the site, leading from the northern Project site boundary south to one of the PG&E transmission towers. Grading for the existing residential subdivisions to the west of the site has begun.
- 2005 – The Project site conditions are similar to the 2003 image. Paving and lot placement at the existing residential subdivisions to the west of the site has begun. Grading for the existing residential subdivision to the north of the site has also begun.
- 2009 – The Project site conditions are similar to the 2003 image. A cluster of small utility buildings and structures is located in the northern portion of the Project site near two of the PG&E transmission towers. A well-defined dirt or gravel road continues from Big Meadow Way adjacent north of the Project site south to the group of utility buildings and structures. The existing residential subdivisions to the west and north of the site are nearly complete.
- 2010 – The Project site conditions are similar to the 2009 image. A man-made drainage channel is located in the northeastern portion of the Project site. The channel appears to flow from an existing settling pond to the north of the site approximately 560 feet south to an existing natural drainage channel.
- 2018 – The Project site conditions are nearly identical to the 2010 image. Grading and site preparation of the adjacent residential subdivisions to the north and west has begun.

Historical Land Use

The historical land use research dating back to the late 1800s revealed that the Project has remained largely undeveloped. Dry farming and livestock grazing appear to have been the historic land uses. According to the Phase I ESA, no environmental liens are associated with the Project site.

Transportation of Hazardous Materials

The transportation of hazardous materials within the City is subject to various federal, state, and local regulations. The only roadway and transportation route approved for the transportation of explosives, poisonous inhalation hazards, and radioactive materials in the City is Interstate 50.

3.7.2 REGULATORY SETTING

FEDERAL

The primary federal agencies that are responsible for overseeing regulations and policies regarding hazardous materials are the EPA, Department of Labor Occupational Safety and Health Administration (OSHA), and the Department of Transportation (DOT). Several laws governing the transport, storage, and use of hazardous materials are governed by these agencies as well as oversight for contaminated sites cleanup. Federal laws and regulations that are applicable to hazards and hazardous materials are presented below.

Hazardous Materials Transportation Act

The Hazardous Materials Transportation Act, as amended, is the basic statute regulating hazardous materials transportation in the United States. The purpose of the law is to provide adequate protection against the risks to life and property inherent in transporting hazardous materials in interstate commerce. This law gives the U.S. Department of Transportation (USDOT) and other agencies the authority to issue and enforce rules and regulations governing the safe transportation of hazardous materials (DOE 2002).

Resource Conservation and Recovery Act

The 1976 Federal Resource Conservation and Recovery Act (RCRA) and the 1984 RCRA Amendments regulate the treatment, storage, and disposal of hazardous and non-hazardous wastes. The legislation mandated that hazardous wastes be tracked from the point of generation to their ultimate fate in the environment. This includes detailed tracking of hazardous materials during transport and permitting of hazardous material handling facilities.

The 1984 RCRA amendments provided the framework for a regulatory program designed to prevent releases from USTs. The program establishes tank and leak detection standards, including spill and overflow protection devices for new tanks. The tanks must also meet performance standards to ensure that the stored material will not corrode the tanks. Owners and operators of USTs had until December 1998 to meet the new tank standards. As of 2001, an estimated 85 percent of USTs were in compliance with the required standards.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) introduced active federal involvement to emergency response, site remediation, and spill prevention, most notably the Superfund program. CERCLA was intended to be comprehensive in encompassing both the prevention of, and response to, uncontrolled hazardous substances

releases. CERCLA deals with environmental response, providing mechanisms for reacting to emergencies and to chronic hazardous material releases. In addition to establishing procedures to prevent and remedy problems, it establishes a system for compensating appropriate individuals and assigning appropriate liability. It is designed to plan for and respond to failure in other regulatory programs and to remedy problems resulting from action taken before the era of comprehensive regulatory protection.

Natural Gas Pipeline Safety Act

The Natural Gas Pipeline Safety Act authorizes the U.S. Department of Transportation Office of Pipeline Safety to regulate pipeline transportation of natural (flammable, toxic, or corrosive) gas and other gases as well as the transportation and storage of liquefied natural gas. The Office of Pipeline Safety regulates the design, construction, inspection, testing, operation, and maintenance of pipeline facilities. While the federal government is primarily responsible for developing, issuing, and enforcing pipeline safety regulations, the pipeline safety statutes provide for State assumption of the intrastate regulatory, inspection, and enforcement responsibilities under an annual certification. To qualify for certification, a state must adopt the minimum federal regulations and may adopt additional or more stringent regulations as long as they are not incompatible.

Toxic Substances Control Act

The Toxic Substances Control Act of 1976 provides the EPA with authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures. Certain substances are generally excluded from Toxic Substances Control Act, including, among others, food, drugs, cosmetics and pesticides. The Toxic Substances Control Act addresses the production, importation, use, and disposal of specific chemicals including PCBs), asbestos, radon and lead-based paint.

Various sections of Toxic Substances Control Act provide authority to:

- Require, under Section 5, pre-manufacture notification for "new chemical substances" before manufacture
- Require, under Section 4, testing of chemicals by manufacturers, importers, and processors where risks or exposures of concern are found
- Issue Significant New Use Rules (SNURs), under Section 5, when it identifies a "significant new use" that could result in exposures to, or releases of, a substance of concern.
- Maintain the Toxic Substances Control Act Inventory, under Section 8, which contains more than 83,000 chemicals. As new chemicals are commercially manufactured or imported, they are placed on the list.
- Require those importing or exporting chemicals, under Sections 12(b) and 13, to comply with certification reporting and/or other requirements.
- Require, under Section 8, reporting and record-keeping by persons who manufacture, import, process, and/or distribute chemical substances in commerce.
- Require, under Section 8(e), that any person who manufactures (including imports), processes, or distributes in commerce a chemical substance or mixture and who obtains

information which reasonably supports the conclusion that such substance or mixture presents a substantial risk of injury to health or the environment to immediately inform EPA, except where EPA has been adequately informed of such information. EPA screens all Toxic Substances Control Act b§8(e) submissions as well as voluntary "For Your Information" (FYI) submissions. The latter are not required by law, but are submitted by industry and public interest groups for a variety of reasons.

STATE

The primary state agencies that are responsible for overseeing regulations and policies regarding hazardous materials are the California Office of Emergency Services (OES), Cal EPA, DTSC, California Department of Transportation (Caltrans), California Highway Patrol (CHP), California Water Quality Control Board, and the California Air Resources Board. Several laws governing the generation, transport, and disposal of hazardous materials are administered by these agencies. State laws and regulations that are applicable to hazards and hazardous materials are presented below.

California Health and Safety Code

Cal EPA has established rules governing the use of hazardous materials and the management of hazardous wastes. Many of these regulations are embodied in the California Health and Safety Code. The code includes regulations that govern safe drinking water, substances control, land reuse and revitalization, remediation, restoration, and methamphetamine contaminated cleanups.

California Hazardous Materials Release Response Plans and Inventory Program Business Plan

When hazardous materials are improperly handled or stored, they can result in a threat to employees, public health, and/or the contamination of the environment. State and Federal Community Right-to-Know laws were passed in 1984. These laws allow public access to information about the types and amounts of chemicals being used at local businesses. The laws also require businesses to plan and prepare for a chemical emergency through the preparation of a Hazardous Materials Inventory that is certified annually and a Hazardous Materials Business Plan that is certified tri-annually. Businesses are inspected at least once every three years by a CUPA inspector to verify compliance with the California Health and Safety Code and California Code of Regulations.

A Business Emergency Response Plan and Inventory is required of any facility which handles hazardous materials or waste in amounts greater than:

- 55 gallons for liquids;
- 500 pounds for solids; or
- 200 cubic feet for compressed gases.

On October 8, 2011, Governor Brown signed Assembly Bill (AB) 408. AB 408 amends the Health & Safety Code Chapter 6.95, Section 25503.5 hazardous materials inventory reporting thresholds. With passage of this legislation, inventory reporting quantities were changed as follows:

1. For a solid or liquid hazardous material that is classified as a hazard solely as an irritant or sensitizer, the new reporting quantity is 5,000 pounds.
2. For a hazardous material that is a gas, at standard temperature and pressure, and for which the only health and physical hazards are simple asphyxiation and the release of pressure, the new reporting quantity is 1,000 cubic feet. (Reporting of gases in a cryogenic state remains unchanged).
3. For oil-filled electrical equipment that is not contiguous to an electrical facility, the new reporting quantity for the oil is 1,320 gallons.

California Code of Regulations Title 22 and Title 26

The California Code of Regulations (CCR) Title 22 provides state regulations for hazardous materials, and CCR Title 26 provides regulation of hazardous materials management. In 1996, Cal EPA established the "Unified Hazardous Waste and Hazardous Materials Management Regulatory Program" (Unified Program) which consolidated the six administrative components of hazardous waste and materials into one program.

California Government Code Section 65962.5

The provisions in Government Code Section 65962.5 are commonly referred to as the "Cortese List" (after the Legislator who authored the legislation that enacted it). The list, or a site's presence on the list, has bearing on the local permitting process as well as on compliance with CEQA. Government Code § 65962.5 was originally enacted in 1985, and per subsection (g), the effective date of the changes called for under the amendments to this section was January 1, 1992. While Government Code Section 65962.5 refers to the preparation of a "list," many changes have occurred related to web-based information access since 1992 and this information is now largely available on the Internet sites of the responsible organizations. Those requesting a copy of the Cortese "list" are now referred directly to the appropriate information resources contained on the Internet web sites of the boards or departments that are referenced in the statute.

Section 65962.5(a)(1) requires that DTSC "shall compile and update as appropriate, but at least annually, and shall submit to the Secretary for Environmental Protection, a list of all the following: ….(1) [a]ll hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code ("HSC")."

The hazardous waste facilities identified in HSC § 25187.5 are those where DTSC has taken or contracted for corrective action because a facility owner/operator has failed to comply with a date for taking corrective action in an order issued under HSC § 25187, or because DTSC determined that immediate corrective action was necessary to abate an imminent or substantial endangerment.

Occupational Safety and Health Act

The Occupational Safety and Health Act of 1970 (OSH Act) was passed to prevent workers from being killed or otherwise harmed at work. The law requires employers to provide their employees with working conditions that are free of known dangers. The OSH Act created the Occupational Safety and Health Administration (OSHA), which sets and enforces protective workplace safety and health standards. OSHA also provides information, training and assistance to employers and workers.

The California Division of Occupational Safety and Health, better known as Cal/OSHA, protects and improves the health and safety of working men and women in California and the safety of passengers riding on elevators, amusement rides, and tramways – through the following activities:

- Setting and enforcing standards;
- Providing outreach, education, and assistance; and
- Issuing permits, licenses, certifications, registrations, and approvals.

LOCAL

Rancho Cordova General Plan

The Rancho Cordova General Plan contains the following goals and policies that are relevant to hazards and hazardous materials:

SAFETY ELEMENT

Goal S.1: Establish Rancho Cordova as a safe community and environment for all persons.

Policy S.1.1: Maintain acceptable levels of risk of injury, death, and property damage resulting from reasonably foreseeable safety hazards in Rancho Cordova.

Policy S.1.2: Cooperate with other local, regional, state, and federal agencies and with rail carriers in an effort to secure the safety of all residents of Rancho Cordova.

Policy S.1.3: Prepare for emergencies and disasters prior to their occurrence.

Policy S.1.4: Ensure plans are kept current to maintain Rancho Cordova as a safe community in the region.

Policy S.1.5: The City shall require written confirmation from applicable local, regional, state, and federal agencies that known contaminated sites have been deemed remediated to a level appropriate for land uses proposed prior to the City approving site development or provide an approved remediation plan that demonstrates how contamination will be remediated prior to site occupancy. This documentation will specify the extent of development allowed on the remediated site as well as any special conditions and/or restrictions on future land uses.

Goal S.5: Reduce the possibility of serious harm to residents, employees, or the environment as the result of an accidental release of toxic or hazardous substances.

Policy S.5.1: Work with public agencies and private companies to identify and work towards elimination of potential hazardous releases through compliance with State and Federal law.

Policy S.5.2: Consider the potential impact of hazardous facilities on the public and/or adjacent or nearby properties posed by reasonably foreseeable events. The City considers an event to be "reasonably foreseeable" when the probability of the event occurring is greater than one in one million per year.

Policy S.5.3: Regulate the storage of hazardous materials and waste consistent with State and Federal law.

Policy S.5.5: Separate hazardous or toxic materials from the public.

Policy S.5.6: Ensure that procedures are in place to reduce the chance of accidents in the transport of hazardous materials.

Goal S.6: Protect the community from potential harm associated with Mather Airport operations.

Policy S.6.1: Promote safe air operations at Mather Airport through cooperative implementation of the Mather Airport CLUP and similar plans and programs.

Sacramento Countywide Local Hazard Mitigation Plan

The Sacramento Countywide Local Hazard Mitigation Plan (December 2016) provides a guide to hazard mitigation planning to better protect the people and property of the County and participating jurisdictions from the effects of natural disasters and hazard events. This plan demonstrates the community's commitment to reducing risks from hazards and serves as a tool to help decision makers direct mitigation activities and resources. The plan was also developed in order for the County and participating jurisdictions to be eligible for certain federal disaster assistance.

County of Sacramento Basic Emergency Operations Plan

The County of Sacramento Basic Emergency Operations Plan (December 2012) addresses the County's planned response to extraordinary emergency situations associated with natural disasters, technological incidents, and national security emergencies in or affecting the County of Sacramento. The Plan does not apply to normal day-to-day emergencies or the established departmental procedures used to cope with such emergencies. Rather, the Plan focuses on operational concepts and would be implemented relative to large-scale disasters, which can pose major threats to life, property and the environment requiring unusual emergency responses. The purpose of the County of Sacramento Emergency Operations Plan is to provide the basis for a coordinated response before, during, and after a disaster incident affecting the County of Sacramento.

Sacramento County Area Plan

The Sacramento County Environmental Management Department established the Sacramento County Area Plan (SCAP) as a guideline for hazardous material related accidents or occurrences.

The purpose of the SCAP is "to delineate responsibilities and actions by various agencies in Sacramento County required to meet the obligation to protect the health and welfare of the populace, natural resources (environment), and the public and private properties involving hazardous materials." The SCAP is used for making initial decisions at a hazardous materials incident. The SCAP uses Level I, Level II and Level III classifications for hazardous material incidents, which are determined by the following planning basis:

- Level of technical expertise required to abate the incident;
- Extent of Municipal, County, and State Government involved;
- Extent of evacuation of civilians; and
- Extent of injuries and/or deaths.

Certified Unified Program Agency (CUPA)

The California Environmental Protection Agency designates specific local agencies as Certified Unified Program Agencies (CUPA), typically at the county level. Sacramento County Environmental Management Department is the CUPA for Sacramento County.

The Sacramento County Environmental Management Department coordinates the overall County response to disasters and also works with other municipalities in the region as well as state and federal agencies, community based and private organizations. Sacramento County Office of Emergency Services is responsible for:

- Alerting and notifying appropriate agencies when disaster strikes;
- Coordinating response recovery activities among multiple participating agencies and jurisdictions;
- Constantly monitoring incident status and maintaining situational awareness;
- Responding to complex incidents;
- Coordinating available resources to be mobilized in times of disaster;
- Developing plans and procedures in response to and recovery from disasters;
- Developing and providing preparedness materials and presentations to the public and business community;
- Administering and coordinating the Homeland Security grants for the county of Sacramento.

3.7.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the Project will have a significant impact from hazards and hazardous materials if it will:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
- For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan;
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires; and/or
- If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:
    - Substantially impair an adopted emergency response plan or emergency evacuation plan?
    - Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?
    - Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?
    - Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

As discussed in the Initial Study (see Appendix A), impacts associated with airports and private air strips would be ***less than significant***. The Project site is not located within a very high fire hazard severity zone; therefore, the thresholds associated with the Project's proximity to state responsibility areas or lands classified as very high fire hazard severity zones are not applicable to the Project and there is no impact associated with these thresholds. As such, these CEQA topics are not relevant to the Project and will not be addressed further.

IMPACTS AND MITIGATION MEASURES

Impact 3.7-1: Project implementation has the potential to create a significant hazard through the routine transport, use, or disposal of hazardous materials or through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (Less than Significant with Mitigation)

CONSTRUCTION PHASE IMPACTS

The Phase I ESA concluded that no environmental liens are associated with the site. As discussed previously, eight sites in the vicinity (see Table 3.7-1) are associated with the 4,000 acre former Aerojet site, including the: McDonnell Douglas – Inactive Test Site; Inactive Rancho Cordova Test Site – Southern Groundwater Contamination; Inactive Rancho Cordova Test Site – IRCTS – Administration Area; McDonnell Douglas/Aerojet Inactive (Field Point EX 26); McDonnell Douglas/Aerojet Inactive (Field Point EX 21); McDonnell Douglas/Aerojet Inactive (Field Point EX 20); McDonnell Douglas/Aerojet Inactive (Field Point EX 22); and McDonnell Douglas/Aerojet Inactive (Field Point EX 27).

According to the site history information on GeoTracker, interim remedial measures have taken place and additional actions will be necessary in the near future. Water supply issues are being addressed by pump and treat. All planned extraction wells have been constructed. Groundwater extraction and treatment systems are operating under an NPDES permit with the current discharge of the treated groundwater to Morrison Creek at two locations. Soil vapor extraction and treatment at the Administration Area has been completed and the system decommissioned. An in-situ groundwater remediation project has been operating at the Sigma Complex to remediate perchlorate in groundwater at the source area. The Boeing Company is looking at expanding the system to help flush out perchlorate in the vadose zone at the source area. Extracted groundwater at these source areas will be treated in vessels designed to remove perchlorate biologically and TCE by granular activated carbon. The first of these treatment systems commenced in summer 2010.

According to the Phase I ESA prepared for the Project site, the constituents of concern associated with the former McDonnell Douglas Test Site include perchlorate and TCE. The presence of perchlorate and TCE in groundwater under the Project site associated with the McDonnell Douglas groundwater plume constitutes a Recognized Environmental Condition. In order to determine whether any hazards are associated with the groundwater plume, Wallace-Kuhl & Associates conducted a preliminary screening for VEC beneath the site using the Tier I vapor encroachment screening evaluation; the evaluation indicated that a VEC can be ruled out because a VEC does not or is not likely to exist. No areas of concern were identified.

The responsible party has been identified and ongoing groundwater treatment and monitoring is taking place with regulatory oversight provided by the Central Valley Regional Water Quality Control Board. Given the depth to water and soil conditions, it is unlikely that the TCE and perchlorate plume as currently understood will have a significant adverse effect on the proposed

development. Periodic changes to the groundwater monitoring and remedial program may be required necessitating the abandonment and installation of wells may be required. Construction of the Project would not prohibit the ongoing groundwater monitoring or remedial program.

Additionally, construction of the Project would likely require the use of petroleum-based products (oil, gasoline, diesel fuel), and a variety of chemicals including paints, cleaners, and solvents. The use of these materials will pose a reasonable risk of release into the environment if not properly handled, stored, and transported. Mitigation Measure 3.7-1 requires the Project applicant to submit a Construction Site Management Plan, for review and approval by the City, that establishes management practices for handling hazardous materials, including fuels, paints, cleaners, solvents, etc., during construction to reduce the potential for spills and to direct the safe handling of these materials if encountered. If, during the construction process, the Project applicant or subcontractors generates hazardous waste, the applicant must register with the CUPA as a generator of hazardous waste, obtain an EPA ID# and accumulate, ship and dispose of the hazardous waste per Health and Safety Code Ch. 6.5. (California Hazardous Waste Control Law).

OPERATIONAL PHASE IMPACTS

The operational phase of the Project would occur after construction is completed and tenants and residents move in to occupy the structures and facilities on a day-to-day basis. The site would be primarily used for residential uses. Single family residential land uses do not routinely transport, use, or dispose of hazardous materials, or present a reasonably foreseeable release of hazardous materials, with the exception of common residential grade hazardous materials such as household cleaners, paint, etc. Additionally, operation of the Project would not prohibit the ongoing groundwater monitoring or remediation program discussed previously.

The commercial and residential mixed use component as well as the recreation center area and parks will likely use a variety of hazardous materials commonly found in urban areas including: paints, cleaners, cleaning solvents, and pesticides. If handled appropriately, these materials do not pose a significant risk. These facilities will store and use these materials. These materials would be stored and handled in accordance with best management practices approved by the Sacramento County Environmental Management Department. In accordance with the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program, prior to bringing hazardous materials (including 55 or more gallons for liquids, 500 or more pounds for solids, and/or 200 or more cubic feet for compressed gases) onsite, the applicant would be required to submit a Hazardous Materials Business Plan (HMBP) to Sacramento County Environmental Management Department (CUPA) for review and approval. The HMBP is required for all businesses in the County which handle or store quantities of hazardous materials, including hazardous wastes equal to or exceeding 55 gallons, 500 pounds, or 200 cubic feet of compressed gasses.

CONCLUSION

Construction and operation of the Project would not prohibit the ongoing groundwater monitoring or remedial program associated with the groundwater plume. Construction and operation of the Project may result in the release of hazardous materials into the environment. However, the Project applicant would be required to submit a Construction Site Management Plan for review

and approval by the City which would establish management practices for handling hazardous materials, including fuels, paints, cleaners, solvents, etc., during construction to reduce the potential for spills and to direct the safe handling of these materials if encountered. Additionally, the applicant would be required to submit a HMBP to the Sacramento County Environmental Management Department (CUPA) for review and approval. Overall, through compliance with existing regulations which control the use of hazardous materials, and with implementation of Mitigation Measure 3.7-1, this impact would be ***less than significant***.

MITIGATION MEASURE(S)

Mitigation Measure 3.7-1*: Prior to commencement of grading, the applicant shall submit Construction Site Management Plan for review and approval by the City. The Construction Site Management Plan shall establish management practices for handling hazardous materials, including fuels, paints, cleaners, solvents, etc., during construction to reduce the potential for spills and to direct the safe handling of these materials if encountered. The City shall approve the Construction Site Management Plan prior to any earth moving.*

Impact 3.7-2: The Project is not located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would not create a significant hazard to the public or the environment (Less than Significant)

According to the Phase I ESA, the Project site is not listed on the Cortese List. A further review of regulatory databases maintained by county, state, tribal, and federal agencies found no documentation of hazardous materials violations or discharge on the property and did not identify contaminated facilities within the appropriate ASTM search distances that would reasonably be expected to impact the property. Therefore, this is considered a ***less than significant*** impact.

Impact 3.7-3: Project implementation would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school (Less than Significant)

The Project has limited potential for the routine transport, use, or disposal of hazardous materials as discussed above (Impact 3.7-1). The closest school (Robert J. McGarvey Elementary School) is located approximately 0.45 miles west of the western boundary of the Project site. Other schools nearby include Sunrise Elementary School (0.75 miles northwest), and Mather Heights Elementary School (2.92 miles west). The Project is not located within one-quarter mile of an existing or proposed school and the Project components would not involve the routine transport, use, or disposal of hazardous materials, or present a reasonably foreseeable release of hazardous materials. Therefore, the Project would have a ***less than significant*** impact with respect to emitting hazardous emissions or handling hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school.

Impact 3.7-4: Project implementation would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan (Less than Significant)

(*Note: The following discussion is associated with potential impacts of the Project on emergency response plans and/or evacuation plans. Proposed emergency vehicle access to and from the site is addressed in Section 3.13, Transportation and Circulation.*)

Implementation of the Project would not result in any substantial modifications to the existing roadway system and would not interfere with potential evacuation or response routes used by emergency response teams. The Project would include the construction of internal and external access roads connecting the proposed uses to existing and future planned roadways. Primary access would be from Rancho Cordova Parkway. The Project would provide for future connections to an extension of Chrysanthy Boulevard east of the Project site.

The City is a participatory agency for the Sacramento Countywide Local Hazard Mitigation Plan, which plans for emergency management and evacuation in the event of disasters. According to the Plan, potential hazards in the County include severe weather (likely or highly likely), agricultural hazards (highly likely), bird strike (highly likely), climate change (highly likely), dam failure (unlikely), drought (likely), earthquake (occasional), flood (occasional/unlikely or highly likely), landslides (unlikely), levee failure (occasional), bank erosion (highly likely), subsidence (highly likely), volcano (unlikely), and wildfire (highly likely). The Sacramento Countywide Local Hazard Mitigation Plan does not include any specific requirements that would affect the Project.

The County of Sacramento Basic Emergency Operations Plan (December 2012) addresses the County's planned response to extraordinary emergency situations associated with natural disasters, technological incidents, and national security emergencies in or affecting the County of Sacramento. The Plan focuses on operational concepts and would be implemented relative to large-scale disasters, which can pose major threats to life, property and the environment requiring unusual emergency responses. The various plans and procedures (i.e., dam failure plan, flood alert system, and evacuation procedures) for emergency response and evacuation are integrated into the Emergency Operations Plan. The Emergency Operations Plan does not include any specific requirements that would affect the Project.

The Project would also not interfere with any emergency response plan or emergency evaluation plan. The Project does not include any actions that would impair or physically interfere with the Sacramento Countywide Local Hazard Mitigation Plan. The Project site includes vehicle access to provide for of ingress and egress in the event of an emergency that must comply with city street design standards to ensure streets adequately serve emergency response. An expanded discussion of local circulation and traffic volumes is provided in the Transportation and Circulation Section of this report. This is a ***less than significant*** impact.

Impact 3.7-5: Project implementation would not expose people or structures to a risk of loss, injury or death from wildland fires (Less than Significant)

The risk of wildfire is related to a variety of parameters, including fuel loading (vegetation), fire weather (winds, temperatures, humidity levels and fuel moisture contents) and topography (degree of slope). Steep slopes contribute to fire hazard by intensifying the effects of wind and making fire suppression difficult. Fuels such as grass are highly flammable because they have a high surface area to mass ratio and require less heat to reach the ignition point, while fuels such as trees have a lower surface area to mass ratio and require more heat to reach the ignition point.

The site is not located within an area where wildland fires are known to occur, or within a very high, high, or moderate Fire Hazard Severity Zone (FHSZ) as indicated by the California Department of Forestry & Fire Protection (CalFire) FHSZ Maps. The site is designated as a Local Responsibility Area (Incorporated) and as a Non-Very-High-FHSZ (Incorporated) by the CalFire FHSZ maps.

Approximately 199.5 acres of the site would be preserved. The preserve area would contain aquatic habitats as well as grassland. The remainder of the site would be developed with urban uses. The Sacramento Metropolitan Fire District does not have any interface requirements for new development. The Fire District ‘s personnel are trained and equipped to deal with emergency, including structural or wildland fires. Development of the site would be subject to the requirements of the National Fire Protection Association’s National Fire Code. Additionally, the Project will comply with the applicable standards for fire hydrants and fire sprinklers.

The Project site is surrounded by developed land uses and open space/agricultural land. Existing roadway, residential uses, and commercial uses are located to the north, northwest, and west, while undeveloped agricultural land is located to the east and south of the Project site. It is noted that future urban uses will be located to the east (Sunridge Specific Plan and SunCreek Specific Plan) and south (SunCreek Specific Plan) of the Project site. This is a ***less than significant*** impact.

This section describes the regulatory setting, regional hydrology and water quality impacts that are likely to result from Project implementation, and includes measures to reduce potential impacts related to stormwater drainage, flooding and water quality. This section is based in part on the following documents, reports and studies:

- *Rancho Cordova General Plan* (City of Rancho Cordova, Adopted June 26, 2006);
- *Rancho Cordova General Plan Draft Environmental Impact Report* (City of Rancho Cordova, March 2006);
- Sacramento County Water Agency 2015 Urban Water Management Plan (Brown Caldwell, 2016);
- Sunrise Douglas Community Plan/Sun Ridge Specific Plan Long-Term Water Supply Plan Revised Draft EIR (AECOM, January 2011);
- Sunrise Douglas Community Plan/Sun Ridge Specific Plan Long-Term Water Supply Plan Final EIR (AECOM, October 2011);
- Sacramento County Water Agency 2015 Urban Water Management Plan (Brown & Caldwell, June 2016);
- The Ranch Master Drainage Study [Third Submittal] (Watermark Engineering, April 30, 2019); and
- Water Supply Assessment for The Ranch at Sunridge (Sacramento County Water Agency, 2011).

A comment was received during the public review period for the Notice of Preparation regarding this topic from the Central Valley Regional Water Quality Control Board (RWQCB, July 2018). This comment is addressed within this section.

3.8.1 ENVIRONMENTAL SETTING

REGIONAL HYDROLOGY

The Project site is located in the City of Rancho Cordova, within Sacramento County near the center of the Sacramento Valley, approximately 16 miles southeast of the confluence of the American and Sacramento Rivers. The Sacramento Valley is bordered by the Coast Ranges and Delta on the west and the foothills of the Sierra Nevada to the east. Water resources in this region include rivers, streams, sloughs, marshes, wetlands, channels, harbors, and underground aquifers. The topography is generally flat, and is drained by the Sacramento River and the Yolo Bypass, which is part of the Sacramento River Flood Control Project.

Climate

Climate in the Sacramento Valley is characterized by warm, dry summers with an almost complete absence of rain, and mild winters with relatively light rains. Periods of dense and persistent low-level fog that are most prevalent between storms are characteristic of Sacramento Valley winter weather. The average winter temperature is a moderate 49 degrees Fahrenheit (°F). Most precipitation in the area results from air masses that move in from the Pacific Ocean from the west

or northwest during the winter rainy season (November to April). During the summer, daily temperatures range from 50°F to more than 100°F. The inland location and surrounding mountains shelter the area from much of the ocean breezes that keep the coastal regions moderate in temperature.

Watersheds

A watershed is a region that is bound by a divide that drains to a common watercourse or body of water. Watersheds serve an important biological function, oftentimes supporting an abundance of aquatic and terrestrial wildlife including special-status species and anadromous and native local fisheries. Watersheds provide conditions necessary for riparian habitat.

The State of California uses a hierarchical naming and numbering convention to define watershed areas for management purposes. This means that boundaries are defined according to size and topography, with multiple sub-watersheds within larger watersheds. Table 3.8-1 shows the primary watershed classification levels used by the State. The second column indicates the approximate size that a watershed area may be within a particular classification level, although variation in size is common.

TABLE 3.8-1: STATE OF CALIFORNIA WATERSHED HIERARCHY NAMING CONVENTION

WATERSHED LEVEL	*APPROXIMATE SQUARE MILES (ACRES)*	*DESCRIPTION*
Hydrologic Region (HR)	12,735 (8,150,000)	Defined by large-scale topographic and geologic considerations. The State of California is divided into ten HRs.
Hydrologic Unit (HU)	672 (430,000)	Defined by surface drainage; may include a major river watershed, groundwater basin, or closed drainage, among others.
Hydrologic Area (HA)	244 (156,000)	Major subdivisions of hydrologic units, such as by major tributaries, groundwater attributes, or stream components.
Hydrologic Sub-Area (HSA)	195 (125,000)	A major segment of an HA with significant geographical characteristics or hydrological homogeneity.

SOURCE: CALIFORNIA DEPARTMENT OF WATER RESOURCES, 2012.

HYDROLOGIC REGION

The Project site is located in the Sacramento River Hydrologic Region, which covers approximately 17.4 million acres (27,200 square miles) and all or large portions of Modoc, Siskiyou, Lassen, Shasta, Tehama, Glenn, Plumas, Butte, Colusa, Sutter, Yuba, Sierra, Nevada, Placer, Sacramento, El Dorado, Yolo, Solano, Lake, and Napa counties. Small areas of Alpine and Amador counties are also within the region. Geographically, the region extends south from the Modoc Plateau and Cascade Range at the Oregon border, to the Sacramento-San Joaquin Delta. The Sacramento Valley, which forms the core of the region, is bounded to the east by the crest of the Sierra Nevada and southern Cascades and to the west by the crest of the Coast Range and Klamath Mountains. Other significant features include Mount Shasta and Lassen Peak in the southern Cascades, Sutter Buttes in the south-central portion of the valley, and the Sacramento River, which is the longest river

system in the State of California with major tributaries the Pit, Feather, Yuba, Bear and American rivers. Area population centers include Sacramento, Redding, Chico, and Davis.

HYDROLOGIC UNIT

The Project site is located within the Valley-American Hydrologic Unit. For purposes of regional planning, hydrologic units are generally considered to be the appropriate watershed planning level. However, the hydrologic unit level is generally too large in terms of a planning scale for individual projects, and a hydrologic area or hydrologic subarea may be considered more appropriate.

HYDROLOGIC AREA/SUB-AREA

The Project site is located within the Morrison Creek Hydrologic Area and the Franklin Hydrologic Sub-Area. The Morrison Creek Hydrologic Area is a tributary to the Sacramento River. Storm water flows in the area captured in the local storm drains are discharged to the American River. The Franklin Hydrologic Sub-Area is naturally drained by Laguna Creek, a seasonal water tributary to the Sacramento River.

LOCAL SETTING

The 530-acre Project site is bound by existing single-family residential uses and Douglas Road to the north, vacant land and Grant Line Road to the east, vacant land and Kiefer Boulevard to the south, and Rancho Cordova Parkway, single family residential, and vacant land on the west.

The Project site is currently vacant and has been previously used for agricultural uses (cattle grazing). The topography of the site exhibits low relief topography with elevations ranging between 170 and 210 feet above mean sea level (MSL). The slopes throughout the site range from approximately zero to eight percent. The site is characterized by irregular topography, with moderate rolling hills, depressions, and areas of extensive flatlands, with wetlands, vernal pools, and seasonal drainage courses scattered throughout the site. A headwater tributary of Morrison Creek traverses the Project site, entering at the northeast corner and flowing generally to the southwest. A total of 21.53 acres of jurisdictional aquatic resources have been mapped with the Project site, including: 2.92 acres of depressional seasonal wetlands, 15.04 acres of vernal pools, 1.66 acres of riverine seasonal wetlands, 0.06 acres of riverine seasonal wet swales, 1.54 acres of intermittent drainages, and 0.30 acres of drainage basin outfalls.

The Project site is located within the Morrison Creek watershed (see Figure 3.8-1, Watersheds). Land use in the Morrison Creek watershed is a mix of rural and urban uses including grazing, agricultural, low- to high-density residential, industrial, and commercial. The portion of the watershed west of Hedge Road and Waterman Road is predominantly urban. Morrison Creek flows southwestward from near the intersection of White Rock Road and Grant Line Road to Stone Lake west of Interstate 5.

Drainage

The Master Drainage Study prepared by Watermark Engineering in 2019 describes existing drainage conditions for the Project site. Lower Morrison Creek South (LMCS) generally flows from

the northeast corner to the west central property boundary of the Project. The total tributary area of LMCS entering the Project site is 1,120 acres and the 100-year, 12-hour natural flow was estimated to be 678 cfs with a mitigated flow of 662 cfs, which was used to determine water surface elevations along the undisturbed LMCS channel.

The Project site was subdivided into six sheds: three sheds that represent the developed areas north of LMCS; two development areas south of LMCS; and the sixth shed representing the LMCS corridor. Table 3.8-2 provides a summary of the shed areas that includes estimates of natural flow from each shed. The flow estimates are used only as guides for the detention basin analyses.

TABLE 3.8-2: SUMMARY OF EXISTING CONDITIONS SUBSHEDS

SHED ID	*SHED AREA (AC)*	*100-YR PEAK FLOW (CFS)A,B*
West Basin	104.2	100
East Basin	46.0	56
PGE Basin	14.7	23
North-South Basin	50.2	58
South-South Basin	95.7	94
Remainder	218.7	N/A
Total	530	N/A

A: ESTIMATED FROM REGRESSION EQUATION DEVELOPED FOR THE SUNCREEK. SEE MODELING SECTION OF MASTER DRAINAGE STUDY IN APPENDIX J.1 FOR DETAILS.

B: CFS: CUBIC FEET PER SECOND

SOURCE: WATERMARK ENGINEERING, 2019

Stormwater Quality

Potential hazards to surface water quality include the following nonpoint pollution sources: high turbidity from sediment resulting from erosion of improperly graded construction projects, concentration of nitrates and dissolved solids from agriculture or surfacing septic tank failures, viruses, bacteria, and nutrients from pet waste and failing septic systems, oil, grease, and toxic chemicals from motor vehicles, heavy metals from roof shingles, motor vehicles, and other sources, contaminated street, lawn and impervious area run-off from urban areas, and warm water drainage discharges into cold water streams.

A critical period for surface water quality is following a rainstorm which produces significant amounts of drainage runoff into streams with low flows, resulting in poor dilution of contaminants and elevated levels in the low flowing streams. Such conditions are most frequent during the fall at the beginning of the rainy season when stream flows are near their lowest annual levels and contaminants have accumulated on impervious surfaces over the drier summer months. Besides greases, oils, pesticides, litter, and organic matter associated with such runoff, heavy metals such as copper, zinc, and cadmium can cause considerable harm to aquatic organisms when introduced to streams in low flow conditions.

Urban stormwater runoff was managed as a non-point discharge (a source not readily identifiable) under the Federal Water Pollution Control Amendments of 1972 (PL 92-500, Section 208) until the mid-1980s. However, since then, the Federal Environmental Protection Agency has continued to

develop policies and permitting which categorize urban runoff as a point source (an identifiable source) subject to National Pollution Discharge Elimination System (NPDES) permits. Rules now affect medium and large urban areas, and further rulemaking is expected as programs are developed to meet requirements of Federal water pollution control laws.

Surface water pollution is also caused by erosion. Excessive and improperly managed grading and vegetation removal associated with urban development, as well as quarrying, logging, and agricultural practices can lead to increased erosion of exposed earth and sedimentation of watercourses during rainy periods. . In slower moving water bodies these same factors often cause a buildup of sediment, which ultimately reduces the capacity of the water system to percolate and recharge groundwater basins, as well as adversely affects both aquatic resources and flood control efforts.

303(D) IMPAIRED WATER BODIES

Section 303(d) of the federal Clean Water Act requires States to identify waters that do not meet water quality standards or objectives and thus, are considered "impaired." Once listed, Section 303(d) mandates prioritization and development of a Total Maximum Daily Load (TMDL). The TMDL is a tool that establishes the allowable loadings or other quantifiable parameters for a waterbody and thereby the basis for the States to establish water quality-based controls. The purpose of TMDLs is to ensure that beneficial uses are restored and that water quality objectives are achieved.

The following waterways in or near the City of Rancho Cordova are identified as impaired waterways by the State Water Resources Control Board under Section 303(d) of the Clean Water Act: American River (mercury and unknown toxicity); Elder Creek (chlorpyrifos and diazinon); Morrison Creek (diazinon); and Sacramento River (diazinon, mercury and unknown toxicity).

Chlorpyrifos and diazinon are organophosphorus pesticides used for urban and agricultural pest control, while the source of mercury for the Sacramento and American rivers is associated with legacy mining activities within their watersheds. Morrison Creek has been included in the TMDL Report for Diazinon and Chlorpyrifos Impaired Urban Creeks in Sacramento County (September 2004). The Sacramento River water quality issues with diazinon have been addressed in a TMDL for the Sacramento and Feather Rivers.

WATER RESOURCES

The Sacramento County Water Agency (SCWA) would provide water supplies to the Project through its Zone 40 conjunctive-use water supply system. The Project is identified as a subarea within Zone 40 known as the North Service Area (NSA). In the long term, SCWA anticipates the majority of water demands in the NSA (including the proposed Project) would be met with surface water. However, the year-to-year mix of surface and groundwater varies depending on a large

number of variables and surface water and groundwater supplies would be adjusted as necessary to meet the demands of the NSA as part of its conjunctive use program.[1]

Groundwater Supply

An SCWA water source for the Project area is groundwater from the South American Sub-basin, which is defined by the California Department of Water Resources (DWR) Bulletin 118. According to Bulletin 118, the South American Sub-basin is defined as the area bounded on the west by Interstate 5 and the Sacramento River, on the north by the American River, on the south by the Cosumnes and Mokelumne rivers and on the east by the Sierra Nevada. The Central Basin covers a major portion of this basin.

Groundwater in the Central Basin is generally classified as occurring in a shallow aquifer (Laguna or Modesto Formation) and in a deep aquifer (Mehrten Formation). The Laguna or Modesto Formation consists of older alluvial deposits of loosely to moderately compacted sand, silt, and gravel deposited in alluvial fans. These deposits are moderately permeable and have a thickness of about 100 to 650 feet. The deeper Mehrten Formation is a sequence of fragmented volcanic rocks which crops out in a discontinuous band along the eastern margin of the basin. It is composed of black volcanic sands, stream gravels, silt, and clay inter-bedded with intervals of dense tuff breccia. The sand and gravel intervals are highly permeable and the tuff breccia intervals act as confining layers. The thickness of the Mehrten Formation is between 200 and 1,200 feet. Groundwater is located from 20 to 100 feet below the ground surface depending on when and where the measurement is taken. The base of the potable water portion of the deep aquifer is located approximately 1,400 feet below the ground surface.

Intensive use of groundwater over the past 60 years has resulted in a general lowering of groundwater elevations. Over time, isolated groundwater depressions have grown and coalesced into a single cone of depression that is centered in the southwestern portion of the basin, approximately 15 miles southwest of the Project site. Groundwater level trends through much of the basin have generally declined consistently from the 1950s and 1960s to about 1980 by 20 to 30 feet. From 1980 through 1983, water levels recovered by about 10 feet and remained stable until the beginning of the 1987-1992 drought; however, wells in the vicinity of Rancho Cordova appear to have recovered less than other wells in the basin since 1995 (generally less than 10 feet). From 1995 to 2003 most groundwater levels recovered to levels that were generally higher than levels prior to the 1987 through 1992 drought. Much of this recovery can be attributed to the increased use of surface water in the Central Basin, and the fallowing of previously irrigated agricultural lands transitioning into new urban development areas. In the central portion of the Central Basin, where the Project site is located, groundwater level trends observed in California Department of Water Resources monitoring wells generally vary between 40 feet above to 40 feet below mean sea level over the period of the 1950s through the 2000s.

[1] Revised Draft Environmental Impact Report Sunrise Douglas Community Plan/SunRidge Specific Plan Long-Term Water Supply Plan. January 2011. Page 3-41.

Recharge of the aquifer system occurs along active river and stream channels where extensive sand and gravel deposits exist, particularly along the American, Cosumnes, and Sacramento rivers. Additional recharge occurs along the eastern boundary of Sacramento County at the transition point from the consolidated rocks of the Sierra Nevada to the alluvial-deposited basin sediments. This recharge is classified as subsurface recharge along with underground flow into and out of the basin with adjacent groundwater basins. Other sources of recharge include deep percolation from applied surface water and precipitation.

The estimated long term annual sustainable yield of groundwater from the Central Basin is 273,000 acre-feet per year (AFY). Currently, groundwater extractions are estimated to be 250,000 AFY (excluding remediation).

The determination of the sustainable yield of the Central Basin (273,000 AFY) was negotiated by the Water Forum Groundwater Negotiating Team (GWNT) and involved a complex process that developed the long-term average annual pumping limit of the basin. The long-term average annual pumping limit is described as the hydro-geologic process under which groundwater can be pumped and not exceed average natural recharge over a long-term period of time. Under sustainable conditions, natural recharge is said to be able to make up for variations in the amount of pumping that occurs over the long-term, given wet and dry periods in the hydrologic record.

As a signatory to the Water Form Agreement (WFA), SCWA is committed to adhering to the long-term average sustainable yield of the Central Basin (i.e., 273,000 afy) recommended in the WFA. Geographically, the South American Sub-basin (5-21.65) is similar to the Central Basin boundaries identified in the WFA. While no specific annual groundwater pumping has been defined for SCWA in the Central Basin, SCWA's groundwater pumping from 2011 through 2015 has ranged from a low of 24,652 AFY in 2015 to a high of 34,626 AFY in 2011. In 2018, SCWA produced 21,716 AFY of groundwater for a new low. Since the historic drought, SCWA has been able to take advantage of the Vineyard Surface Water Treatment Plant and the Freeport Regional Water Authority intake facility to produce more surface water for delivery to its customers in accordance with the Water Forum Agreement.

Groundwater Quality

The thickness of the aquifer saturated with freshwater (water with less than 1,000 milligrams per liter dissolved-solids concentration) in the aquifer system varies greatly and depends, for the most part, on the depth to and permeability of the rocks that underlie continental deposits. In the Project vicinity, the base of freshwater generally coincides with the base of continental deposits. The several isolated lenses of saline water that are within the freshwater zone may be evaporation residues or estuarine water that was trapped by subsequent sedimentation. The depth to the base of freshwater is as much as 2,500 feet in some portions of the Sacramento Valley.

Freshwater is available throughout the Central Valley. The concentration of dissolved solids in the groundwater reflects the general character of water in the streams that recharge the aquifer system. Dissolved-solids concentrations in the streams, in turn, are directly related to the type of rocks that form the geologic conditions of the area. Thus, groundwater in the Sacramento Valley has generally lower dissolved-solids concentrations than other sub-regions in the Central Valley. In

general, dissolved-solids concentrations increase as the depth increases in the aquifer system. Therefore, the deeper wells are likely to produce water with larger dissolved solids concentrations than the shallower wells in the aquifer system.

The SCWA 2015 Urban Water Management Plan indicates that the groundwater quality in the South American Sub-basin (5-21.65) is generally good, although iron and manganese is common and there are some occurrences of arsenic and nitrate. Most of SCWA's Zone 40 wells have iron and manganese treatment facilities.

Surface Water

The surface water supplies associated with SCWA's conjunctive use program fall into four categories:

1) Water supplies available through multiple CVP contracts.
2) Water supplies available through State Water Resources Control Board (SWRCB) Permit 21209.
3) Water available through the City of Sacramento for use within the American River Place of Use (POU). It is noted that this supply is not currently available, but is anticipated in the future as part of SCWA's conjunctive use program.
4) Surface water transfers identified in the WSMP.

Water Distribution System

The SCWA water system consists of water treatment plants, pipelines, storage tanks, and wells. The Project would connect to SCWA existing water supply infrastructure located at the intersection of Rancho Cordova Parkway and Chrysanthy Boulevard. New water distribution pipelines and valves would be provided within the Project site, primarily within the roadway rights-of-way, to serve the proposed development.

Water Use

Constraints on SCWA's surface water supplies includes the significant variation of supplies that are available depending on the climate year type. Even though the surface water supplies are not available at a consistent level of use, SCWA has available groundwater supplies to be able to replace the reduction in surface water supplies in dry years. SCWA refers to this potential to use groundwater in addition to its surface water supplies as its conjunctive use program. While groundwater is more consistently available over different climate year types, it has been constrained by groundwater contamination plumes, some naturally occurring contaminants, and the long term need to not exceed the safe yield. Groundwater is considered to be the last priority in meeting water demands, after surface water entitlements and surface water treatment plant capacity area used. The capacity of supply and conveyance facilities is also a constraint on both surface water and groundwater supplies. SCWA has plans to construct additional water supply facilities. In general, water quality does not have a significant impact on SCWA's current and projected water supplies. The SWTP and groundwater treatment plants provide treatment to meet drinking water standards.

The water supply allocation from the CVP supply in 2015 was a historical low. The CVP allocation for the three-year 2013 to 2015 period was also the lowest historical three-year sequence. The CVP allocation for 2013 to 2015, was 100 percent, 75 percent, and 25 percent of the prior three-year average constrained use for each of the years, respectively. The CVP supply represents SCWA's most significant surface water supply source. Even with the low CVP allocation in 2015, the overall water supply was still 90 percent of normal because of the availability of other water supply sources. It is assumed that wholesale water supplies would be fully available as required to meet wholesale water demands.

It is noted that the SCWA's 2015 UWMP accounts for the demand from the proposed Project.

3.8.2 REGULATORY SETTING

There are a number of regulatory agencies whose responsibility includes the oversight of the water resources of the state and nation including the Federal Emergency Management Agency, the US Environmental Protection Agency, the State Water Resources Control Board, and the Regional Water Quality Control Board. The following is an overview of the federal, state and local regulations that may be applicable to projects within the City of Rancho Cordova.

FEDERAL AND STATE

Clean Water Act (CWA)

The Clean Water Act (CWA), initially passed in 1972, regulates the discharge of pollutants into watersheds throughout the nation. The State Water Resources Control Board (SWRCB) is responsible for implementing the Clean Water Act and does so through issuing NPDES permits to cities and counties through regional water quality control boards. Federal regulations allow two permitting options for stormwater discharges (individual permits and general permits). The Central Valley Regional Water Quality Control Board has developed a single region-wide General Permit for Discharges from Municipal Separate Stormwater Systems (MS4s) (Order No. R5-2016-0040) issued pursuant to CWA Section 402 in order to promote greater watershed/drainage shed coordination, water quality measure protections, and program implementation efficiencies throughout the Central Valley Region. The City of Rancho Cordova is regulated under the region-wide general permit through General Order No. R5-2016-0040-008 and NPDES Permit No. CAS0085324.

303(D) IMPAIRED WATER BODIES

Section 303(d) of the federal Clean Water Act requires States to identify waters that do not meet water quality standards or objectives and thus, are considered "impaired." Once listed, Section 303(d) mandates prioritization and development of a Total Maximum Daily Load (TMDL). The TMDL is a tool that establishes the allowable loadings or other quantifiable parameters for a waterbody and thereby the basis for the States to establish water quality-based controls. The purpose of TMDLs is to ensure that beneficial uses are restored and that water quality objectives are achieved.

As noted previously, the following waterways in or near the City of Rancho Cordova are identified as impaired waterways by the State Water Resources Control Board under Section 303(d) of the Clean Water Act: American River (mercury and unknown toxicity); Elder Creek (chlorpyrifos and diazinon); Morrison Creek (diazinon); and Sacramento River (diazinon, mercury and unknown toxicity).

General Order No. R5-2016-0040 includes Attachment G, Specific Provisions for Total Maximum Daily Loads Applicable to Order R5-2016-040, which includes specific permit requirements that have been devised to meet the applicable Water Quality Based Effluent Limitation and attain compliance with the applicable waste load allocation. For each TMDL, Attachment G identifies where the TMDL is applicable, the Permittees that are responsible for implementing specific provisions, any interim compliance requirements, final TMDL compliance requirements, and specific monitoring provisions and assessment requirements.

California Water Code – Porter-Cologne Act

The Federal Clean Water Act places the primary responsibility for the control of surface water pollution and for planning the development and use of water resources with the states, although this does establish certain guidelines for the States to follow in developing their programs and allows the Environmental Protection Agency to withdraw control from states with inadequate implementation mechanisms.

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Division 7 of the California Water Code) (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resources Control Board (SWRCB) and each of the RWQCBs power to protect water quality, and is the primary vehicle for implementation of California's responsibilities under the Federal Clean Water Act. The Porter-Cologne Act grants the SWRCB and the RWQCBs authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil or petroleum product.

Each RWQCB must formulate and adopt a water quality control plan (Basin Plan) for its region. The regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that a RWQCB may include within its regional plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

National Pollutant Discharge Elimination System (NPDES)

NPDES permits are required for discharges of pollutants to navigable waters of the United States, which includes any discharge to surface waters, including lakes, rivers, streams, bays, the ocean, dry stream beds, wetlands, and storm sewers that are tributary to any surface water body. NPDES

permits are issued under the Federal Clean Water Act, Title IV, Permits and Licenses, Section 402 (33 USC 466 et seq.)

The RWQCB issues these permits in lieu of direct issuance by the Environmental Protection Agency, subject to review and approval by the Environmental Protection Agency Regional Administrator. The terms of these NPDES permits implement pertinent provisions of the Federal Clean Water Act and the Act's implementing regulations, including pre-treatment, sludge management, effluent limitations for specific industries, and anti- degradation. In general, the discharge of pollutants is to be eliminated or reduced as much as practicable so as to achieve the Clean Water Act's goal of "fishable and swimmable" navigable (surface) waters. Technically, all NPDES permits issued by the RWQCB are also Waste Discharge Requirements issued under the authority of the California Water Code.

These NPDES permits regulate discharges from publicly owned treatment works, industrial discharges, stormwater runoff, dewatering operations, and groundwater cleanup discharges. NPDES permits are issued for periods of five years or less, and are therefore to be updated regularly. The rapid and dramatic population and urban growth in the Central Valley Region has caused a significant increase in NPDES permit applications for new waste discharges. To expedite the permit issuance process, the RWQCB has adopted several general NPDES permits, each of which regulates numerous discharges of similar types of wastes. Stormwater discharges from industrial and construction activities in the Central Valley Region can be covered under these general permits, which are administered jointly by the SWRCB and RWQCB.

Water Quality Control Plan for the Central Valley Region

The Water Quality Control Plan for the Central Valley Region (Basin Plan) includes a summary of beneficial water uses, water quality objectives needed to protect the identified beneficial uses, and implementation measures. The Basin Plan establishes water quality standards for all the ground and surface waters of the region. The term "water quality standards," as used in the Federal Clean Water Act, includes both the beneficial uses of specific water bodies and the levels of quality that must be met and maintained to protect those uses. The Basin Plan includes an implementation plan describing the actions by the RWQCB and others that are necessary to achieve and maintain the water quality standards.

The RWQCB regulates waste discharges to minimize and control their effects on the quality of the region's ground and surface water. Permits are issued under a number of programs and authorities. The terms and conditions of these discharge permits are enforced through a variety of technical, administrative, and legal means. Water quality problems in the region are listed in the Basin Plan, along with the causes, where known. For water bodies with quality below the levels necessary to allow all the beneficial uses of the water to be met, plans for improving water quality are included. The Basin Plan reflects, incorporates, and implements applicable portions of a number of national and statewide water quality plans and policies, including the California Water Code and the Clean Water Act.

LOCAL

Central Sacramento County Groundwater Management Plan (CSCGMP)

The Central Sacramento County Groundwater Management Plan (CSCGMP) was completed in 2006 by Central Sacramento County Groundwater Basin stakeholders, in coordination with the SCWA, to establish a framework for maintaining a sustainable groundwater resource for the various users overlying the basin in Sacramento County between the American and Cosumnes Rivers. The CSCGMP assists overlying water users in maintaining a safe, sustainable, and high quality groundwater resource within a given groundwater basin. The five basin management objectives that have been proposed for the Central Basin are listed below. Each objective focuses on managing and monitoring the basin to benefit all groundwater users in the basin and are intended to be specific enough to result in numerical criteria for the basin, but also able to be modified or adapted to new information on groundwater basin behavior over time:

- Maintain the long-term average groundwater extraction rate at or below 273,000 AFY.
- Maintain specific groundwater elevations within all areas of the basin consistent with the Water Forum.
- Protect against any potential inelastic land surface subsidence by limiting subsidence to no more than 0.007 feet per 1 foot of drawdown in the groundwater basin.
- Protect against any adverse impacts to surface water flows in the American, Cosumnes, and Sacramento rivers.
- Water quality objectives for several constituents of concern:
    - Maintain total dissolved solids (TDS) concentration of less than 1,000 milligrams per liter (mg/L);
    - Maintain nitrate (NO_3) concentration of less than 45 mg/L; and
    - Monitor volatile organic compounds (VOC) migration and consider any measurable trace of VOC in private or public wells as significant.

Sacramento Stormwater Quality Partnership (SSQP)

The permittees of the NPDES Municipal Stormwater Permit, i.e. Sacramento County and the cities of Rancho Cordova, Sacramento, Citrus Heights, Elk Grove, Galt, and Folsom, have joined together to form the SSQP. The SSQP is a collaborative partnership that protects and improves water quality in local waterways for the benefit of the community and the environment. The purpose of the SSQP is to:

- Educate and inform the public about urban runoff pollution;
- Encourage public participation in community and clean-up events;
- Work with industries and businesses to encourage pollution prevention;
- Require construction activities to reduce erosion and pollution; and
- Require developing projects to include pollution controls that will continue to operate after construction is complete.

The permittees cooperatively participate in decision-making and goal-setting for the monitoring program, are involved in consultant selection and review, and comment on compliance reports and other work products. Annual Reports are produced that describe the activities conducted to comply with the NPDES permit.

The stormwater pollution prevention efforts needed to satisfy the NPDES permit (Order R5-Order R5-2016-0040) requirements are implemented by the SSQP through its Stormwater Quality Improvement Plan (SQIP), either jointly or by the individual permittees. The major categories of SQIP activities, conducted jointly by the SSQP, are:

- program management – including legal authority and funding, inter- and intra-agency coordination, effectiveness assessment;
- target pollutant program (including implementation of plans to target mercury and pesticides);
- monitoring program to satisfy monitoring requirements specified in the monitoring and reporting program (MRP) portion of the NPDES permit;
- planning and new development standards such as Hydromodification and LID standards;
- special studies; and
- regional public outreach.

Stormwater Quality Design Manual for Sacramento Region

The Stormwater Quality Design Manual for the Sacramento Region provides locally-adapted information for design and selection of multiple categories of stormwater quality control measures: source control, hydromodification control, treatment control, and low impact development measures. The 2018 edition of the Design Manual is based on the *2007 Stormwater Quality Design Manual for the Sacramento and South Placer Regions*, but has been revised to incorporate hydromodification management and low impact development design standards.

This Stormwater Quality Design Manual for the Sacramento Region (manual) outlines planning tools and requirements to reduce urban runoff pollution to the maximum extent practicable (MEP) from new development and redevelopment projects. The manual is primarily intended for people involved in the design or review/approval of development projects. Chapter 3 of the Manual outlines steps to select and design stormwater quality features in order to effectively incorporate stormwater management into site design and satisfy the requirements of the permitting agencies in Sacramento County

City of Rancho Cordova Municipal Code

Chapter 16.44 of the City's Municipal Code outlines the Land and Grading Erosion Control Ordinance. The purpose of this chapter is to minimize damage to surrounding properties and public rights-of-way, the degradation of the water quality of watercourses, and the disruption of natural or city-authorized drainage flows caused by the activities of clearing and grubbing, grading, filling and excavating of land, and sediment and pollutant runoff from other construction-related activities, and to comply with the provisions of the City's NPDES permit No. CAS0085324, issued by the RWQCB.

These goals will be achieved by establishing administrative procedures, minimum standards of review, and implementation and enforcement procedures for controlling erosion, sedimentation and other pollutant runoff, including construction debris and hazardous substances used on construction sites, and the disruption of existing drainage and related environmental damage caused by the aforementioned activities.

Rancho Cordova General Plan

The Rancho Cordova General Plan contains the following goals and policies that are relevant to hydrology and water quality:

NATURAL RESOURCES ELEMENT

Goal NR.3: Preserve and maintain creek corridors and wetland preserve with useable buffer zones throughout the new development areas as feasible.

Policy NR.3.1: Coordinate with property owners and local interest groups, such as the Sacramento Urban Creeks Council, to restore, enhance, and preserve creeks in Rancho Cordova.

Policy NR.3.2: In general, the City will encourage the preservation of existing location, topography, and meandering alignment of natural creeks. The modification, re-creation and realignment of creek corridors shall recreate the character of the natural creek corridor to the extent feasible, appropriate and consistent with other City policies. Channelization and the use of concrete within creek corridors shall be discouraged, but is not prohibited.

Policy NR.3.3: Encourage the creation of secondary flood control channels where the existing channel supports extensive riparian vegetation.

Policy NR.3.4: Encourage projects that contain wetland preserves or creeks, or are located adjacent to wetland preserves or creeks, to be designed for visibility and, as appropriate, access.

Goal NR.5: Protect the quantity and quality of the City's water resources.

Policy NR.5.1: Promote water conservation within existing and future urban uses.

Policy NR.5.2: Encourage the use of treated wastewater to irrigate parks, golf courses, and landscaping.

Policy NR.5.3: Protect surface and ground water from major sources of pollution, including hazardous materials contamination and urban runoff.

Policy NR.5.4: Prevent contamination of the groundwater table and surface water, and remedy existing contamination to the extent practicable.

Policy NR.5.5: Minimize erosion to stream channels resulting from new development in urban areas consistent with State law.

Policy NR.5.6: Incorporate Storm Water, Urban Runoff, and Wetland Mosquito Management Guidelines and Best Management Practices into the design of water retention structures, drainage ditches, swales, and the construction of mitigated wetlands in order to reduce the potential for mosquito-borne disease transmission.

Policy NR.5.7: Continue to cooperate and participate with the County, other cities, and the Regional Water Quality Control Board regarding compliance with the joint National Pollutant Discharge Elimination System Permit (NPDES No. CAS0085324) or any subsequent permit and support water quality improvement projects in order to maintain compliance with regional, state and federal water quality requirements.

Policy NR.5.8: The City shall require groundwater impact evaluations be conducted for the Grant Line West, Westborough, Aerojet, Glenborough, Mather and Jackson Planning Areas to determine whether urbanization of these areas would adversely impact groundwater remediation activities associated with Mather and Aerojet prior to the approval of large-scale development. Should an adverse impact be determined, a mitigation program shall be developed in consultation with applicable local, state, and federal agencies to ensure remediation activities are not impacted. This may include the provision of land areas for groundwater remediation facilities, installation/extension of necessary infrastructure, or other appropriate measures.

SAFETY ELEMENT

Goal S.2: Reduce the possibility of a flooding or drainage issue causing loss of life or damage to property.

Policy S.2.1: Support and encourage efforts to limit and reduce the potential for community flooding from the Cosumnes or American Rivers.

Policy S.2.2: Manage the risk of flooding by discouraging new development located in an area that is likely to flood.

Policy S.2.3: Discourage the creation of new parcels when the presence of easements, floodplain, marsh, or riparian habitat, and/or other features would leave insufficient land to build and operate structures. This policy shall not apply to open space lots specifically created for dedication to the City or another appropriate party for habitat protection, flood control, drainage, or wetland maintenance.

Policy S.2.4: Ensure that adequate drainage exists for both existing and new development.

INFRASTRUCTURE, SERVICES, AND FINANCE ELEMENT

Goal ISF.2: Ensure the development of quality infrastructure to meet community needs at the time they are needed.

Policy ISF.2.1: Ensure the development of public infrastructure that meets the long-term needs of residents and ensure infrastructure is available at the time such facilities are needed.

3.8.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project will have a significant impact on the environment associated with hydrology and water quality if it will:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
    - Result in substantial erosion or siltation on- or off-site;
    - Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;
    - Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
    - Impede or redirect flood flows;
- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation; and/or
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

As described in the Initial Study (see Appendix A), impacts associated with flooding, dam inundation, and inundation by seiche, tsunami, or mudflow would be ***less than significant***. These issues will not be addressed further.

IMPACTS AND MITIGATION MEASURES

Impact 3.8-1: The Project may violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality during construction (Less than Significant with Mitigation)

Grading, excavation, removal of vegetative cover, and loading activities associated with construction activities could temporarily increase runoff, erosion, and sedimentation. Construction activities also could result in soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at construction sites and staging areas. Implementation of the Project could result in water quality impacts associated with erosion or

pollution, including the potential to violate water quality standards or waste discharge requirements during construction and, as such, result in a potentially significant impact.

The proposed Project will be required to comply with the City's Land and Grading Erosion Control Ordinance, outlined in Chapter 16.44 of the City's Municipal Code. As required by the Ordinance, projects disturbing 350 cubic yards or more of soil or one or more acres of land shall prepare an erosion and sediment control plan specifying BMPs for erosion and sediment control. This erosion and sediment control plan shall be checked in the field by the City inspector during construction.

Petroleum, when improperly managed and stored, can present health hazards and threaten the environment, particularly navigable waters and adjoining shorelines. To prevent harm to the public and the environment, the federal Oil Pollution Prevention regulation, promulgated under the authority of §311 of the Clean Water Act, sets forth requirements for prevention of, preparedness for, and response to oil discharges at specific non-transportation-related facilities. To contain potential discharges of oil, the regulation requires these facilities to develop and implement Spill Prevention Countermeasure and Control (SPCC) Plans and establishes procedures, methods, and equipment requirements.

As required by the Clean Water Act, each phase of construction will require an approved SWPPP that includes best management practices to mitigate impacts from grading, construction activities, and ensure the preservation of topsoil. The Project proponent or contractor is required to submit the SWPPP with a Notice of Intent (NOI) to the RWQCB to obtain coverage under the State Construction General Permit. The State Water Resources Control Board (SWRCB) is an agency responsible for reviewing the SWPPP with the NOI, prior to issuance coverage under the State Construction General Permit for the discharge of stormwater during construction activities. Mitigation Measure 3.5-1, introduced in Chapter 3.5, Geology and Soils, requires an approved SWPPP that includes best management practices for grading and preservation of topsoil. Mitigation Measure 3.8-1 requires the project to prepare and implement a SPCC to address any releases of hazardous, toxic, or petroleum substances during construction. Implementation of the following mitigation measures would ensure consistency with the regulatory requirements and ensure that the proposed Project would have a ***less than significant*** impact on construction related water quality.

MITIGATION MEASURE(S)

Mitigation Measure 3.5-1*: Prior to any site disturbance, the Project proponent shall submit a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) to the RWQCB in accordance with the NPDES General Construction Permit requirements. The SWPPP shall be designed to control pollutant discharges utilizing Best Management Practices (BMPs) and technology to reduce erosion and sediments. BMPs may consist of a wide variety of measures taken to reduce pollutants in stormwater runoff from the Project site. Measures shall include temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) that will be employed to control erosion from disturbed areas. Final selection of BMPs will be subject to approval by the City of Rancho Cordova and the RWQCB. The SWPPP will be*

kept on site during construction activity and will be made available upon request to representatives of the RWQCB. (Note: This measure is also included in Chapter 3.5.)

Mitigation Measure 3.8-1: *Prior to the commencement of construction or grading activities, the Project proponent shall submit, and obtain approval of, a Spill Prevention Countermeasure and Control Plan (SPCC) to the Sacramento County Environmental Management Department. The SPCC shall specify measures and procedures to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during all construction activities, and shall meet the requirements specified in the Code of Federal Regulations, title 40, part 112.*

Impact 3.8-2: The Project may violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality during post-construction (Less than Significant with Mitigation)

Operation of the Project, including occupancy of the residential uses and activities associated with the residential, commercial, and parks and recreation uses, would occur once construction has finished and the residents, employees, and guests of the proposed uses are operating on-site. The long-term operations of the proposed residential and commercial uses could result in impacts to surface water quality from urban stormwater runoff. For example, the proposed Project would result in new impervious areas associated with streets, driveways, parking lots, buildings, and landscape areas in the residential and commercial portions and trails, parking lots, and activity areas in the parks and recreation components. Normal activities in these developed areas include the use of various automotive and equipment-related petroleum products (i.e. oil, grease, fuel), building products, household hazardous materials, heavy metals, pesticides, herbicides, and fertilizers and waste associated with the various allowed uses in the residential, commercial, and parks and recreation components. Within urban areas, these pollutants are generally called nonpoint source pollutants. The pollutant levels vary based on factors such as time between storm events, volume of storm event, type of land uses, and density of people.

The Master Drainage Study prepared for the Project describes the proposed drainage and water quality features (Appendix J.1). The northwestern portion of the Project would drain to LMCS and the southeast portion of the Project would drain to both LMCS and Kite Creek. The open space areas would also include detention basins that will provide stormwater management, as described in Chapter 2.0. A basin is the complete facility that will provide the stormwater management, including the permanent pool for water quality, storage for hydromodification and peak flow attenuation, and the outflow facilities. Stormwater management would include capture and treatment of summer irrigation flows, hydromodification of storm runoff, and attenuation of very large storms so that post-project flow rates are equal to or less than existing conditions. The Project includes three basins to manage runoff from the northwest portion of the Project and two basins to manage runoff from the southeast portion of the Project.

- West Basin: This basin is located in Lot H, just south of the tributary shed area and just east of Rancho Cordova Parkway. The outfall from this basin will enter LMCS where it turns south and parallels the parkway in a man-made channel.

- East Basin: This detention basin is located in Lot G, adjacent to LMCS near the middle of the development site. Outfall from this basin will be directly to LMCS or conveyed south and discharged into the creek at the proposed Crysanthy Boulevard crossing.

- PG&E Basin: This basin is located in Lot I and serves a shed area that has been minimized to comply with PG&E constraints for drainage facilities under their high-voltage power lines. The basin would be designed to create and maintain as much infiltration as can be reasonably achieved. An outflow will discharge south or west directly into LMCS.

- North South Basin: The basin, located in Lot J, will be a dry-extended basin with an outflow to LMCS upstream of the Crysanthy crossing.

- South-South Basin: All of the developed area south of LMCS will drain to this linear basin that located in Lot P along the southern boundary of Project site. The permanent pool is at the southeast corner and will drain to Kite Creek. Its outfall will be part of a larger outfall that will also serve SunCreek and will become the new headwaters of Kite Creek.

The storm drains discharging into the wet basins are planned to be below the water level of the permanent pool, which eliminates the need for access control at the outfalls. Manholes just upstream of the basin will include a slide gate so that the deep pipe can be isolated and cleaned as necessary.

With the exception of a major road crossing (Crysanthy Boulevard) and four outflows from the proposed detention basins, LMCS would remain as a meandering channel within an open space corridor. The water quality treatment would be achieved utilizing a variety of low-impact development measures outlined in the City's adopted Stormwater Quality Design Manual for the Sacramento and South Placer Regions, July 2018. Those measures include the incorporation of water quality basins.

While the Drainage Study prepared for the Project identifies several components of the approach to addressing potential pollutants, it does not identify the full range of measures that will be implemented by the Project to ensure that water quality requirements are met. Therefore, the Project has the potential to degrade water quality, including impacts associated with erosion, siltation, or pollution. Therefore, this impact is potentially significant.

The Project would be subject to the Stormwater Quality Design Manual for Sacramento and South Placer Regions, as required by Mitigation Measure 3.8-2. The Project would be subject to the required stormwater quality control measures, including source control, low impact development control, treatment control, trash capture, and hydromodification control. Table 3-3 of the Manual summarizes the various stormwater control measures that are required depending on the project type. With regard to stormwater quality, the Project would be designed to conform with current City and other local standard requirements, as discussed above.

Implementation of the following mitigation measure would reduce potential water quality impacts post-construction to a ***less than significant*** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.8-2*: Before approval of the final subdivision map for all Project phases, a detailed Best Management Practice (BMP) and water quality maintenance plan shall be prepared by a qualified engineer retained by the Project applicant that meets the standards of the City's NPDES Permit (No. CAS00853254) and shall document that stormwater runoff from the Project site is treated per the standards in the Stormwater Quality Design Manual for Sacramento and South Placer Regions. Drafts of the plan shall be submitted to the City of Rancho Cordova for review and approval concurrently with development of tentative subdivision maps for all Project phases. The plan shall finalize the water quality improvements and further detail the structural and nonstructural BMPs proposed for the Project. The plan shall include the elements described below.*

- *A quantitative hydrologic and water quality analysis of proposed conditions incorporating the proposed drainage design features.*
- *Pre-development and post-development calculations demonstrating that the proposed water quality BMPs meet or exceed requirements established by the City of Rancho Cordova and including details regarding the size, geometry, and functional timing of storage and release pursuant to the "Stormwater Quality Design Manual for Sacramento and South Placer Regions."*
- *Source control programs to control water quality pollutants on the Project site, which may include but are limited to recycling, street sweeping, storm drain cleaning, household hazardous waste collection, waste minimization, prevention of spills and illegal dumping, and effective management of public trash collection areas.*
- *A pond management component for the proposed basins that shall include management and maintenance requirements for the design features and BMPs, and responsible parties for maintenance and funding.*
- *Low Impact Development (LID) and Hydromodification control measures shall be integrated into the BMP and water quality maintenance plan. These may include, but are not limited to:*
    - *Bioretention planters;*
    - *surface swales;*
    - *replacement of conventional impervious surfaces with pervious surfaces (e.g., porous pavement, green roofs);*
    - *impervious surfaces disconnection; and*
    - *trees planted to intercept stormwater.*

Impact 3.8-3: The Project would not decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin (Less than Significant with Mitigation)

(*Note: The following discussion is associated with potential impacts of the proposed Project on groundwater as it relates to stormwater infiltration and groundwater recharge. Depletion of groundwater supplies as it relates to water usage is addressed in Chapter 3.14, Utilities.*)

The proposed Project would result in new impervious surfaces and could reduce rainwater infiltration and groundwater recharge. Infiltration rates vary depending on the overlying soil types. In general, sandy soils have higher infiltration rates and can contribute to significant amounts of ground water recharge; clay soils tend to have lower percolation potentials; and impervious surfaces such as pavement significantly reduce infiltration capacity and increase surface water runoff.

According to the U.S. Department of Agriculture NRCS Web Soil Survey (NRCS, 2019), the soils on the Project site are classified as Fiddyment fine sandy loam, Hicksville gravelly loam, Red Bluff-Redding complex, Redding loam, and Redding gravelly loam. The permeability of the on-site soils is moderate.

Table 3.8-3 below identifies the soils in the Project site and the soils infiltration rate. The majority of the Project site has soils all have a hydrologic rating of "D", which is indicative of soils having a very low infiltration rate (very high runoff potential) when thoroughly wet. The remaining soils have a hydrologic rating of "C", which is indicative of soils having a low infiltration rate (high runoff potential).

TABLE 3.8-3: SOILS HYDROLOGIC RATING

DESCRIPTION	*SOURCE MATERIAL*	*RATING*
Fiddyment fine sandy loam, 1-8% slopes	Consolidated sediments of mixed rock sources	D
Hicksville gravelly loam, 0-2% slopes	Alluvium derived from mixed rock sources	C/D
Red Bluff-Redding complex, 0-5% slopes	Old mixed alluvium	C
Redding loam, 2-8% slopes	Alluvium derived from mixed sources	C
Redding gravelly loam, 0-8% slopes, MLRA 17	Alluvium derived from mixed sources	D

SOURCE: NCRS 2018.

The infiltration rate of the soils on the Project site is considered low.

The new impervious surfaces, such as pavement, concrete, and structures that would be built on the Project site, could reduce infiltration capacity, compared to the existing conditions. However, the proposed Project is designed to promote infiltration of groundwater in areas with pervious surface. The proposed drainage infrastructure would include detention basins, greenway swales, and water quality swales, which would provide opportunities for on-site groundwater infiltration. Further, the Project includes approximately 45 acres of open space, park areas, and landscape

areas, and a 199.5-acre wetland preserve. These areas would also provide opportunities for groundwater infiltration.

In addition to the low permeability and infiltration rate associated with soils on the Project site, as required by Mitigation Measure 3.8-2, the Project would be required to comply with the City's NPDES Permit, which includes LID. Further, Mitigation Measure 3.8-2 in this section requires submittal of a detailed BMP and water quality maintenance plan, which would include programs to control water quality pollutants and LID measures. These drainage design requirements aim to in promote stormwater infiltration and improve stormwater quality, among other goals. Therefore, implementation of the Project would have a ***less than significant*** impact to groundwater recharge.

Impact 3.8-4: The Project would not alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion, siltation, surface runoff, flooding, or polluted runoff (Less than Significant)

The Project site would alter the existing drainage pattern of the Project site through grading and development of the areas proposed for residential, commercial, recreation, parks, and other uses associated with the Project, as described in Chapter 2. Development of the proposed Project, when complete, would result in new impervious surfaces and thus could result in an incremental reduction in the amount of natural soil surfaces available for the infiltration of rainfall and runoff, thereby generating additional runoff during storm events. Additional runoff could contribute to increased erosion, siltation, and pollution, an increase in flood potential of natural stream channels, or runoff that could exceed the capacity of the City's drainage system.

However, the increased rate of runoff would be attenuated using on-site and off-site facilities (including detention basins) as discussed in the Master Drainage Plan to ensure that the Project would not result in a significant change in drainage patterns or an increase in flooding potential. As discussed under Impact 3.8-3, the Project would include six basins to address stormwater. The basins have been designed and sized to accommodate stormwater and to ensure that post-Project runoff conditions do not exceed pre-Project conditions.

The West Basin, East Basin, and South-South Basin are designed as wet basins with three components. The first component is a permanent pool, which will address water quality requirements, below the lowest outfall. There will be a storage component, which will include a single orifice and single weir outfall facilities, to meet the NPDES Permit hydromodification standards. The top component of each basin is the storage area needed to store and attenuate events up to the 100-year flood. This component includes an orifice and weir designed to release flows at a rate less than pre-project flows.

The PG&E Basin and the North-South Basin are designed as dry basins that will drain within 48 hours. The basin bottoms will be designed to improve and maintain infiltration, including

enhancements to reduce ponding time and reduce the potential for outflow from summer irrigation runoff.

The Master Drainage Plan modeled each basin for 2-, 5-, 10-, and 25-year storm events and a separate analysis was completed to address 100-year flows using a regression equation to estimate 100-year flows. The Master Drainage Plan identifies potential impacts to upstream, adjacent, and downstream properties associated with the post-Project drainage pattern and runoff conditions. The results are summarized below:

Adjacent to LMCS within Project Site: Within the Project site, the Master Drainage Plan identified impacts along LMCS where there will be encroachment from development. Within the Project site, the maximum changes were +15 cfs and -18 cfs, with maximum water elevation changes of +0.03 and -0.48 feet. In addition to the information modeled in the Master Drainage Plan, Watermark Engineering provided supplemental information which identified that the impacts to the LMCS corridor within the Project site, which is in the Remainder Drainage Shed, would be minor, noting that some encroachment along the existing floodplain, such as the Chrysanthy Boulevard crossing, would result in a slight increase in the water surface elevation. The increase within the Project site would be less than 0.1 feet in all cases and would not have a significant impact.

Off-Site Changes: The Project would not result in significant changes to off-site flooding or drainage conditions. The increase in water levels within the Project site would result in insignificant backwater increases (an upstream increase of 0.02 feet at Section 96+00 which is near the upstream property line) and the increase would be less at the Project's property line. At the downstream end, downstream of Rancho Cordova Parkway, the model results indicate a slight decrease in flow (15 cfs) and a slight decrease of the water level (0.06 ft) for post-Project conditions compared to existing conditions. The Project has two discharge locations, one point located south of Lot H where LMCS exits the Project site and another located along the Project boundary where drainage flows to Kite Creek. Watermark Engineering provided data supplemental to the Master Drainage Plan which describes pre-Project and post-Project flows under 2-, 10-, and 100-Year storm events. As shown in Table 3.8-4, the Project would attenuate storm water flows exiting the Project site under all analyzed conditions from the discharge location where the Project storm waters would flow south to Kite Creek. Flows to LMCS exiting the western boundary of the Project site would increase slightly (1.8%) under 2-Year storm event conditions but would be reduced to less than pre-Project conditions under the more intense 10- and 100-Year storm event conditions.

TABLE 3.8-4: PRE-PROJECT AND POST-PROJECT PEAK FLOW CONDITIONS (2-, 10-, AND 100-YEAR STORM EVENTS)

CONDITION	*2-YEAR*	*10-YEAR*	*100-YEAR*
FLOWS SOUTH TO KITE CREEK (CFS)			
Pre-Project	47	82	118
Post-Project	5	18	50
FLOWS WEST TO LOWER MORRISON CREEK SOUTH AT RANCHO CORDOVA PARKWAY (CFS)			
Pre-Project	274	431	680
Post-Project	279	423	665

SOURCE: WATERMARK ENGINEERING, EMAIL CORRESPONDENCE, 2019.

While the Master Drainage Plan prepared for the Project demonstrates that the basins are adequately sized to address potential flooding and drainage concerns and that off-site flows would not be significantly affected by the Project, it does not identify the full range of measures that will be implemented by the Project to address changes in the drainage pattern and associated erosion, siltation, or polluted runoff. Therefore, this impact is potentially significant.

As discussed in Impact 3.8-1, Mitigation Measure 3.5-1 would require an approved SWPPP that includes best management practices for grading, and preservation of topsoil. Further, the Project would be subject to the City's Land and Grading Erosion Control Ordinance, outlined in Chapter 16.44 of the City's Municipal Code, which requires submittal and implementation of an erosion and sediment control plan. The Project would also be subject to the Stormwater Quality Design Manual for Sacramento and South Placer Regions, as required by Mitigation Measure 3.8-2. The Project would be subject to the required stormwater quality control measures, including source control, low impact development control, treatment control, trash capture, and hydromodification control. Compliance with these standards and regulations would ensure that erosion, siltation, and polluted runoff is minimized such that the Project would not result in substantial erosion, siltation, surface runoff, flooding, or polluted runoff and that the impact would be ***less than significant***.

Impact 3.8-5: The Project may conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan (Less than Significant with Mitigation)

The Water Quality Control Plan for the Central Valley Region and the CSCGMP are the two guiding documents for water quality and sustainable groundwater management in the Project area. Consistency with the two plans are discussed below.

WATER QUALITY CONTROL PLAN FOR THE CENTRAL VALLEY REGION

The Water Quality Control Plan for the Central Valley Region (Basin Plan) includes a summary of beneficial water uses, water quality objectives needed to protect the identified beneficial uses, and implementation measures. The Basin Plan establishes water quality standards for all the ground and surface waters of the region. The RWQCB regulates waste discharges to minimize and control their effects on the quality of the region's ground and surface water. Permits are issued

under a number of programs and authorities. The terms and conditions of these discharge permits are enforced through a variety of technical, administrative, and legal means. Water quality problems in the region are listed in the Basin Plan, along with the causes, where known.

As discussed in Impacts 3.8-1 and 3.8-2, impacts related to water quality during construction and operation would be less-than-significant with implementation of the mitigation measures discussed in this section. The Project would include development of on-site drainage and water quality basins to accommodate post-construction peak stormwater flows and provide for water quality treatment. Additionally, the Project would preserve approximately 199.5 acres as a wetland preserve that would be deeded to a third-party conservation entity. The Project includes approximately 14.8 acres of existing aquatic resources, including 1.85 acres of depressional seasonal wetlands, 9.97 acres of vernal pools, 1.15 acres of riverine seasonal wetlands, 1.53 acres of intermittent drainages, and 0.30 acres of drainage basin outfalls. The Project applicant would incorporate protections for the preservation of wetland resources within the preserve, including preserve fencing, long-term funding and management of the preserve in perpetuity, and protection of the preserve from drainage and runoff generated from development areas through the construction of several detention basins throughout the site; these protections would be required to be consistent with the provisions of the South Sacramento Habitat Conservation Plan requirements for preserve areas. Further, Mitigation Measure 3.8-2 would ensure that the proposed drainage and stormwater control measures reduce pollutant concentrations that will eventually flow to the receiving waters and would ensure that the Project does not conflict with implementation of the Basin Plan.

CENTRAL SACRAMENTO COUNTY GROUNDWATER MANAGEMENT PLAN (CSCGMP)

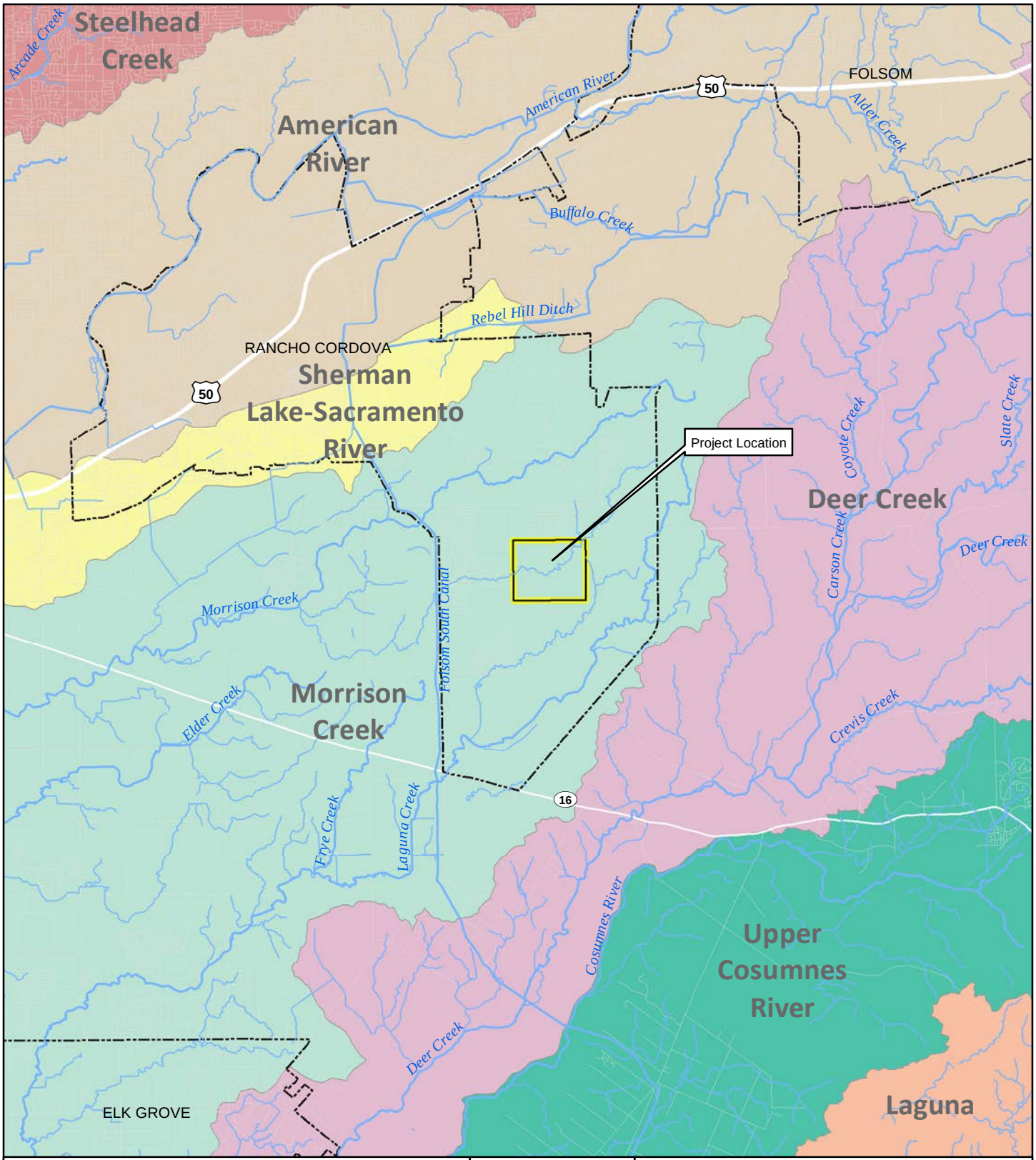
The CSCGMP establishes a framework for maintaining a sustainable groundwater resource for the various users overlying the basin in Sacramento County between the American and Cosumnes Rivers. The CSCGMP assists overlying water users in maintaining a safe, sustainable, and high quality groundwater resource within a given groundwater basin. The five basin management objectives that have been proposed for the Central Basin are listed above in the Regulatory Setting. Each objective focuses on managing and monitoring the basin to benefit all groundwater users in the basin and are intended to be specific enough to result in numerical criteria for the basin, but also able to be modified or adapted to new information on groundwater basin behavior over time.

As discussed in Impact 3.8-3, the Project would not decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin. The Project includes preserve areas, open space areas, and park areas which would allow for infiltration of groundwater on-site. Mitigation Measure 3.8-2 requires the Project to address water quality and changes to the drainage pattern through BMPs and LID measures designed to ensure that the Project is consistent with the water quality objectives and hydromodification standards of NPDES No. CAS0085324. The Project would also be subject to the applicable water quality regulations, including but not limited to the City's Land and Grading Erosion Control Ordinance and the Stormwater Quality Design Manual for Sacramento and South Placer Regions. These guiding documents and requirements would ensure that

stormwater quality treatment measures are implemented and maintained throughout the life of the Project.

CONCLUSION

Overall, implementation of the proposed Project and adherence to the requirements of Mitigation Measures 3.5-1, 3.8-1, and 3.8-2 would have a ***less than significant*** impact related to conflicts with the Basin Plan and CSCGMP.



Watershed (HUC 10)

- American River
- Deer Creek
- Laguna
- Morrison Creek
- Sherman Lake-Sacramento River
- Steelhead Creek
- Upper Cosumnes River

Sources: Sacramento County; USGS National Hydrography Dataset; USGS Watershed Boundary Dataset. Map date: July 16, 2018.

N

0 ½ 1

Miles

THE RANCH
SACRAMENTO COUNTY, CALIFORNIA

Figure 3.8-1: Watersheds

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.

The purpose of this EIR section is to identify the existing land use conditions on Project site and the surrounding areas, analyze the Project's consistency with relevant planning documents and policies, and recommend mitigation measures to avoid or minimize the significance of potential impacts.

Information in this section is based primarily on information provided by the Project applicant, site surveys conducted by De Novo Planning Group in 2018, ground and aerial photographs, and the following reference documents:

- *Rancho Cordova General Plan* (City of Rancho Cordova, Adopted June 26, 2006);
- Rancho Cordova General Plan Draft Environmental Impact Report (City of Rancho Cordova, March 2006);
- *City of Rancho Cordova Housing Element of the General Plan 2013-2021* (City of Rancho Cordova, Adopted December 16, 2013); and
- City of Rancho Cordova Zoning Code.

Comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic from the following: County of Sacramento Municipal Services Agency (July 8, 2018), Sacramento Municipal Utility District (SMUD) (August 6, 2018), and Cordova Recreation & Park District (August 3, 2018). Each of the comments related to this topic are addressed within this section.

3.9.1 ENVIRONMENTAL SETTING

PROJECT SITE

The Project site consists of approximately 530 acres located in the Rancho Cordova city limits. The Project site is bound by existing single-family residential uses and Douglas Road to the north, vacant land and Grant Line Road to the east, vacant land and Kiefer Boulevard to the south, and Rancho Cordova Parkway, single family residential, and vacant land on the west.

The Project site is currently vacant and has been previously used for agricultural uses (cattle grazing). The topography of the site exhibits low relief topography with elevations ranging between 170 and 210 feet above mean sea level (MSL). The slopes throughout the site range from approximately zero to eight percent. The site is characterized by moderate rolling hills and areas of extensive flatlands, with wetlands, vernal pools, and seasonal drainage courses scattered throughout the site. A headwater tributary of Morrison Creek traverses the Project site, entering at the northeast corner and flowing generally to the southwest. A total of 21.53 acres of jurisdictional aquatic resources have been mapped with the Project site, including: 2.92 acres of depressional seasonal wetlands, 15.04 acres of vernal pools, 1.66 acres of riverine seasonal wetlands, 0.06 acres of riverine seasonal wet swales, 1.54 acres of intermittent drainages, and 0.30 acres of drainage basin outfalls.

The property is traversed by a 275-foot-wide utility easement occupied by a 230-kV Pacific Gas and Electric (PG&E) transmission line, one 230-kV SMUD transmission line, and one 69-kV SMUD sub-transmission line. No other public utilities (water, sewer, drainage) are located on site.

The Project's regional location is shown in Figure 2.0-1 and the Project area and site boundary are shown in Figure 2.0-2.

SURROUNDING LAND USES

The Project site is bound by the Sunridge Specific Plan to the north, east, and west, and by the SunCreek Specific Plan to the south and east. Land uses anticipated to the east and south of the Project site by the Sunridge Specific Plan and the SunCreek Specific Plan include low, medium, and high density residential uses, commercial mixed uses (retail, office, and retail professional), and neighborhood parks. Other land uses located nearby include new elementary, junior and senior high schools.

3.9.2 REGULATORY SETTING

STATE

Government Code

California Government Code Section 65300 et seq. establishes the obligation of cities and counties to adopt and implement general plans. The general plan is a comprehensive, long-term, and general document that describes plans for the physical development of a jurisdiction and of any land outside its boundaries that, in the jurisdiction's judgment, bears relation to its planning. The general plan addresses a broad range of topics, including, at a minimum, land use, circulation, housing, conservation, open space, noise, and safety. In addressing these topics, the general plan identifies the goals, objectives, policies, principles, standards, and plan proposals that support the jurisdiction's vision for the area. The general plan is a long-range document that typically addresses the physical character of an area over a 20-year period. Although the general plan serves as a blueprint for future development and identifies the overall vision for the planning area, it remains general enough to allow for flexibility in the approach taken to achieve the plan's goals.

The State Zoning Law (California Government Code Section 65800 et seq.) establishes that zoning ordinances, which are laws that define allowable land uses within a specific district, are required to be consistent with the general plan and any applicable specific plans. When amendments to the general plan are made, corresponding changes in the zoning ordinance may be required within a reasonable time to ensure the land uses designated in the general plan would also be allowable by the zoning ordinance (Government Code, Section 65860, subd. [c]).

California Public Utilities Commission General Order Number 95

General Order Number 95 sets for the rules for overhead electric line construction in California. The purpose of the rules is to formulate, for the State of California, requirements for overhead line

design, construction, and maintenance, the application of which will ensure adequate service and secure safety to persons engaged in the construction, maintenance, operation or use of overhead lines and to the public in general. These rules apply to all overhead electrical supply and communication facilities that come within the jurisdiction of this Commission, located outside of buildings, including facilities that belong to non-electric utilities.

Section III summarizes the requirements for all lines, including: design, construction and maintenance; inspection; avoidance of conflicts and crossings; cooperation to avoid conflicts; joint use of poles; abandoned liens; general arrangement of liens; ground and neutrals; foreign attachments; vegetation management; pole clearance from railroad tracks; minimum clearances of wires above railroads, thoroughfares, buildings, etc.; minimum clearance of wires from other wires; and minimum clearances of wires from signs.

LOCAL

SMUD Guide for Transmission Encroachment

SMUD's Guide for Transmission Encroachment (SMUD Transmission Guide), dated January 2013, was developed to streamline SMUD's plan review process, minimize potential negative impacts to SMUD's transmission facilities and easements, and increase public safety around transmission lines. Since conditions and requirements may vary between corridors, the SMUD Transmission Guide may be supplemented with additional requirements for a specific area, as SMUD deems necessary. The SMUD Transmission Guide addresses development, trails and parks, grading, roads, drainage, fences, structures, and vegetation allowed within transmission corridors and includes requirements for access and clearances.

PG&E Electric & Gas Service Requirements 2017-2018

The Pacific Gas and Electric (PG&E) Electric & Gas Service Requirements 2017-2018 (also-known-as the "Greenbook Manual") are designed to help applicants establish gas and electric service. By reading the mandates published in the manual, applicants will understand the steps required to apply for service and the legal and safety requirements driving those steps. PG&E provides the manual to all gas and electric applicants in an effort to ensure that the company can continue to deliver safe, uniform service. The manual is a collection of requirements and policies for establishing electric and gas service to new or remodeled installations. The Greenbook Manual restricts development and landscaping where PG&E transmission lines are located.

Sacramento Area Council of Governments

The Sacramento Area Council of Governments (SACOG) is an association of local governments from six counties and 22 cities within the Sacramento Region. The counties include El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba. SACOG is responsible for the preparation of, and updates to, the Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) for the region and the corresponding Metropolitan Transportation Improvement Program (MTIP). The MTP/SCS

provides a 20-year transportation vision and corresponding list of projects. The MTIP identifies short-term projects (seven-year horizon) in more detail. The MTP/SCS was adopted by the SACOG board in 2016.

METROPOLITAN TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY

The MTP/SCS is a long-range plan that addresses land use, transportation improvements, air quality, and greenhouse gas emissions in the region. The MTP/SCS supports the Sacramento Region Blueprint, which implements smart growth principles, including housing choice, compact development, mixed-use development, natural resource conservation, use of existing assets, quality design and transportation choice. It also provides increased transportation options while reducing congestion, shortening commute times, and improving air quality. The plan is based on projections for growth in population, housing, and jobs. SACOG determines the regional growth projections by evaluating baseline data (existing housing units and employees, jobs/housing ratio, and percent of regional growth share for housing units and employees), historic reference data (based upon five- and ten-year residential building permit averages and historic county-level employment statistics), capacity data (General Plan data for each jurisdiction), and current MTP data about assumptions used in the most recent MTP/SCS.

Rancho Cordova General Plan

The Rancho Cordova General Plan establishes a land use development pattern that would consist of a series of walkable neighborhoods, villages, and districts. The City envisions that development would provide a mix of housing, jobs, commercial activities and services that would be connected through a series of streets and contiguous open space areas. The General Plan is intended to reinvent the City as a regional destination, providing a full range of retail services and entertainment venues (Rancho Cordova 2006).

GENERAL PLAN LAND USE MAP

The Land Use Map portrays the anticipated uses of land in and around Rancho Cordova through land use designations. The General Plan Land Use Map designates the Project site as Planning Area (General Plan Figure LU-5). The Planning Area figure (General Plan Figure LU-6) identifies the Project site as within the SunCreek/Preserve Planning Area. As shown on General Plan Figure LU-28, the Project site is envisioned as a Residential-Mixed Density (R-MD) community served by a Local Town Center (LTC) and Parks & Open Space (P/OS) uses with portions of the site preserved as Natural Resources (NR). The General Plan land uses surrounding the site include: Low Density Residential (LDR), Medium Density Residential (MDR), P/OS, Commercial Mixed Use (CMU), and Public/Quasi-Public (P/QP) to the north; Planning Area (SunCreek/Preserve Planning Area), LDR, MDR, CMU, P/OS, and P/QP to the east, Planning Area (SunCreek/Preserve Planning Area) to the south; and NR, LDR, P/QP, and High Density Residential (HDR) to the west. The General Plan land use designations for the Project site and surrounding lands are described as follows:

Low Density Residential. The LDR category represents the traditional single-family neighborhood with a majority of single-family detached homes. This is the predominant land use category of the City's neighborhoods.

Medium Density Residential. The MDR category is generally characterized by small lot single-family detached, single-family attached (e.g., town homes, condominiums, brownstones), and small apartment complexes. Medium Density development is often found as part of a village development.

High Density Residential. The HDR is the most urban residential category available. The predominant style of development is larger multi-family housing complexes, including apartments and condominiums. Vertical mixed-use projects with residential use are typically developed in the high-density category. Parking for these facilities is usually provided in traditional surface lots located around the complex. At higher densities, parking may be in a parking structure or underground.

Commercial Mixed Use. The CMU category encourages the integration of retail and service commercial uses with office and/or residential uses. In mixed-use projects, commercial use is the predominant use on the ground floor. Parking for mixed-use projects may be combined or separated, depending on the characteristics of the project. This listing may also include hospitals and other public/quasi-public uses

Public/Quasi-Public. The P/QP category covers a variety of public and other land uses, including land owned by the City and other public agencies. Possible uses include civic buildings; schools, colleges, and universities; religious institutions; hospitals; museums; cemeteries; and others. Most buildings in this category are high profile and prominent within the community. In order to meet future community needs, new development projects should include public/quasi-public sites for future, undetermined uses.

Local Town Center. The LTC category provides retail services, restaurant, and entertainment uses within a district as described in the City's building block concept. Typical uses include a combination of general retail, restaurant, office, and residential uses. This category may also include large retail stores, lodging, entertainment, public/quasi-public, and indoor and outdoor recreational facilities. Residential densities are medium to high in nature. Development is pedestrian friendly with gathering places for both daytime and nighttime activities

Residential-Mixed Density. The R-MD designation is intended to include the range of densities associated with typical neighborhood development.

Commercial Mixed Use. The CMU category encourages the integration of retail and service commercial uses with office and/or residential uses. In mixed-use projects, commercial use is the predominant use on the ground floor. Parking for mixed-use projects may be combined or separated, depending on the characteristics of the project. This listing may also include hospitals and other public/quasi-public uses.

Parks and Open Space. Land within the P/OS category is designed to be used for both active and passive recreational activities, such as parks, lakes, golf courses, and trails. Typically, parklands are under the jurisdiction of the Cordova Recreation and Park District; however, they may be commercial recreational facilities that are principally oriented toward outdoor uses. Typically, public open space lands will be administered by the City, but may be held in either public or private ownership. Land within this category may also be used for detention basins, creek ways, and other more passive uses when collocated next to active recreational uses or when open spaces serve two uses, such as a ball field in the summer and a detention basin in the winter.

Natural Resources. Land within the NR category is set aside as natural habitat and typically has no urban development on it. Often, open space trails will be sited adjacent to NR areas.

SunCreek/Preserve Planning Area. The General Plan indicates that the Suncreek Specific Plan was adopted for the southern portion and the Preserve at Sunridge application (now The Ranch) covers the northern portion of the SunCreek/Preserve Planning Area. This Planning Area would contain a mix of low, medium and high density residential units in a series of approximately 12 walkable neighborhoods served by local and community parks, neighborhood and village centers, schools and other public/quasi-public uses. The Planning Area includes a local town center development south of the intersection of Chrysanthy Boulevard and Rancho Cordova Parkway. The adopted and proposed plans also call for two or three commercial mixed-use developments, which are located along the major roadways of the Planning Area and facilitate use of the area's transit system. Actual location and opportunities for additional retail in the Project area will be determined with subsequent land planning. The Planning Area will also contain wetland preserves and creek/drainage corridors and provide connections to the City's open space and trail system, as well as a site for a combined high school and middle school campus. The General Plan also identifies conceptual circulation and transit plans for this area, as well as constraints associated with the aquatic resources present in the Planning Area.

GENERAL PLAN LAND USE POLICIES

General Plan goals and policies applicable to environmental issues associated with land use are summarized below. General Plan policies associated with specific environmental topics (aesthetics, air quality, biological resources, cultural resources, geology/soils, hazards, hydrology/water quality, housing, noise, parks, public services, transportation, utilities, etc.) are discussed in the relevant chapters of this EIR and a summary of the Project's consistency with General Plan policies and actions applicable to this individual development Project is summarized in Appendix G.

Goal LU.1: Achieve a balanced and integrated land use pattern throughout the community.

> **Policy LU.1.1:** Utilize and maintain the Land Use Map to designate the location and extent of each land use designation within the Planning Area.

Policy LU.1.3: Maintain a strong jobs-housing ratio, with a diverse job base and corresponding housing stock, within the Planning Area. Improve the relationship and proximity of jobs to housing and commercial services.

Policy LU.1.4: Promote high quality, efficient, and cohesive land utilization that minimizes negative impacts (e.g., traffic congestion and visual blight) and environmental hazards (e.g. flood, soil instability) on adjacent neighborhoods and infrastructure and preserve existing and future residential neighborhoods from encroachment of incompatible activities and land uses.

Policy LU.1.5: Maintain consistency between the land use categories of this General Plan and the City Zoning Code.

Policy LU.1.6: Ensure adequate provisions for development of civic uses (public/quasi-public uses).

Policy LU.1.7: Promote higher density and intensity land uses that support transit within one-half mile of major transit stations. Development should be pedestrian- and transit-friendly with direct connections to transit. Large, expansive parking fields that separate the retail from the station are prohibited.

Policy LU.1.8: While agricultural uses are anticipated to be phased out within the City limits, the City recognizes the right of these uses to continue as long as their individual owners/farmers desire.

Goal LU.2: Establish growth patterns based on smart growth principles and the City building blocks concept.

Policy LU.2.1: Ensure future land use and growth within the Planning Area adheres to the City's nine smart growth principles, as described in this Element.

Policy LU.2.2: Promote new development and redevelopment in accordance with the building blocks concepts of neighborhoods, villages, and districts.

Policy LU.2.3: Encourage the clustering of similar uses into areas or districts that have common needs and that are compatible with one another, in order to maximize their efficiency and identity for Rancho Cordova. Uses to consider clustering include the following:

- Entertainment area (Performing Arts Center, local theaters, and studios);
- Sports/recreation facilities (e.g. bowling alleys and major sports facilities);
- Hospitals and other care facilities;
- Youth activity centers;
- Amphitheatres; and
- Regional shopping opportunities.

Policy LU.2.4: Use Community Plans, Specific Plans, and development projects to promote pedestrian movement via direct, safe, and pleasant routes that connect destinations inside and outside the plan or project area.

Policy LU.2.5: Phase growth based on infrastructure capacity, infrastructure financing, and the timing of the design, approval/permitting, and construction of transportation facilities and other infrastructure.

Policy LU.2.6: Discourage the over concentration of retail shopping facilities in a single location in order to ensure neighborhood services are distributed and integrated into the City's neighborhoods and that market demand is met without diminish the viability of nearby commercial properties with the same customer base.

Policy LU.2.7: Promote sustainable development that reduces the impact of projects on energy, water, and transportation systems. Encourage sustainable development to occur in ways that complement the built form.

Goal LU.6: Ensure development of the Planning Areas consistent with the City's vision.

Policy LU.6.2: Ensure subsequent detailed land planning for those Planning Areas with Conceptual Land Plans.

City of Rancho Cordova Zoning Code

The Project site is currently zoned Agricultural 80 (AG80) by the Rancho Cordova Zoning Map. The Project is requesting a rezone to The Ranch Special Planning Area (SPA).

SPECIAL PLANNING AREA

A special planning area is a land use zone and implementing document that allows for the development of unique and imaginative projects that are otherwise not possible under the current provisions of the zoning code or to protect unique environmental, historic, architectural, and other features that require special consideration. A special planning area may be adopted to accomplish the following:

A. Protect a unique environmental, historical, architectural, or other significant site feature that cannot be adequately protected by adoption of another land use zone.
B. Allow the development of an exceptional project design that cannot be built under an existing zoning district or due to constraints of existing development standards.

The council may approve or approve with conditions an application for a special planning area after finding all of the following. If the council does not make all of these findings, the special planning area shall not be approved.

A. The proposed special planning area is consistent with the goals, policies, and objectives of the General Plan.

B. The proposed special planning area meets the requirements set forth in Chapter 23.149.
C. The special planning area is needed because the project is not possible under the existing zoning requirements.

SunCreek Specific Plan

The SunCreek Specific Plan land uses adjacent to the Project site include: High Density Residential (HDR), Medium Density Residential (MDR), Village Center (VC), Public/Quasi-Public (P/QP), Wetland, Wetland Buffer/Trail/Open Space, and Detention Basin to the east; and Low Density Residential (LDR), MDR, HDR, VC, Wetland Buffer/Trail/Open Space, and Wetland to the south. The SunCreek Specific Plan land use designations for the surrounding lands are described as follows:

Low Density Residential. The LDR category includes dwelling units in configurations up to six dwelling units per gross acre (exclusive of open space and adjacent collector streets). The density range allows substantial flexibility in selecting dwelling unit types and parcel configurations to suit particular site conditions and housing needs.

Medium Density Residential. The MDR category will provide a mix of housing types and densities ranging from 6.1 to 12 dwelling units per gross acre. MDR includes single-family homes, duplexes and half-plexes, court housing, garden apartments, townhouses and condominiums. The most typical housing type will be small lot single-family detached, single-family attached (e.g., town homes, condominiums, brownstones), and small apartment complexes. The density range allows substantial flexibility in selecting dwelling unit types and parcel configurations to suit particular site conditions and housing needs.

High Density Residential. The HDR development includes apartments and condominiums at densities of 26 to 40 dwelling units per acre. In order to be compliant with current state law regarding Regional Housing Needs Allocation (RHNA) requirements ensuring the availability of adequate high density zoned land, all High Density Residential acres in the SunCreek Specific plan area are designated as RHNA acres. The builder/developer must receive written authorization from the City to build at densities less than 26 units to the acre. With this authorization, High Density development may achieve as low as 18.1 dwelling units per acre where sites are constrained by size, configuration, access, parking standards, open space standards and other factors reflecting the actual market for multi-family housing.

Village Center. The VC category provides retail services, restaurant, entertainment and office employment uses as described in the City's building block concept. The VC areas serve the daily shopping needs of residents and may include small- and medium-size grocery stores, drug stores, restaurants, banks, and other similar uses. Development is pedestrian friendly with gathering places for both daytime and nighttime activities.

Public/Quasi-Public. The P/QP category includes a variety of public and other land uses, including land owned by the City and other public agencies. Possible uses include civic buildings; schools, colleges, and universities; religious institutions; hospitals; museums; cemeteries; and others.

Note that the SunCreek Specific Plan does not contain descriptions for the Wetland Buffer/Trail/Open Space and Wetland land use categories as these areas are permanent open space which do not allow for urban development.

South Sacramento Habitat Conservation Plan

The South Sacramento County Habitat Conservation Plan (SSHCP) is a regional effort that provides development and infrastructure projects with streamlined, predictable federal and state permitting processes while creating a Preserve System to protect habitat, open space, and agricultural lands. The SSHCP allows project proponents within the SSHCP Area to simplify and expedite the state and federal Endangered Species Act (ESAs) permitting process. In addition to streamlining the ESAs permitting processes, a separate but parallel multi-tiered permitting program has been developed to streamline Clean Water Act Section 404 and 401 permitting process and a Master Streambed Alteration Agreement will be prepared to address Section 1602 of the California Fish and Game Code. The SSHCP allows Sacramento County (the County), the City of Rancho Cordova, City of Galt, Sacramento County Water Agency, and the Southeast Connector Joint Powers Authority (collectively referred to as the Plan Permittees) to receive an Incidental Take Permit (ITP) for activities and projects they conduct. In addition, the three local Land Use Authority Permittees (the County, Galt, and Rancho Cordova) have the ability to extend incidental take coverage provided by the SSHCP ITPs to activities and projects implemented by Third-Party Project Proponents that are under the jurisdiction of that Land Use Authority Permittee. This will allow Third-Party Project Proponents to avoid the extensive negotiation and processing currently required to obtain individual project permits under the CESA from the CDFW and project ESA compliance from the USFWS.

The SSHCP Area (317,655 acres) is located in the southern portion of Sacramento County. The SSHCP Area includes portions of unincorporated Sacramento County, Galt, and the southern half of Rancho Cordova.

The SSHCP Conservation Strategy mitigates to the maximum extent practicable the impacts of Covered Activities, including all direct and indirect impacts on Covered Species and their habitats. The SSHCP Conservation Strategy provides for conservation of 28 Covered Species and 17 land cover types, avoids or minimizes impacts of Covered Activities, mitigates for the impacts of Covered Activities on the Covered Species and their habitats on the basis of species and habitat needs, provides a regional approach to the mitigation of impacts and the conservation of species and their habitats, protects wetlands and waters of the Plan Area, conserves natural communities in the Plan Area, and provides take authorization for the 28 Covered Species, with the exception that direct injury or mortality of white-tailed kite and greater sandhill crane is not covered by the ITP and the SSHCP plans for full avoidance and protection of all slender Orcutt grass and Sacramento Orcutt grass occurrences.

The SSHCP includes Avoidance and Minimization Measures (AMMs) as conditions on Covered Activities. Each condition contains several AMMs that are intended to eliminate or reduce direct or indirect effects to species that could result from implementation of a Covered Activity. In addition,

the SSHCP provides species-specific take and avoidance measures to avoid or minimize effects of Covered Activities on specific SSHCP Covered Species. Species-specific AMMs include species surveys, preconstruction surveys, and construction monitoring.

The Rancho Cordova City Council adopted the SSHCP in October 2018.

3.9.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the Project will have a significant impact on land use and planning if it will:

- Physically divide an established community; and/or
- Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

As discussed in the Initial Study, the Project includes development of residential, commercial, parks, and open space uses, including a natural resource preserve. The site is currently undeveloped and surrounded by existing and planned residential and other urban uses. The Project is consistent with the surrounding uses and would not physically divide an established community. Therefore, impacts associated with division of an established community would be ***less than significant***. This issue will not be addressed further.

IMPACTS AND MITIGATION MEASURES

Impact 3.9-1: Implementation of the Project would not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project adopted to avoid or mitigate an environmental effect (Less than Significant with Mitigation)

RANCHO CORDOVA GENERAL PLAN

The Rancho Cordova General Plan currently designates the Project site as the SunCreek/Preserve Planning Area. As part of the Project, the applicant is requesting a General Plan Amendment to establish specific General Plan land use designations, LDR, MDR, HDR, C, P/OS, and NR in order to implement the General Plan's land use concept for the Project's portion of the SunCreek/Preserve Planning Area.

The LDR category in the General Plan establishes a density of between 2.1 and 6.0 dwelling units per acre. At a density of approximately 3.50 units per acre (112 units on 31.98 acres), the proposed low density portion of the Project complies with the City's existing General Plan LDR levels. The MDR category in the General Plan establishes a density of between 6.1 and 18.0 dwelling units per acre. At a density of approximately 6.34 units per acre (1,360 units on 214.36 acres), the proposed medium density portion of the Project complies with the City's existing General Plan MDR levels. The HDR category in the General Plan establishes a density of between 18.0 and 40.0 dwelling units

per acre. At a density of approximately 30.0 units per acre (253 units on 8.43 acres), the proposed high density portion of the Project complies with the City's existing General Plan HDR designation.

In evaluating the proposed General Plan amendments for potential environmental impacts related to consistency with land use plans, policies, and regulations, several General Plan policies must be examined for consistency.

The Project is consistent with General Plan policies related to land use, including those identified above under the Regulatory Setting. The Project is consistent with Land Use Policy LU.1.3 by providing a town center job base and corresponding housing stock in proximity to commercial services. The proposed development keeps with the building block concepts of neighborhoods, villages, and districts consistent with Goal LU UD.1 and Policy UD.1.1. The Project is also consistent with Economic Development Policy ED.1.8 and Housing Policies H.1.1 and H.1.3 as the Project would provide a mix of residential unit types and sizes. The Project does not propose growth beyond the areas envisioned for urbanization on the Rancho Cordova General Plan Land Use Map and is consistent with the capacity of the site envisioned by the General Plan (a maximum of 9,263 dwelling units and 1,331 employees in the 1,762-acre planning area).

The Project is consistent with Natural Resources goals, policies, and actions that implement Goals NR.1, NR.2, and NR.3 which aim to protect special-status species and habitat in accordance with state and federal law and preserve and maintain creek corridors and wetland preserves with useable buffer zones throughout the new development areas as feasible. The Project would preserve approximately 199.5 acres as a wetland preserve that would be deeded to a third-party conservation entity. The Project includes approximately 14.8 acres of existing aquatic resources, including 1.85 acres of depressional seasonal wetlands, 9.97 acres of vernal pools, 1.15 acres of riverine seasonal wetlands, 1.53 acres of intermittent drainages, and 0.30 acres of drainage basin outfalls. The wetland preserve runs the length of the Project and would provide for connectivity with lands designated to be preserved as Natural Resources as shown on General Plan Figure LU-5. The Project applicant would incorporate protections for the preservation of wetland resources within the preserve, including preserve fencing, long-term funding and management of the preserve in perpetuity, and protection of the preserve from drainage and runoff generated from development areas through the construction of several detention basins throughout the site.

Land Use Policy LU.2.3 states that the clustering of similar uses into areas or districts that have common needs and that are compatible with one another should be encouraged, in order to maximize their efficiency and identity for Rancho Cordova. The Project includes clustered residential and mixed use areas in order to maintain the important aquatic and open space resources on the Project site.

The proposed general plan amendment will ensure the Project's consistency with the City's General Plan requirements. This is considered a ***less than significant*** impact and no mitigation is required.

ZONING CODE

Current zoning for the Project site is AG80. The applicant is requesting a rezone to SPA. The Ranch SPA zoning will establish development standards and design guidelines to ensure quality and consistency in the design and implementation of the Project. The SPA document is regulatory in nature and will serve as zoning for the Project site. Development plans, subdivision maps, and site plans for the Project must be consistent with both the SPA and the City of Rancho Cordova General Plan. With the requested rezone and required SPA consistency, the Project would be consistent with the City's Zoning Code and this impact would be ***less than significant***.

METROPOLITAN TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY

The MTP/SCS provides a long-term regional plan for growth that is intended to address transportation, growth, air quality, and sustainability in the region. As discussed under Impact 3.6-3, the Project is designated with the Developing Community place type and is referred to as the "Ranch at Sunridge" in the MTP/SCS. The Project is consistent with the general uses envisioned for the site in the MTP/SCS. The proposed average net residential density (10 units/acre) meets SACOG's MTP/SCS consistency requirements, which include the requirement that projects located in a Developing Community meet or exceed the average net density described for the specific Development Community, as it exceeds with the average net density of 7 units/acre described for the the Ranch at Sunridge (MTP/SCS Appendix E-3, p. 137). The area proposed for residential development is less than initial plans for the site due to significant preservation of open space and wetland resources, which is consistent with the environmental principles of the SCS. Employment-generating uses include the proposed senior clubhouse, commercial parcel, multi-family parcels, and parks and recreation uses, and are consistent with the commercial and public uses envisioned by the MTP/SCS (MTP/SCS Appendix E-3, p. 137). A SPA Handbook has been prepared for the Project, which acts in a similar capacity to a Specific Plan, and is consistent with the MTP/SCS. The Project provides for a high level of bicycle and pedestrian connectivity throughout the Project site, including non-auto connections to the parks, open space, and trails features of the Project. An open space and wetland preserve area is provided, preserving wetlands and aquatic resources on the site. A range of housing types (including single family market rate and senior units at a range of densities and lot sizes, senior congregate care units, and multifamily units) will serve a broad spectrum of households. As described in Sections 3.2, Air Quality, 3.6, Greenhouse Gases and Energy, and 3.13, Transportation and Circulation, of this Draft EIR, comprehensive features and measures are provided by the Project to reduce GHG emissions, including use of renewable energy for the residential component of the Project, an EV charging network, and use of energy-efficient and water-conserving building and design practices. The Project does not conflict with the MTP/SCS. This is considered a ***less than significant*** impact and no mitigation is required.

ELECTRICAL TRANSMISSION LINE REGULATIONS

The applicable electrical transmission line regulations include the NESC, General Order Number 95, PGE&'s Electric & Gas Service Requirements, and the SMUD Transmission Guide. The property is traversed by a 275-foot-wide utility easement occupied by a 230-kV PG&E transmission line, one 230-kV SMUD transmission line, and one 69-kV SMUD sub-transmission line. The lines run from the

northeastern portion of the site to the southwestern portion of the site. See Figure 2.0-4 in Chapter 2.0 for the site plan which shows the easement. The majority of the proposed urban uses would not be located in the immediate vicinity of these transmission lines because the proposed preserve, open space, or park areas would be located within the utility easement area.

The Project would provide underground electrical infrastructure. SMUD and PG&E would continue to be responsible for the operation and maintenance of the current transmission lines, consistent with the NESC and General Order Number 95. The development of the proposed underground facilities would be completed consistent with PG&E's Electric & Gas Service Requirements and SMUD's Transmission Guide.

The Project includes various open space features that would be located under the existing SMUD and PG&E transmission lines. SMUD considers pedestrian trails, bicycle trails, equestrian trails, and recreational parks and sports fields to be acceptable secondary uses within its transmission easements provided that these improvements are designed and constructed so as not to impact SMUD's ability to enjoy its full rights within its easement. The SMUD Transmission Guide addresses development, trails and parks, grading, roads, parking, drainage, fences, structures, and vegetation allowed within transmission corridors and includes requirements for access and clearances. Once the proposed electrical infrastructure is developed, SMUD would be allowed access to the facilities for operation and maintenance. The PG&E's Electric & Gas Service Requirements does not allow trees to be planted within the transmission line right-of-way, but does allow grass and shrubs, as well as small trees outside of the right-of-way. The Project applicant would be responsible for ensuring that development of the facilities, including providing appropriate fencing, structures, and vegetation, is completed consistent with the SMUD Transmission Guide and the PG&E Electric & Gas Service Requirements. A tree planting plan and/or park plan has not been completed for the Project. Mitigation Measure 3.9-1 requires compliance with the requirements for the SMUD Transmission Guide to ensure that the proposed park and landscaped areas comply with the requirements. With implementation of Mitigation Measure 3.9-1, the Project would be consistent with the applicable electrical transmission line regulations.

PLANS, POLICIES, AND REGULATIONS ADOPTED TO ADDRESS OTHER IMPACTS

The Project's consistency with applicable federal, state, and local plans, policies, and regulations associated with aesthetics, air quality, biological resources, cultural and tribal cultural resources, geology and soils, greenhouse gases and energy, hazards and hazardous materials, hydrology and water quality, noise, public services and recreation, transportation and circulation, and utilities are addressed in the respective sections of this Draft EIR.

CONCLUSION

Overall, the Project would be consistent with the land use plans, policies, and regulations adopted to address environmental impacts, including the Rancho Cordova General Plan, the City's Zoning Code, and the MTP/SCS. However, mitigation would be required to ensure the Project is consistent with the SMUD Transmission Guide and the PG&E Electric and Gas Service Requirements. With implementation of Mitigation Measure 3.9-1, the Project will have a ***less than significant*** impact.

MITIGATION MEASURE(S)

Mitigation Measure 3.9-1*: The proposed open space areas located under the SMUD transmission line that traverses the site shall be designed and maintained in accordance with SMUD's Guide for Transmission Encroachment. According to the Guide, certain improvements, for safety and liability reasons, are typically not allowed within transmission corridors. These include, but not limited to the following:*

- *Buildings or structures;*
- *Covered parking;*
- *Excavation, elevation or grade changes;*
- *Light Standards over 15' tall;*
- *Parallel Utilities;*
- *Playground Equipment;*
- *Stockpiling of materials;*
- *Storage of combustibles;*
- *Swimming pools, spas, gazebos, etc.;*
- *Tall tree species (over 15' at maturity);*
- *Trash enclosures; and*
- *Water Detention and/or Retention Basins.*

The proposed open space areas located under the PG&E transmission line that traverses the site shall be designed and maintained in accordance with the PG&E Electric and Gas Service Requirements.

Future improvement plans that include the transmission lines shall be consistent with the items outlined in Chapter 5, Trails and Parks, of the Guide, as well as other applicable Chapters. This requirement shall be noted on the Project improvement plans, subject to review and approval by the City of Rancho Cordova.

This page left intentionally blank.

This section provides a general description of the existing noise sources in the Project vicinity, a discussion of the regulatory setting, and identifies potential noise impacts associated with the Project. Project impacts are evaluated relative to applicable noise level criteria and to the existing ambient noise environment. Mitigation measures have been identified for significant noise-related impacts.

The Cordova Recreation & Park District submitted a comment the public review period for the Notice of Preparation on August 3, 2018. The comment related to noise is addressed within this section.

3.10.1 ENVIRONMENTAL SETTING

KEY TERMS

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given area consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of noise.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared.
CNEL	Community noise equivalent level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic acoustic signal, expressed in cycles per second or Hertz.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
$L_{(n)}$	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L_{50} is the sound level exceeded 50 percent of the time during the one-hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.
SEL	Sound exposure levels. A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.

3.10 NOISE

FUNDAMENTALS OF ACOUSTICS

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound, and twice as loud as a 60-dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment. CNEL is similar to L_{dn}, but includes

a +5-dB penalty for evening noise. Table 3.10-1 lists several examples of the noise levels associated with common situations.

TABLE 3.10-1: TYPICAL NOISE LEVELS

COMMON OUTDOOR ACTIVITIES	*NOISE LEVEL (DBA)*	*COMMON INDOOR ACTIVITIES*
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

SOURCE: CALTRANS, TECHNICAL NOISE SUPPLEMENT, TRAFFIC NOISE ANALYSIS PROTOCOL. SEPTEMBER 2013.

EFFECTS OF NOISE ON PEOPLE

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a 1 dBA change cannot be perceived;
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference;
- A change in level of at least 5-dBA is required before any noticeable change in human response would be expected; and

- A 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING NOISE AND VIBRATION ENVIRONMENTS

Existing and Surrounding Land Uses

North: The Sunridge Park Village residential area is located directly north of the Project site, south of Douglas Road and east of Sunrise Boulevard. A mix of industrial uses and additional residential communities are located north of Douglas Road.

East: The land directly to the east of the Project site is vacant.

South: The land directly to the south of the Project site is vacant.

West: The Anatolia and Anatolia Village residential areas are located directly to the west of the Project site. Another residential community is also under construction along with Rancho Cordova Parkway, which is being extended from Douglas Road to Chrysanthy Boulevard.

Existing Ambient Noise Levels

To quantify the existing ambient noise environment in the Project vicinity, short-term and continuous (24-hour) noise level measurements were conducted on the Project site on August 28th and 29th, 2018. The noise measurement locations are shown on Figure 3.10-1. The noise level measurement survey results are provided in Table 3.10-2. Appendix A of Appendix H shows the complete results of the noise monitoring survey.

TABLE 3.10-2: SUMMARY OF EXISTING BACKGROUND NOISE MEASUREMENT DATA

SITE	LOCATION	DATE/TIME	L_{DN}	AVERAGE MEASURED HOURLY NOISE LEVELS, dB					
				DAYTIME (7AM-10PM)			NIGHTTIME (10PM-7AM)		
				L_{EQ}	L_{50}	L_{MAX}	L_{EQ}	L_{50}	L_{MAX}
Continuous (24-hour) Noise Level Measurements									
LT-1	31 ft. from centerline of Rancho Cordova Pkwy.	08/28/18 - 08/29/18	52	51	40	72	44	34	63
LT-2	North boundary of Project site, behind 12368 Pawcatuk Way	08/28/18 – 08/29/18	45	44	37	61	38	35	50
Short-Term Noise Level Measurements									
ST-1	140 ft. from centerline of Rancho Cordova Pkwy.	08/28/18 10:58 AM	NA	53	49	64	Construction to west is primary noise source.		

SOURCE: SAXELBY ACOUSTICS, 2019.

The sound level meters were programmed to collect hourly noise level intervals at each site during the survey. The maximum value (L_{max}) represents the highest noise level measured during an interval. The average value (L_{eq}) represents the energy average of all of the noise measured during an interval. The median value (L_{50}) represents the sound level exceeded 50 percent of the time during an interval.

Larson Davis Laboratories (LDL) Model 820, Model 812, and Model 831 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

Existing Traffic Noise Environment at Off-Site Receptors

To predict existing noise levels due to traffic, the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The model is based upon the Calveno reference noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions.

Traffic volumes for existing conditions were obtained from the traffic data prepared for the Project (Kimley-Horn, 2018). Truck percentages and vehicle speeds on the local area roadways were estimated from field observations.

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each Project-area roadway segment. Where traffic noise barriers are predominately along a roadway segment, a -5 dB offset was included in the noise prediction model to account for various noise barrier heights. A -5 dB offset was also applied where outdoor activity areas are shielded by intervening buildings. In some locations, sensitive receptors may be located at distances which vary from the assumed calculation distance and may experience shielding from intervening barriers or sound walls. However, the traffic noise analysis is believed to be representative of the majority of sensitive receptors located closest to the Project-area roadway segments analyzed in this report.

Table 3.10-3 shows the existing traffic noise levels in terms of L_{dn} at closest sensitive receptors along each roadway segment. A complete listing of the FHWA Model input data is contained in Appendix B of Appendix H.

TABLE 3.10-3: EXISTING TRAFFIC NOISE LEVELS

ROADWAY	*SEGMENT*	*EXTERIOR TRAFFIC NOISE LEVEL, DB L_{DN}*
Jackson Rd.	Bradshaw Rd. to Excelsior Rd.	67.4
Jackson Rd.	Excelsior Rd. to Eagles Nest Rd.	67.1
Jackson Rd.	Eagles Nest Rd. to Sunrise Blvd.	66.1
Jackson Rd.	Sunrise Blvd. to Grant Line Rd.	67.1
Excelsior Rd.	Kiefer Blvd. to Jackson Rd.	60.0
Kiefer Blvd.	Grant Line Rd. to Jackson Rd./SR-16	55.1
International Dr.	Zinfandel Dr. to Sunrise Blvd.	65.2
Mather Blvd.	Femoyer St. to Douglas Rd.	58.1
Douglas Rd.	Mather Blvd. to Sunrise Blvd.	66.3
Douglas Rd.	Sunrise Blvd. to Grant Line Rd.	61.0
White Rock Rd.	Zinfandel Dr. to Sunrise Blvd.	65.3
White Rock Rd.	Sunrise Blvd. to Grant Line Rd.	60.9
White Rock Rd.	Grant Line Rd. to Prairie City Rd.	67.3
Mather Field Rd.	Folsom Blvd. to US 50 WB Ramp	65.7
Mather Field Rd.	US 50 WB Ramp to US 50 EB Ramp	68.7
Mather Field Rd.	US 50 to International Dr.	69.5
Zinfandel Dr.	Folsom Blvd. to US 50 WB	57.0
Zinfandel Dr.	US 50 to White Rock Rd.	66.6
Zinfandel Dr.	White Rock Rd. to International Rd.	65.8
Zinfandel Dr.	International Rd. to Douglas Rd.	59.6
Sunrise Blvd.	US 50 WB Ramp to US 50 EB Ramp	64.3
Sunrise Blvd.	US 50 to Folsom Blvd.	67.1
Sunrise Blvd.	Folsom Blvd. to White Rock Rd.	69.4
Sunrise Blvd.	White Rock Rd. to Douglas Rd.	69.3
Sunrise Blvd.	Douglas Rd. to Jackson Rd.	64.6
Sunrise Blvd.	Jackson Rd. to Grant Line Rd.	66.8
Grant Line Rd.	White Rock Rd. to Douglas Rd.	69.8
Grant Line Rd.	Douglas Rd. to Jackson Rd.	64.7
Grant Line Rd.	Jackson Rd. to Sunrise Blvd.	64.3

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM KIMLEY HORN AND SAXELBY ACOUSTICS. 2019.

3.10.2 REGULATORY SETTING

FEDERAL

There are no federal regulations related to noise that apply to the Project.

STATE

California Environmental Quality Act

The California Environmental Quality Act (CEQA) Guidelines, Appendix G, indicate that a significant noise impact may occur if a project exposes persons to noise or vibration levels in excess of local general plans or noise ordinance standards, or cause a substantial permanent or temporary increase in ambient noise levels. CEQA standards are discussed more below under the Thresholds of Significance section.

California State Building Code

The State Building Code, Title 24, Part 2 of the State of California Code of Regulations establishes uniform minimum noise insulation performance standards to protect persons within new buildings which house people, including hotels, motels, dormitories, apartment houses and dwellings other than single-family dwellings. Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB L_{dn} or CNEL in any habitable room.

Title 24 also mandates that for structures containing noise-sensitive uses to be located where the L_{dn} or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment

Rancho Cordova General Plan

The Rancho Cordova General Plan Noise Element includes the following goals, policies, and actions regarding noise that are applicable to the Project:

NOISE ELEMENT - GOALS AND POLICIES

Goal N-1: Ensure that all new development will be free of noise disturbances.

Policy N-1.1: Establish standards and policies consistent with those in Tables N-1 and N-2 to govern maximum sound levels in new development.

Policy N-1.2: Ensure that the indoor and outdoor areas of new projects will be located, constructed, and/or shielded from noise sources in compliance with the City's noise standards to the maximum extent feasible.

Policy N-1.7: To the extent feasible and appropriate, the City shall require the use of temporary construction noise control measures for public and private projects that may include the use of temporary noise barriers, temporary relocation of noise-sensitive land uses or other appropriate measures.

3.10 NOISE

NOISE ELEMENT - NOISE COMPATIBILITY STANDARDS

Table N-1 (Figure 3.10-2) of the General Plan shows the maximum allowable daytime and nighttime noise levels from non-transportation sources. Table N-2 (Figure 3.10-3) gives an overview of maximum interior and exterior traffic noise exposure for land use categories that are applied throughout the City.

FIGURE 3.10-2: GENERAL PLAN TABLE N-1: CITY NOISE STANDARDS – NOISE LEVEL PERFORMANCE STANDARDS FOR NEW PROJECTS AFFECTED BY OR INCLUDING NON-TRANSPORTATION NOISE SOURCES

Stationary Noise Source	Noise Level Descriptor	Daytime Maximum (7 a.m. to 10 p.m.)	Nighttime Maximum (10 p.m. to 7 a.m.)
Typical	Hourly L_{eq}, dB	55	45
Tonal, impulsive, repetitive, or consist primarily of speech or music	Hourly Leq, dB	50	40

The City may impose noise level standards which are more or less restrictive than those specified above based upon determination of existing low or high ambient noise levels.

SOURCE: TABLE N-1 OF THE CITY OF RANCHO CORDOVA GENERAL PLAN NOISE ELEMENT

FIGURE 3.10-3: GENERAL PLAN TABLE N-2: MAXIMUM TRANSPORTATION NOISE EXPOSURE

Land Use	Outdoor Activity Areas[1] Ldn/CNEL, dB	Interior Spaces Ldn/CNEL, dB	Interior Spaces Leq, dB[2]
Residential	60[3]	45	–
Residential subject to noise from railroad tracks, aircraft overflights, or similar noise sources which produce clearly identifiable, discrete noise events (e.g., the passing of a single train)	60[3]	40[5]	–
Transient lodging	60[4]	45	–
Hospitals, nursing homes	60[3]	45	–
Theaters, auditoriums, music halls	–	–	35
Churches, meeting halls	60[3]	–	40
Office buildings	–	–	45
Schools, libraries, museums	–	–	45
Playgrounds, neighborhood parks	70	–	–

1 *Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use. Where it is not practical to mitigate exterior noise levels at patio or balconies of apartment complexes, a common area such as a pool or recreation area may be designated as the outdoor activity area.*
2 *As determined for a typical worst-case hour during periods of use.*
3 *Where it is not possible to reduce noise in outdoor activity areas to 60 dB Ldn/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB Ldn/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.*
4 *In the case of hotel/motel facilities or other transient lodging, outdoor activity areas such as pool areas may not be included in the project design. In these cases, only the interior noise level criterion will apply.*
5 *The intent of this noise standard is to provide increased protection against sleep disturbance for residences located near railroad tracks.*

SOURCE: TABLE N-2 OF THE CITY OF RANCHO CORDOVA GENERAL PLAN NOISE ELEMENT

City of Rancho Cordova Municipal Code Chapter 6.68

Chapter 6.68 of the Rancho Cordova Municipal Code identifies performance standards for noise. The maximum exterior noise level for Residential Districts is set at 55 dBA. This standard is 5.0 dBA lower between 10:00 p.m. and 7:00 a.m. The following table from Section 6.68.070, subsection B (Figure 3.10-4) outlines allowable exterior noise standard exceedances in any one hour.

FIGURE 3.10-4: CITY OF RANCHO CORDOVA MUNICIPAL CODE. SECTION 6.68.070(B)

Cumulative Duration of the Intrusive Sound	Allowance Decibels
1. Cumulative period of 30 minutes per hour	0
2. Cumulative period of 15 minutes per hour	+ 5
3. Cumulative period of 5 minutes per hour	+10
4. Cumulative period of 1 minute per hour	+15
5. Level not to be exceeded for any time per hour	+20

SOURCE: TABLE N-2 OF THE CITY OF RANCHO CORDOVA GENERAL PLAN NOISE ELEMENT

The limits specified in subsection B are reduced by five dBA for noises which are impulsive or consist of speech or music. If the existing ambient noise level exceeds the first four categories in subsection B, then the allowable noise exterior limit shall be increased by five-dBA increments to encompass the ambient noise level.

Furthermore, the interior noise level in any residential dwelling unit located in a mixed-use building or development shall not exceed 45 dBA for a cumulative period of more than five minutes in any hour, 50 dBA for a cumulative period of more than one minute in any hour, or 55 dBA for any period of time. There is a slight reprieve in that the allowable noise limit shall be increased by five-dBA increments to encompass the ambient noise level if the existing ambient noise level exceeds the standard.

Exemptions to the interior and exterior noise standards are outlined in Section 6.68.090 of the City's Municipal Code. A list of the exemptions is provided here:

A. School bands, school athletic and school entertainment events;
B. Outdoor gatherings, public dances, shows and sporting and entertainment events, provided said events are conducted pursuant to a license or permit by the city;
C. Activities conducted on parks, public playgrounds and school grounds, provided such parks, playgrounds and school grounds are owned and operated by a public entity or private school;
D. Any mechanical device, apparatus or equipment related to or connected with emergency activities or emergency work;
E. Noise sources associated with construction, repair, remodeling, demolition, paving or grading of any real property, provided said activities do not take place between the hours

of 8:00 p.m. and 6:00 a.m. on weekdays and Friday commencing at 8:00 p.m. through and including 7:00 a.m. on Saturday; Saturdays commencing at 8:00 p.m. through and including 7:00 a.m. on the next following Sunday and on each Sunday after the hour of 8:00 p.m.; provided, however, when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in process be continued until a specific phase is completed, the contractor or owner shall be allowed to continue work after 8:00 p.m. and to operate machinery and equipment necessary until completion of the specific work in progress can be brought to conclusion under conditions which will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner;

F. Noise sources associated with agricultural operations, provided such operations do not take place between the hours of 8:00 p.m. and 6:00 a.m.;

G. All mechanical devices, apparatus or equipment which are utilized for the protection or salvage of agricultural crops during periods of adverse weather conditions or when the use of mobile noise sources is necessary for pest control;

H. Noise sources associated with maintenance of residential area property, provided said activities take place between the hours of 6:00 a.m. and 8:00 p.m. on any day except Saturday or Sunday, or between the hours of 7:00 a.m. and 8:00 p.m. on Saturday or Sunday;

I. Any activity, to the extent provisions of Chapter 65 of Title 42 of the United States Code and Articles 3 and 3.5 of Chapter 4 of Part 1 of Division 9 of the Public Utilities Code of the state of California preempt local control of noise regulations and land use regulations related to noise control of airports and their surrounding geographical areas, any noise source associated with the construction, development, manufacture, maintenance, testing or operation of any aircraft engine, or of any weapons system or subsystems which are owned, operated or under the jurisdiction of the United States, or any other activity to the extent regulation thereof has been preempted by state or federal law or regulation;

J. Any noise sources associated with the maintenance and operation of aircraft or airports which are owned or operated by the United States. [Ord. 38-2007 § 1 (Exh. 1(E)); Ord. 21-2003 §§ 2, 4; Ord. 20-2003 §§ 2, 4; SCC 254 § 1 (part), 1976].

3.10.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the Project will have a significant impact related to noise if it will result in:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- Generation of excessive groundborne vibration or groundborne noise levels.
- For a Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use

airport, exposure of people residing or working in the area to excessive noise levels resulting from the proposed Project.

Determination of a Significant Increase in Noise Levels

The noise standards applicable to the Project include the relevant portions of the Rancho Cordova General Plan and the City's Municipal Code described in the Regulatory Framework Section above (Section 3.10.2), and the following standards. Generally, a project may have a significant effect on the environment if it will substantially increase the ambient noise levels for adjoining areas or expose people to severe noise levels. In practice, more specific professional standards have been developed. These standards state that a noise impact may be considered significant if it would generate noise that would conflict with local project criteria or ordinances, or substantially increase noise levels at noise sensitive land uses. The potential increase in traffic noise from the project is a factor in determining significance. Research into the human perception of changes in sound level indicates the following:

- A 3-dB change is barely perceptible,
- A 5-dB change is clearly perceptible, and
- A 10-dB change is perceived as being twice or half as loud.

A limitation of using a single noise level increase value to evaluate noise impacts is that it fails to account for pre-Project-noise conditions. Table 3.10-4 is based upon recommendations made by the Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. The recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it has been accepted that they are applicable to all sources of noise described in terms of cumulative noise exposure metrics such as the L_{dn}.

TABLE 3.10-4: SIGNIFICANCE OF CHANGES IN NOISE EXPOSURE

AMBIENT NOISE LEVEL WITHOUT PROJECT, LDN	*INCREASE REQUIRED FOR SIGNIFICANT IMPACT*
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more

SOURCE: FEDERAL INTERAGENCY COMMITTEE ON NOISE (FICON)

Based on the Table 3.10-4 data, an increase in the traffic noise level of 5 dB or more would be significant where the pre-Project noise levels are less than 60 dB L_{dn}, or 3 dB or more where existing noise levels are between 60 to 65 dB Ldn. Extending this concept to higher noise levels, an increase in the traffic noise level of 1.5 dB or more may be significant where the pre-Project traffic noise level exceeds 65 dB L_{dn}. The rationale for the Table 3.10-4 criteria is that, as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause annoyance.

Vibration Standards

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

The City not have specific policies pertaining to vibration levels. However, vibration levels associated with construction activities and railroad operations are addressed as potential noise impacts associated with Project implementation.

Human and structural response to different vibration levels is influenced by several factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 3.10-5 indicates that the threshold for damage to structures ranges from 0.2 to 0.6 peak particle velocity in inches per second (in/sec p.p.v). 0.2 in/sec p.p.v. is considered a safe criterion that would protect against architectural or structural damage. The general threshold at which human annoyance could occur is noted as 0.1 in/sec p.p.v.

TABLE 3.10-5: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS

PEAK PARTICLE VELOCITY		*HUMAN REACTION*	*EFFECT ON BUILDINGS*
MM/SEC.	*IN./SEC.*		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage.

SOURCE: CALTRANS. TRANSPORTATION RELATED EARTHBORN VIBRATIONS. TAV-02-01-R9601 FEBRUARY 20, 2002.

IMPACTS AND MITIGATION MEASURES

Impact 3.10-1: The Project may result in exposure of persons to or generation of substantial temporary or permanent increase in ambient noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies – Project Operation (Less than Significant)

EXTERIOR TRAFFIC NOISE IMPACTS – EXISTING RECEPTORS

To predict noise levels due to Project traffic, the FHWA Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. Traffic volumes for existing conditions were obtained from the traffic data prepared for the Project (Kimley-Horn, 2018). Truck percentages and vehicle speeds on the local area roadways were estimated from field observations.

Implementation of the Project would result in an increase in traffic volumes on the local roadway network, and consequently, an increase in noise levels from traffic sources along affected segments. Tables 3.10-6 and 3.10-7 show the predicted traffic noise level increases on the local roadway network for Existing, Existing plus Project, Cumulative No Project, and Cumulative plus Project conditions. The tables also show the criterion for a significant increase for each roadway segment, which varies depending on the Existing and Cumulative condition noise levels without the Project. Appendix B of Appendix H provides the complete inputs and results of the FHWA traffic noise modeling.

TABLE 3.10-6: EXISTING AND EXISTING PLUS PROJECT TRAFFIC NOISE LEVELS

ROADWAY	*SEGMENT*	*NOISE LEVELS (L_{DN}, dB) AT NEAREST SENSITIVE RECEPTORS*				
		EXISTING	*EXISTING + PROJECT*	*CHANGE*	*CRITERION [1]*	*SIGNIFICANT?*
Jackson Rd.	Bradshaw Rd. to Excelsior Rd.	67.4	67.4	0.0	+1.5 dB	No
Jackson Rd.	Excelsior Rd. to Eagles Nest Rd.	67.1	67.2	0.1	+1.5 dB	No
Jackson Rd.	Eagles Nest Rd. to Sunrise Blvd.	66.1	66.2	0.1	+1.5 dB	No
Jackson Rd.	Sunrise Blvd. to Grant Line Rd.	67.1	67.2	0.1	+1.5 dB	No
Excelsior Rd.	Kiefer Blvd. to Jackson Rd.	60.0	60.0	0.0	+3 dB	No
Kiefer Blvd.	Grant Line Rd. to Jackson Rd./SR-16	55.1	55.1	0.0	+5 dB or > 60 dB	No
International Dr.	Zinfandel Dr. to Sunrise Blvd.	65.2	66.1	0.9	+1.5 dB	No
Mather Blvd.	Femoyer St. to Douglas Rd.	58.1	58.5	0.4	+5 dB or > 60 dB	No
Douglas Rd.	Mather Blvd. to Sunrise Blvd.	66.3	66.5	0.2	+1.5 dB	No
Douglas Rd.	Sunrise Blvd. to Grant Line Rd.	61.0	61.2	0.2	+3 dB	No
White Rock Rd.	Zinfandel Dr. to Sunrise Blvd.	65.3	65.3	0.0	+1.5 dB	No
White Rock Rd.	Sunrise Blvd. to Grant Line Rd.	60.9	61.0	0.1	+3 dB	No
White Rock Rd.	Grant Line Rd. to Prairie City Rd.	67.3	67.4	0.1	+1.5 dB	No

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, dB) AT NEAREST SENSITIVE RECEPTORS				
		EXISTING	EXISTING + PROJECT	CHANGE	CRITERION [1]	SIGNIFICANT?
Mather Field Rd.	Folsom Blvd. to US 50 WB Ramp	65.7	65.7	0.0	+1.5 dB	No
Mather Field Rd.	US 50 WB Ramp to US 50 EB Ramp	68.7	68.7	0.0	+1.5 dB	No
Mather Field Rd.	US 50 to International Dr.	69.5	69.5	0.0	+1.5 dB	No
Zinfandel Dr.	Folsom Blvd. to US 50 WB	57.0	57.1	0.1	+5 dB or > 60 dB	No
Zinfandel Dr.	US 50 to White Rock Rd.	66.6	66.8	0.2	+1.5 dB	No
Zinfandel Dr.	White Rock Rd. to International Rd.	65.8	66.1	0.3	+1.5 dB	No
Zinfandel Dr.	International Rd. to Douglas Rd.	59.6	59.6	0.0	+5 dB or > 60 dB	No
Sunrise Blvd.	US 50 WB Ramp to US 50 EB Ramp	64.3	64.5	0.2	+3 dB	No
Sunrise Blvd.	US 50 to Folsom Blvd.	67.1	67.3	0.2	+1.5 dB	No
Sunrise Blvd.	Folsom Blvd. to White Rock Rd.	69.4	69.8	0.4	+1.5 dB	No
Sunrise Blvd.	White Rock Rd. to Douglas Rd.	69.3	70.2	0.9	+1.5 dB	No
Sunrise Blvd.	Douglas Rd. to Jackson Rd.	64.6	66.1	1.5	+3 dB	No
Sunrise Blvd.	Jackson Rd. to Grant Line Rd.	66.8	67.1	0.3	+1.5 dB	No
Grant Line Rd.	White Rock Rd. to Douglas Rd.	69.8	69.9	0.1	+1.5 dB	No
Grant Line Rd.	Douglas Rd. to Jackson Rd.	64.7	64.7	0.0	+3 dB	No
Grant Line Rd.	Jackson Rd. to Sunrise Blvd.	64.3	64.3	0.0	+3 dB	No

[1] *WHERE EXISTING NOISE LEVELS ARE LESS THAN 60 DB AN INCREASE OF 5 DB WOULD BE A SIGNIFICANT INCREASE. ADDITIONALLY, ANY INCREASE CAUSING NOISE LEVELS TO EXCEED THE CITY'S NORMALLY ACCEPTABLE 60 DB LDN NOISE LEVEL STANDARD AT AN EXISTING OUTDOOR ACTIVITY AREA OF A RESIDENTIAL USE WOULD ALSO BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 60 DB BUT ARE LESS THAN 65 DB, AN INCREASE OF 3 DB OR MORE WOULD BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 65 DB, AN INCREASE OF 1.5 DB OR MORE WOULD BE SIGNIFICANT.*

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM KIMLEY HORN AND SAXELBY ACOUSTICS. 2019.

TABLE 3.10-7: CUMULATIVE AND CUMULATIVE + PROJECT TRAFFIC NOISE LEVELS

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, dB) AT NEAREST SENSITIVE RECEPTORS				
		CUMULATIVE	CUMULATIVE + PROJECT	CHANGE	CRITERION [1]	SIGNIFICANT?
Jackson Rd.	Bradshaw Rd. to Excelsior Rd.	70.0	70.0	0.0	+1.5 dB	No
Jackson Rd.	Excelsior Rd. to Eagles Nest Rd.	70.0	70.0	0.0	+1.5 dB	No
Jackson Rd.	Eagles Nest Rd. to Sunrise Blvd.	68.7	68.7	0.0	+1.5 dB	No
Jackson Rd.	Sunrise Blvd. to Grant Line Rd.	69.1	69.1	0.0	+1.5 dB	No
Excelsior Rd.	Kiefer Blvd. to Jackson Rd.	62.9	62.9	0.0	+3 dB	No
Kiefer Blvd.	Grant Line Rd. to Jackson Rd./SR-16	58.8	59.0	0.2	+5 dB or > 60 dB	No
International Dr.	Zinfandel Dr. to Sunrise Blvd.	68.8	68.8	0.0	+1.5 dB	No
Mather Blvd.	Femoyer St. to Douglas Rd.	63.9	64.2	0.3	+3 dB	No
Douglas Rd.	Mather Blvd. to Sunrise Blvd.	71.1	71.4	0.3	+1.5 dB	No
Douglas Rd.	Sunrise Blvd. to Grant Line Rd.	66.1	66.8	0.7	+1.5 dB	No

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, dB) AT NEAREST SENSITIVE RECEPTORS				
		CUMULATIVE	CUMULATIVE + PROJECT	CHANGE	CRITERION [1]	SIGNIFICANT?
White Rock Rd.	Zinfandel Dr. to Sunrise Blvd.	67.6	67.7	0.1	+1.5 dB	No
White Rock Rd.	Sunrise Blvd. to Grant Line Rd.	67.7	67.7	0.0	+1.5 dB	No
White Rock Rd.	Grant Line Rd. to Prairie City Rd.	71.5	71.7	0.2	+1.5 dB	No
Mather Field Rd.	Folsom Blvd. to US 50 WB Ramp	67.0	67.0	0.0	+1.5 dB	No
Mather Field Rd.	US 50 WB Ramp to US 50 EB Ramp	69.6	69.7	0.1	+1.5 dB	No
Mather Field Rd.	US 50 to International Dr.	70.8	70.8	0.0	+1.5 dB	No
Zinfandel Dr.	Folsom Blvd. to US 50 WB	57.2	57.3	0.1	+5 dB or > 60 dB	No
Zinfandel Dr.	US 50 to White Rock Rd.	68.2	68.2	0.0	+1.5 dB	No
Zinfandel Dr.	White Rock Rd. to International Rd.	67.7	67.8	0.1	+1.5 dB	No
Zinfandel Dr.	International Rd. to Douglas Rd.	61.6	61.8	0.2	+3 dB	No
Sunrise Blvd.	US 50 WB Ramp to US 50 EB Ramp	64.6	64.6	0.0	+3 dB	No
Sunrise Blvd.	US 50 to Folsom Blvd.	67.4	67.5	0.1	+1.5 dB	No
Sunrise Blvd.	Folsom Blvd. to White Rock Rd.	69.4	69.5	0.1	+1.5 dB	No
Sunrise Blvd.	White Rock Rd. to Douglas Rd.	71.3	71.5	0.2	+1.5 dB	No
Sunrise Blvd.	Douglas Rd. to Jackson Rd.	67.6	67.7	0.1	+1.5 dB	No
Sunrise Blvd.	Jackson Rd. to Grant Line Rd.	69.1	69.1	0.0	+1.5 dB	No
Grant Line Rd.	White Rock Rd. to Douglas Rd.	73.5	73.10	0.2	+1.5 dB	No
Grant Line Rd.	Douglas Rd. to Jackson Rd.	70.1	70.3	0.2	+1.5 dB	No
Grant Line Rd.	Jackson Rd. to Sunrise Blvd.	66.7	66.8	0.1	+1.5 dB	No
Kiefer Blvd.	Eagles Nest Rd. to Sunrise Blvd.	58.6	58.6	0.0	+5 dB or > 60 dB	No
Kiefer Blvd.	Sunrise Blvd. to Rancho Cordova Pkwy.	62.8	62.8	0.0	+3 dB	No
Chrysanthy Blvd.	Sunrise Blvd. to Rancho Cordova Pkwy.	56.1	57.1	1.0	+5 dB or > 60 dB	No
Rancho Cordova Pkwy.	Chrysanthy Blvd. to Kiefer Blvd.	60.8	61.1	0.3	+3 dB	No

[1] WHERE EXISTING NOISE LEVELS ARE LESS THAN 60 DB AN INCREASE OF 5 DB WOULD BE A SIGNIFICANT INCREASE. ADDITIONALLY, ANY INCREASE CAUSING NOISE LEVELS TO EXCEED THE CITY'S NORMALLY ACCEPTABLE 60 DB LDN NOISE LEVEL STANDARD AT AN EXISTING OUTDOOR ACTIVITY AREA OF A RESIDENTIAL USE WOULD ALSO BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 60 DB BUT ARE LESS THAN 65 DB, AN INCREASE OF 3 DB OR MORE WOULD BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 65 DB, AN INCREASE OF 1.5 DB OR MORE WOULD BE SIGNIFICANT.

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM KIMLEY HORN AND SAXELBY ACOUSTICS. 2019.

Based upon data in Tables 3.10-6 and 3.10-7, the Project is predicted to result in a maximum traffic noise level increase of 1.5 dBA. As shown in Tables 3.10-6 and 3.10-7, some noise-sensitive receptors located along the Project-area roadways are currently exposed to exterior traffic noise levels exceeding the City of Rancho Cordova 60 dB L_{dn} exterior noise level standard for residential

uses. These receptors would continue to experience elevated exterior noise levels with implementation of the Project. For example, sensitive receptors under Existing conditions located adjacent to Sunrise Boulevard between Douglas Road and Jackson Road experience an exterior noise level of 64.6 dB L_{dn}. Under Existing plus Project conditions, exterior traffic noise levels are predicted to be approximately 66.1 dB L_{dn}. Exterior noise levels in both scenarios exceed the City's exterior noise level standard of 60 dB L_{dn}. However, the Project's contribution of 1.5 dB would not exceed the FICON criterion of 3 dB where existing ambient noise levels without the Project are between 60 and 65 dB L_{dn}. For all segments that exceed the City's exterior noise level standard under Existing plus Project and Cumulative plus Project conditions, the Project would not cause a significant increase in noise levels as shown in Tables 3.10-6 and 3.10-7. Therefore, this would be a ***less than significant*** impact.

EXTERIOR TRAFFIC NOISE IMPACTS – PROPOSED RECEPTORS

The FHWA traffic noise prediction model was used to model traffic noise levels at the proposed residential land uses under Cumulative plus Project conditions based on the traffic volumes provided by Kimley Horn. Table 3.10-8 shows the predicted traffic noise levels at the proposed residential uses adjacent to the major Project-area arterial roadways. Table 3.10-8 also indicates the property line noise barrier heights required to achieve compliance with an exterior noise level standard of 60 dB L_{dn}.

TABLE 3.10-8: CUMULATIVE + PROJECT TRANSPORTATION NOISE LEVELS AT PROPOSED RESIDENTIAL USES

SEGMENT	*APPROXIMATE RESIDENTIAL SETBACK, FEET[1]*	*ADT*	*PREDICTED TRAFFIC NOISE LEVELS, DB L_{DN}[2]*					
			NO WALL	*6' WALL*	*7' WALL*	*8' WALL*	*9' WALL*	*10' WALL*
CHRYSANTHY BOULEVARD								
Project site, Rancho Cordova Pkwy. to Americanos Blvd.	90	14,651	64	58	57	56	55	54
RANCHO CORDOVA PARKWAY								
Project site, north of Chrysanthy Blvd.	100	22,140	66	61	60	59	58	57
Project site, south of Chrysanthy Blvd.	525	8,965	52	46	45	44	44	43

NOTES: ADT = AVERAGE DAILY TRIPS

[1] SETBACK DISTANCES ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS TO THE CENTER OF RESIDENTIAL BACKYARDS.

[2] THE MODELED NOISE BARRIERS ASSUME FLAT SITE CONDITIONS WHERE ROADWAY ELEVATIONS, BASE OF WALL ELEVATIONS, AND BUILDING PAD ELEVATIONS ARE APPROXIMATELY EQUIVALENT. SOUND WALL HEIGHT MAY BE ACHIEVE D THROUGH THE USE A WALL AND EARTHEN BERM TO ACHIEVE THE TOTAL HEIGHT (I.E. 6-FOOT WALL ON 2-FOOT BERM IS EQUIVALENT TO AN 8-FOOT TALL WALL).

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM KIMLEY HORN AND SAXELBY ACOUSTICS. 2019.

The complete inputs and results to the FHWA traffic noise prediction model and barrier calculations are contained in the Noise Study Appendix B (see Appendix H of this EIR). The modeled noise barriers assume flat site conditions where roadway elevations, base of wall elevations, and building pad elevations are approximately equivalent.

Table 3.10-8 shows that residences along Chrysanthy Boulevard will be exposed to noise levels of 64 dB L_{dn} in the backyard areas and residences along Rancho Cordova Parkway north of Chrysanthy Boulevard would be exposed to noise levels of 66 dB L_{dn} in the backyard areas; these noise levels exceed the City's threshold of 60 dB for outdoor activity areas of residential uses. Table 3.10-8 indicate that noise barriers six to seven feet in height would generally be sufficient to achieve compliance with the City's 60 dB L_{dn} exterior noise level standard for the proposed residential uses. The Project has been designed to minimize noise to rear yards through including landscaped setbacks from the roadways and use of six-foot soundwalls along Chrysanthy Boulevard and along the segment of Rancho Cordova Parkway where residential uses are proposed. The soundwalls would reduce noise levels along Rancho Cordova Parkway to acceptable levels of 58 dB Ldn. The soundwalls would reduce noise levels at residences north of Chrysanthy Boulevard to 61 dB Ldn, which is within the City's conditionally acceptable exterior noise standard of 65 dB L_{dn}. The SPA Handbook does provide for use of measures other than soundwalls, such as building orientation and use of noise-attenuating features, provided that a site-specific acoustical analysis is conducted that demonstrates that the alternative methods would ensure that noise levels do not exceed the City's noise standards. This impact is ***less than significant.***

INTERIOR TRAFFIC NOISE IMPACTS

Modern construction typically provides a 25-dB exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise of 70 dB L_{dn}, or less, will typically comply with the City's 45 dB L_{dn} interior noise level standard. Additional noise reduction measures, such as acoustically-rated windows, are generally required for exterior noise levels exceeding 70 dB L_{dn}.

It should be noted that exterior noise levels are typically 2 to 3 dB higher at second floor locations. Additionally, noise barriers do not reduce exterior noise levels at second floor locations. The proposed residential uses are predicted to be exposed to unmitigated first floor exterior transportation noise levels ranging between 52 to 66 dB L_{dn}. Therefore, second floor facades are predicted to be exposed to exterior noise levels of up to 55 to 69 dB L_{dn}.

This analysis assumes that mechanical ventilation will be provided to allow residents to keep doors and windows closed, as desired for acoustical isolation. Based upon a 25-dB exterior-to-interior noise level reduction, interior noise levels are predicted to range between 30 to 44 dB L_{dn}. Accordingly, predicted interior noise levels along the first row of residential uses closest to Chrysanthy Boulevard and Rancho Cordova Parkway would comply with the City's 45 dB L_{dn} interior noise level standard. Therefore, additional interior noise control measures would not be required for these residential uses and impacts to interior noise levels associated with traffic noise would be ***less than significant***.

COMMERCIAL USE NOISE

The Project includes approximately 32,000 square feet of commercial uses in the northwestern portion of the Project site. Substantial sources of noise from commercial mixed uses are generated

mainly by heating, ventilation, and air conditioning (HVAC) equipment and loading and unloading activities. Because residential land uses would be placed in close proximity to commercial mixed-use development, these sensitive receptors could be exposed to higher noise levels. However, typical rooftop-mounted HVAC units which are shielded by building parapets do not generate noise levels exceeding 45 dBA L_{eq} at ground floor receptors. Second floor receptors do not receive the same degree of shielding and may experience higher levels of nose. Limited volumes of small delivery vehicle traffic would occur at small loading/unloading areas in the commercial areas and, thus, could be a periodic source of noise to nearby or adjacent sensitive receptors for short periods. The SPA Handbook addresses the Project's potential to expose sensitive receptors to noise levels that exceed the City's standards through requiring future commercial uses to be designed, to minimize the potential to expose existing or future residences to noise levels in excess of the City's standards, through location and/or of noise-generating uses such as loading docks, equipment storage and repair facilities, and generators**.** Therefore, this impact is ***less than significant.***

PARKS USE NOISE

The Project includes 19.24 acres of public and private park and recreation facilities. Noise-generating activities occurring at the proposed park and recreation facilities would depend on facility type. Daytime noise associated with neighborhood parks typically includes intermittent noise such as adults' and children's voices, opening and closing of vehicle doors in parking lots, and use of landscape maintenance equipment. Typical noise levels from park playgrounds or athletics fields are approximately 55 dBA L_{eq} at a distance of 100 feet.

Recreational facilities at the community park could generate additional noise extending into the evening and nighttime hours during competitive sporting events (e.g., soccer games, football games, softball games, and track and field events). Noise sources commonly associated with these types of events include elevated voices from crowds, exterior public-address systems, and musical instruments. If an amplified speaker system is used during sporting events, additional increases in ambient noise levels could occur. Activities occurring during the more noise-sensitive evening and nighttime hours may result in increased levels of annoyance and sleep disruption for occupants of nearby residential dwellings. The specific site design has not been determined for the future recreation facilities, including Lot D (public park) which could accommodate competitive sporting events and other uses that may involve amplified sound. The SPA Handbook addresses potential noise impacts associated with parks and recreation uses by requiring a site-specific acoustical analysis to be performed to evaluate the potential noise generated by recreation facilities that include potential noise generating uses (e.g., competitive sports fields and other uses anticipated to involve amplified sound or large crowds) and, if potential noise levels would exceed City standards, by requiring a noise reduction plan to ensure that noise-generating uses are sited and designed in a manner that meets the City's noise standards. Therefore, adherence to the requirements of the SPA Handbook would ensure that future parks and recreation uses do not exceed the City's noise standards and would ensure that this impact is ***less than significant***.

Impact 3.10-2: The Project may result in exposure of persons to or generation of substantial temporary increase in ambient noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies – Project Construction (Less than Significant)

During the construction of the Project, including roads, water, sewer lines, and related infrastructure, noise from construction activities would add to the noise environment in the Project vicinity. Existing receptors to the proposed construction activities are located adjacent north and west of the site along Cregan Court, Erato Circle, Choteau Circle, and Pawcatuck Way. Table 3.10-9 shows typical construction equipment noise at 25 and 50 feet.

TABLE 3.10-9: CONSTRUCTION EQUIPMENT NOISE

TYPE OF EQUIPMENT	*MAXIMUM LEVEL, DB*	
	25 FEET	*50 FEET*
Backhoe	84	78
Compactor	89	83
Compressor (air)	84	78
Concrete Saw	96	90
Dozer	88	82
Dump Truck	82	76
Excavator	87	81
Generator	87	81
Jackhammer	94	89
Pneumatic Tools	91	85

SOURCE: ROADWAY CONSTRUCTION NOISE MODEL USER'S GUIDE. FEDERAL HIGHWAY ADMINISTRATION. FHWA-HEP-05-054. JANUARY 2006.

As indicated in Table 3.10-9, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dBA L_{max} at a distance of 50 feet. Noise would also be generated during the construction phase by increased truck traffic on area roadways. A significant Project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration and would likely occur primarily during daytime hours.

Construction activities would be temporary in nature and are exempt from noise regulation during the hours of 6:00 a.m. to 8:00 p.m. on weekdays and 7:00 a.m. to 8:00 p.m. on Saturdays and Sundays as outlined in the City's Municipal Code for noise standard exemptions. Specifically, as noted previously, Section 6.68.090(E) of the City's Municipal Code exempts the following from the interior and exterior noise standards:

> *E. Noise sources associated with construction, repair, remodeling, demolition, paving or grading of any real property, provided said activities do not take place between the hours of 8:00 p.m. and 6:00 a.m. on weekdays and Friday commencing at 8:00 p.m. through*

and including 7:00 a.m. on Saturday; Saturdays commencing at 8:00 p.m. through and including 7:00 a.m. on the next following Sunday and on each Sunday after the hour of 8:00 p.m.; provided, however, when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in process be continued until a specific phase is completed, the contractor or owner shall be allowed to continue work after 8:00 p.m. and to operate machinery and equipment necessary until completion of the specific work in progress can be brought to conclusion under conditions which will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner;

Construction activities which occur during the aforementioned hours of operation are exempt from the City's noise standards. While construction activities as described above are exempt from the City's noise standards, Chapter 3 of the SPA Handbook establishes noise standards, including the requirement that construction staging areas, including equipment staging, equipment and materials storage, and soil stockpiling for grading activities, shall be located centrally within each phase of Project development and shall be setback from residential dwellings to the maximum extent feasible and that construction equipment be fitted with factory-equipped mufflers and maintained in good working order. The SPA Handbook also requires construction activities to adhere to the City's Municipal Code requirements, including the specified hours of operation for construction activities. Adherence to these hours of operation would ensure that construction noise levels occur during normal daytime hours and do not conflict with the City's noise standards. Implementation of the requirements included in the SPA Handbook will minimize noise impacts to residential uses by requiring compliance with the City's noise standards, ensuring that construction staging areas, including equipment and materials storage, are located away from residences, and that noise from all construction equipment is reduced through requiring that the equipment be fitted with factory-equipped mufflers and maintained in good working order and will ensure that these potential impacts are reduced to a ***less-than-significant*** level.

Impact 3.10-3: The Project may result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels (Less than Significant)

Typical residential, commercial, and recreation activities would not result in excessive groundborne vibration or groundborne noise levels. However, Project construction could result in groundborne vibration or noise levels. Sensitive receptors which could be impacted by construction-related vibrations, especially vibratory compactors/rollers, are located approximately 25 feet or further from the Project area.

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural damage. Table 3.10-10 shows the typical vibration levels produced by construction equipment.

TABLE 3.10-10: VIBRATION LEVELS FOR VARYING CONSTRUCTION EQUIPMENT

TYPE OF EQUIPMENT	*P.P.V. @ 25 FEET (IN/SEC)*	*P.P.V. @ 100 FEET (IN/SEC)*
Large Bulldozer	0.089	0.011
Loaded Trucks	0.076	0.010
Small Bulldozer	0.003	0.000
Auger/drill Rigs	0.089	0.011
Jackhammer	0.035	0.004
Vibratory Hammer	0.070	0.009
Vibratory Compactor/roller	0.210	0.026

SOURCE: FEDERAL TRANSIT ADMINISTRATION, TRANSIT NOISE AND VIBRATION IMPACT ASSESSMENT GUIDELINES, MAY 2006.

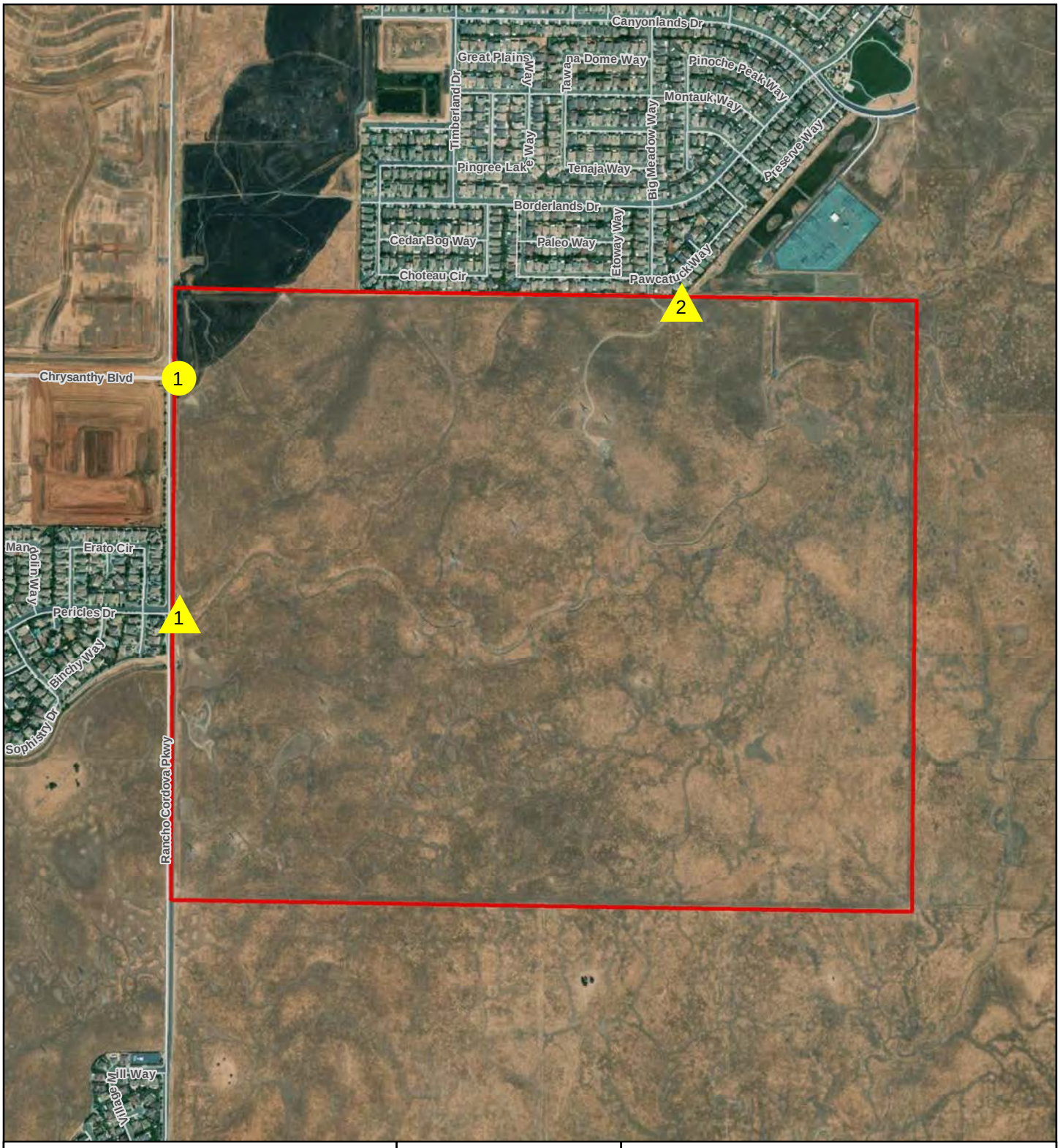
With the exception of vibratory compactors, the Table 3.10-10 data indicate that construction vibration levels anticipated for the Project are less than the 0.2 in/sec threshold at a distance of 25 feet. Use of vibratory compactors within 26 feet of the adjacent buildings could cause vibrations in excess of 0.2 in/sec. Sensitive receptors which could be impacted by construction-related vibrations, especially vibratory compactors/rollers, are located approximately 25 feet or further from the Project area.

The SPA Handbook requires that any compaction required less than 26 feet from the adjacent residential structures to the north shall be accomplished by using static drum rollers which use weight instead of vibrations to achieve soil compaction or, as an alternative, construction vibration monitoring could be conducted to ensure that construction vibrations do not cause damage to any adjacent structures. Adherence to this requirement will ensure that potential vibration impacts are reduced to a ***less-than-significant*** level.

Impact 3.10-4: The Project would not expose people residing or working in the Project area to excessive noise levels as a result of nearby airstrips or airports (Less than Significant)

There are no private airstrips in the Project vicinity. Mather Airport is located approximately three miles from the Project site. Based upon the Sacramento County Land Use Compatibility Planning Noise Contours for Mather Airport, the Project site is located outside of the 60 dB CNEL noise contour. In addition, the Sacramento County Airport System has implemented noise abatement procedures, including guidelines for flights during nighttime hours, to limit aircraft noise exposure in the surrounding communities. Therefore, this is a ***less-than-significant*** impact.

This page left intentionally blank.



Legend

Project Location (APN 067-004-0008)

Noise Monitoring Locations

Noise Measurement Site - Long Term

Noise Measurement Site - Short Term

Data sources: Saxelby Acoustics, 10/2/2018; Sacramento County GIS; ArcGIS Online World Imagery Map Service. Map date: March 19, 2019.

N

0 250 500

Feet

1:12,000

THE RANCH
SACRAMENTO COUNTY, CALIFORNIA

Figure 3.10-1.
Noise Measurement Sites

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left intentionally blank.

The purpose of this EIR section is to analyze and disclose the anticipated growth in population that would result from Project implementation, analyze the Project's consistency with relevant planning documents and policies related to population and housing, and recommend mitigation measures to avoid or minimize the significance of potential impacts.

Information in this section is based primarily on information provided by the Project applicant in the Project application package submitted to the City, site surveys conducted by De Novo Planning Group in 2018, ground and aerial photographs, and the following reference materials:

- *Rancho Cordova General Plan* (City of Rancho Cordova, Adopted June 26, 2006);
- *Rancho Cordova General Plan Draft Environmental Impact Report* (City of Rancho Cordova, March 2006);
- *City of Rancho Cordova Housing Element* (City of Rancho Cordova, Adopted December 16, 2013);
- City of Rancho Cordova Zoning Ordinance;
- *Metropolitan Transportation Plan/Sustainable Communities Strategy* (Sacramento Area Council of Governments (SACOG), Adopted February 18, 2016);
- U.S. Census data (U.S. Census, 2018); and
- California Department of Finance Population and Housing Estimates (E-5 Reports) (California Department of Finance, 2018).

No comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic.

3.11.1 ENVIRONMENTAL SETTING

DEMOGRAPHICS

POPULATION TRENDS

The City of Rancho Cordova incorporated in July 2003. As shown in Table 3.11-1, U.S. Census data indicates that the City of Rancho Cordova experienced strong population growth from 2000 to 2010, increasing from 53,065 to 64,776 persons at an annual average increase of 2.2 percent. The rate of growth between 2010 and 2016 has remained relatively stable. The City's population has increased during this decade to a population of 74,210 in 2018.

TABLE 3.11-1: POPULATION GROWTH – RANCHO CORDOVA

YEAR	*POPULATION*	*ANNUAL AVERAGE CHANGE*
2000	53,065	--%
2010	64,776	2.2%
2018	74,210	1.8%

SOURCES: US CENSUS, 2018; CALIFORNIA DEPARTMENT OF FINANCE, 2018.

3.11 POPULATION AND HOUSING

HOUSING STOCK

Table 3.11-2 summarizes the growth of the City's housing stock from the years 2000 to 2018, based on information from the US Census and California Department of Finance. The number of housing units has increased from 25,479 in 2010 to 27,584 in 2018, an average annual increase of 1.03 percent.

TABLE 3.11 -2: HOUSING UNIT GROWTH – RANCHO CORDOVA

YEAR	*HOUSING UNITS*	*ANNUAL AVERAGE CHANGE*
2000	20,542	--
2010	25,479	2.40%
2018	27,584	1.03%

SOURCES: US CENSUS, 2018; CALIFORNIA DEPARTMENT OF FINANCE, 2018; SACOG, 2001.

PERSONS PER DWELLING UNIT

The average number of persons residing in a dwelling unit in Rancho Cordova is 2.84 (California Department of Finance, 2018). The 2013-2017 American Community Survey 5-Year Estimates data provides more detail regarding household sizes in the City, reporting average household sizes of 2.84 persons per owner-occupied households, 2.89 persons per renter-occupied households, 2.08 persons per owner-occupied householders (60 years and older), and 2.05 persons per renter-occupied householders (60 years and older).

GROWTH PROJECTIONS

As part of the Sacramento Region Blueprint process, the Sacramento Area Council of Governments (SACOG) produced regional growth projections through 2035. The City is projected to have approximately 69,252 housing units and 134,377 employees by 2035. The Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) adopted by SACOG in 2016 projects that Rancho Cordova will have 67,300 jobs by 2036

The City's General Plan estimates the population of Rancho Cordova will grow to 267,275 by 2030 and 310,568 by 2050. The City's General Plan EIR estimates that the Rancho Cordova will have a total of 126,241 residential units and 195,021 employees at buildout (which is approximately 2050).

3.11.2 REGULATORY SETTING

SACRAMENTO AREA COUNCIL OF GOVERNMENTS

SACOG is an association of local governments from six counties and 22 cities within the Sacramento Region. The counties include El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba. SACOG is responsible for the preparation of, and updates to, the Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) for the region.

Metropolitan Transportation Plan/Sustainable Communities Strategy

The 2016 MTP/SCS is a long-range plan for transportation improvements in the region, as well as policies and strategies to reduce greenhouse gas emissions, and was adopted by SACOG in 2016. The MTP/SCS addresses the needs of the current population of 2.3 million residents, by improving the conditions of existing roads and adding more sidewalks, bike lanes, and restoring, maintaining and expanding transit, making it possible for more people to have many choices for how they get around and live independently as they age. The 2016 MTP/SCS also plans for the future by including roads and transit projects where new houses and jobs are added to serve today's children as they grow up and for new residents anticipated to move here over the next few decades. The plan is based on projections for growth in population, housing, and jobs. SACOG determines the regional growth projections by evaluating baseline data (existing housing units and employees, jobs/housing ratio, and percent of regional growth share for housing units and employees), historic reference data (based upon five- and ten-year residential building permit averages and historic county-level employment statistics), capacity data (General Plan data for each jurisdiction), and current MTP data about assumptions used in the most recent MTP/SCS. SACOG staff then meets with each jurisdiction to discuss and incorporate more subjective considerations about planned growth for each area. Finally, SACOG makes a regional growth forecast for new homes and new jobs, based upon an economic analysis provided by a recognized expert in order to estimate regional growth potential based on market analysis and related economic data. This growth forecast is then incorporated into the MTP/SCS.

Regional Housing Needs Plan

California General Plan law requires each city and county to have land zoned to accommodate a fair share of the regional housing need. The share is known as the Regional Housing Needs Allocation (RHNA) and is based on a Regional Housing Needs Plan (RHNP) developed by councils of government. SACOG is the lead agency for developing the RHNP for a six-county area that includes Sacramento County and the City of Rancho Cordova. The latest housing allocation for the City of Rancho Cordova covers the nearly eight-year period from 2013 through 2021 and consists of 7,008 units (770 extremely low, 770 very low, 1,079 low, 1,303 moderate, and 3,087 above moderate income). The City is not required to make development occur; however, the City must facilitate housing production by ensuring that land is available and that unnecessary development constraints have been removed. The City prepared and adopted an updated Housing Element in 2016 to address the 2013-2021 RHNA.

RANCHO CORDOVA GENERAL PLAN

The Rancho Cordova General Plan establishes planned land uses for the Suncreek/Preserve Planning Area on page 83 of Chapter II, Land Use. General Plan Figure LU-28 shows the Conceptual Land Plan for the Suncreek/Preserve Planning Area, which designates the Project site with Residential-Mixed Density, Local Town Center, Natural Resources, and Park and Open Space. The buildout assumptions for the entire Suncreek/Preserve Planning Area include up to:

- 9,263 dwelling units
- 21,236 people
- 1,331 employees

The City of Rancho Cordova General Plan contains the following goals and policies that are relevant to population and housing:

ECONOMIC DEVELOPMENT ELEMENT

Goal ED.1: Diversify Rancho Cordova's economy by facilitating and encouraging land uses that provide substantial and sustainable fiscal benefits to the City and residents.

> **Policy ED.1.8:** Provide a variety of housing types in Rancho Cordova to support a diverse economy, including workforce housing, move-up housing, and executive housing.

HOUSING ELEMENT

Goal H.1: Seek a balance of housing opportunities appropriate for the range of jobs available and planned in the City.

> **Policy H.1.1:** Improve the City's jobs-housing balance through ensuring that housing development in Rancho Cordova provides opportunities for all income levels in order to serve the full range of available and projected jobs in the City.
>
> **Policy H.1.3:** Promote a broader range of housing options for executives.
>
> **Policy H.1.5:** Developers of new residential projects within the newly developing areas of the City (generally in the large, vacant areas south of Highway 50) shall prepare an Affordable Housing Plan (Plan) for the project for City review and approval that identifies the project's plan for providing affordable housing.

Goal H.3: Promote housing diversity through providing a range of high-quality housing choices for the community, including single-family homes, duplexes, townhomes/condominiums, live-work units, mixed-use, multi-family, executive housing, and mobile homes, that serve all households, ranging from the workforce to executives to seniors and other special needs groups.

> **Policy H.3.1:** Ensure that neighborhoods are developed in a balanced, sustainable manner, avoiding over-concentration of affordable housing or oversized rental complexes and providing a range of housing prices and rents.
>
> **Policy H.3.2:** Provide a range of senior housing opportunities, including senior developments with single-story homes, independent living, assisted living, skilled nursing, and shared housing, and pursue opportunities and funding to convert existing apartment complexes to senior housing facilities.

Policy H.3.3: Provide housing for the special needs populations, including housing accessible for persons with disabilities (including veterans as a primary target group), large households, the homeless, and single-parent households.

3.11.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Based on the standards established by Appendix G of the California Environmental Quality Act (CEQA) Guidelines, the Project will have a significant impact on population and housing if it will:

- Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure); or
- Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

As discussed in the Initial Study, the Project site is currently undeveloped and does not contain housing. The Project would not displace housing or people. There is ***no impact***, and these topics will not be further addressed in the EIR.

IMPACTS AND MITIGATION MEASURES

Impact 3.11-1: Project implementation would not induce substantial population growth (Less than Significant)

Section 15126.2(d) of the CEQA Guidelines requires that an EIR evaluate the growth-inducing impacts of a proposed action. A growth-inducing impact is defined by the CEQA Guidelines as:

The way in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth…It is not assumed that growth in an area is necessarily beneficial, detrimental, or of little significance to the environment.

Based on the CEQA Guidelines, growth inducement is any growth that exceeds planned growth of an area and results in new development that would not have taken place without implementation of the Project. A project can have direct or indirect growth inducement potential. Direct growth inducement would result if a project, for example, involved construction of new housing. A project would have indirect growth inducement potential if it established substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises) or if it would involve a construction effort with substantial short-term employment opportunities that would indirectly stimulate the need for additional housing and services to support the new employment demand (*Napa Citizens for Honest Government v. Napa County Board of Supervisors* (2001) 91 Cal.App.4th 342). Similarly, a project would indirectly induce growth if it would remove an obstacle

to additional growth and development, such as removing a constraint on a required public service. A project providing an increased water supply or wastewater treatment/collection in an area where this service historically limited growth could be considered growth-inducing.

The CEQA Guidelines further explain that the environmental effects of induced growth are considered indirect impacts of the proposed action. These indirect impacts or secondary effects of growth may result in significant, adverse environmental impacts. Potential secondary effects of growth include increased demand on other community and public services and infrastructure, increased traffic and noise, and adverse environmental impacts such as degradation of air and water quality, degradation or loss of plant and animal habitat, and conversion of agricultural and open space land to developed uses.

Growth inducement may constitute an adverse impact if the growth is not consistent with or accommodated by the land use plans and growth management plans and policies for the area affected. Local land use plans provide for land use development patterns and growth policies that allow for the orderly expansion of urban development supported by adequate urban public services, such as water supply, roadway infrastructure, sewer service, and solid waste service.

COMPONENTS OF GROWTH

The timing, magnitude, and location of land development and population growth in a region are based on various interrelated land use and economic variables. Key variables include regional economic trends, market demand for residential and non-residential uses, land availability and cost, the availability and quality of transportation facilities and public services, proximity to employment centers, the supply and cost of housing, and regulatory policies or conditions. Since the general plan of a community defines the location, type, and intensity of growth, it is the primary means of regulating development and growth in California.

GROWTH EFFECTS OF THE PROJECT

Direct Population Growth: The Project would be a residential and commercial mixed use development, resulting in the addition of up to 1,725 residential units, including 737 age restricted single-family units, 735 non-age restricted single-family units, and up to 253 multifamily units, 38 of which would be age-restricted multifamily units. This would allow for a maximum population of approximately 4,319 residents, as described in Chapter 2.0, Project Description. Development of the Project site for residential uses was accounted for in the SACOG MTP/SCS and in the City's General Plan.

The Rancho Cordova General Plan designates land uses to ensure a balance between new residential development and jobs-creating uses. As described in Section 3.9, Land Use, the Project site is designated as Suncreek/Preserve Planning Area by the General Plan, which is anticipated to accommodate 9,263 dwelling units and 1,331 jobs on 1,762 acres. The General Plan EIR, certified in June 2006, identifies that the Project site was planned to accommodate 2,624 units on 303.5

acres of the 530-acre site, as well as a village center, parks, and a wetland preserve (City of Rancho Cordova General Plan Draft EIR, 2006, p. 4.0-6).

The Project does not exceed the growth assumptions for the Project site as anticipated by the General Plan and General Plan EIR. The Project includes a mix of residential densities, a commercial mixed use component, parks and open space areas, and a nature preserve. As such, the proposed uses are consistent with the Suncreek/Preserve Planning Area Draft Land Use Concept Map.

Indirect Population Growth: As described above, projects that include employment generating uses have the potential to result in indirect population growth through the creation of jobs or the extension of infrastructure into areas that were not previously served. Implementation of the Project would provide job growth to the area. It is anticipated that local employment would be increased to provide administrative, management, visitor-serving areas, and retail services. The Project is expected to require both full-time and part-time employees. It is anticipated that the employment growth would be met both by existing residents and through the attraction of new residents.

The future employment growth associated with the Project is consistent with the growth anticipated in the City's General Plan, as well as the SACOG 2016 MTP/SCS (see Section 3.9, Impact 3.9-1 for further discussion of General Plan and MTP/SCS consistency).

The Project would not remove any barriers to growth. Growth within the Project area has been anticipated by the City ever since its incorporation in 2003 and adoption of the General Plan in 2006. The Project site is bound by the Sunridge Specific Plan to the north, east, and west, and by the SunCreek Specific Plan to the south and east. Much of the utilities infrastructure that would be extended to serve the Project site is currently developed and stubbed adjacent to the Project site. Additionally, public services providers have anticipated development of the site and adjacent areas. Existing school facilities are located in the vicinity of the site, and a fire station was also constructed west of the site in order to serve the existing and future uses within the Project area.

CONCLUSION

The Project would not result in direct or indirect population growth beyond the City's planned capacity. Therefore, the Project is not anticipated to exceed the planned growth (directly or indirectly) in the area beyond what is projected for the City of Rancho Cordova General Plan. While the Project will result in growth, it will accommodate planned growth and it is not anticipated to significantly induce new growth. Therefore, this impact is ***less than significant***.

This page left intentionally blank.

This section describes and evaluates potential impacts associated with the provision of police protection, fire protection and emergency services, schools, parks and recreation, and other services for the Project. This section is based in part on the following documents:

- *Rancho Cordova General Plan* (City of Rancho Cordova, Adopted June 26, 2006);
- *Rancho Cordova General Plan Draft Environmental Impact Report* (City of Rancho Cordova, March 2006);
- School Accountability Report Card (Elk Grove Unified School District, 2017-2018);
- Facilities Master Plan 2015-2025 Update (Elk Grove Unified School District, February 2016);
- *Master Plan for New Development in Incorporated Areas* (Cordova Recreation & Parks District, 2014); and
- *Preliminary District-Wide Facilities Distribution Plan* (Cordova Recreation & Park District, 2017).

A comment was received during the public review period or scoping meeting for the Notice of Preparation regarding this topic from the Cordova Recreation & Park District (CRPD, August 2018). This comment is addressed within this section.

3.12.1 ENVIRONMENTAL SETTING

POLICE PROTECTION

The Rancho Cordova Police Department is contracted through the Sacramento County Sheriff's Department (SCSD). SCSD has a paid staff of 2,332 persons, consisting of 1,789 officers and 543 nonsworn members. SCSD also has a reserve force of 168 officers and approximately 621 community volunteers. SCSD is funded through Sacramento County tax revenues and special Federal and local grants and SCSD and the City have agreed that funding for the Rancho Cordova Police Department will occur using revenues from the City's General Fund, which is the primary source of revenue for law enforcement services.

The City adopted an agreement with SCSD when the City was incorporated in 2003 stating that all law enforcement for Rancho Cordova will be provided by the SCSD and law enforcement services for Rancho Cordova are provided by the SCSD's East Division. The contracted services include patrol, traffic enforcement, investigations, and administrative services.

The Police Department is located at 2897 Kilgore Road, approximately 4.0 miles northwest of the Project site. The Police Department is organized into three components: the Administrative Services Bureau, which include the budget coordinator, equipment manager, and volunteer coordinator; the Investigations and Community Services Bureau, which includes the detective unit, problem-oriented police unit, traffic enforcement, and crime prevention center; and Patrol Operations Bureau. As part of the City's contract with SCSD, the City pays the salaries of 86 total staff, who work solely for the City. This staff includes one captain, five lieutenants, six patrol sergeants, 29 patrol officers, four detectives/investigators, and other patrol, administrative, and

support staff.[1] The City's goal is to provide one police officer for every 1,000 citizens. Using the City's estimated population of 74,210 residents and the 77 police officers, the City currently meets its goal of one officer for every 1,000 citizens.

One important measurement of service delivery is response time to emergency calls-for-service. The Police Department Service Delivery Plan calls for emergency call response within 5 minutes or less for Priority One calls. A Priority One call is a violent crime against a person or an emergency requiring an immediate response to save a life. The Police Department maintains an average response time for Priority One calls for service of 5 minutes or less. Daily assessments are conducted on a call-by-call basis, with the goal of improving the department's response times.

The California Highway Patrol (CHP) provides traffic regulation enforcement, emergency management, and vice assistance on state highways, all Federal interstate highways, and other major roadways in unincorporated portions of the eastern Sacramento County area. The Project site is located within the Valley Division, which oversees Interstate 80, Interstate 5, U.S. 50, and State Route 99. The Valley Division includes 16 area offices, three resident posts, one commercial inspection facility, one transportation management center, three communications/dispatch centers and is staffed with 785 uniformed officers and 250 non-uniformed personnel.

FIRE PROTECTION AND EMERGENCY SERVICES

The Sacramento Metropolitan Fire District (SMFD) currently provides fire protection services to unincorporated areas of Sacramento County and to the Cities of Rancho Cordova and Citrus Heights. SMFD offers fire protection, fire suppression, inspection, plan checking, emergency transportation and medical services, public education, advanced life support, and rescue services to the unincorporated portions of Sacramento County. SMFD was formed in 2000 by consolidation of the American River Fire District and the Sacramento County Fire Protection District.

As the largest fire district in Sacramento County, SMFD currently operates 42 stations and provides service through 664 uniformed and support personnel to nearly 745,000 people in a 359-square mile area. SMFD operates ten transporting Advanced Life Support medics, seven reserve transporting medics, 38 engine companies, five truck companies, 24 grass engines, two crash rescue rigs, six water tenders, four swift water rescue bikes, five swift water rescue inflatable rubber boats, five air units, three reserve firefighter engine companies, and two reserve firefighter grass engines. Many of SMFD's engines are paramedic staffed and all responding units provide coverage by emergency medical technicians. SMFD's personnel are trained and equipped to deal not only with emergency medical alarms and structural or wildland fires, but also with swift water

[1] Personal Communication with Jeff Schelldorf, Lieutenant, Rancho Cordova Police Department. March 7, 2019.

emergencies, confined space incidents, technical rescues, hazardous materials incidents, and crash fire rescue.

To improve response times for fire districts within Sacramento County, the County Department of Emergency Medical Services developed a Joint Powers Authority (JPA) for a unified-dispatch system to respond to fire and emergency-related incidents. Under the JPA, the closest unit available is dispatched to an incident, and fire district boundaries are not considered when an incident occurs. The JPA, known as the Regional Fire and Rescue Training Authority, is made up of the California Office of Emergency Services–Fire and Rescue Branch, SMFD, and the Sacramento Fire Department.

Rancho Cordova represents only a portion of the overall SMFD service area, which includes Orangevale, Citrus Heights, Fair Oaks, Arden Arcade, Rio Linda, and South Sacramento. SMFD's Fire Administration Office is located at 2101 Hurley Way in Sacramento. SMFD operates a total of six fire stations that serve Rancho Cordova:

- Station 61—10595 Folsom Boulevard, Rancho Cordova
- Station 62—3646 Bradshaw Road, Sacramento
- Station 63—12397 Folsom Boulevard, Rancho Cordova
- Station 65—11201 Coloma Road, Rancho Cordova
- Station 66—3180 Kilgore Road, Rancho Cordova
- Station 68—4381 Anatolia Drive, Rancho Cordova

First-response service to the Project site would be provided by Station 68, approximately 0.85 miles west of the western Project boundary. Station 68 operates one engine company.

The Insurance Services Office (ISO) rating is the recognized classification for a fire department or district's ability to defend against major fires. According to the ISO, newly developing urban areas should have a fire station opened within 1.5 miles of all commercial development and 2.5 miles from all residential development when "build-out" exceeds 20% of the planning area. A rating of 10 generally indicates no protection, whereas an ISO rating of 1 indicates high firefighting capability. The SMFD's ISO rating is currently a class 3 for hydrant areas and class 3y for non-hydrant areas and a response time of five minutes for emergency calls, where staffing levels are adequate. The SMFD currently meets this goal.

Funding for fire services and facilities resulting from new construction is facilitated through SMFD's Capital Fire Facilities Fee Schedule and property tax revenue. The SMFD continuously monitors trends that impact property values in order to develop realistic projections of property tax revenues upon which budgeting and service level decisions can be made. To the extent that property tax revenues expected to be generated by new development would not be sufficient to fund the expected operating cost to provide service, Metro Fire will explore alternative funding mechanisms to ensure that adequate service is provided and to avoid any degradation of service to existing communities.

The Capital Fire Facilities Fee was established through State Assembly Bill 1600, which provides the authority for SMFD to fund the full cost of providing new fire services and facilities to new development within its service area. The fee is used exclusively to defray costs and mitigate the impact associated with property acquisition, site preparations, design, construction, and equipping new fire stations that are required to serve new development. The Capital Fire Facilities Fee became effective in June 2003 and remains in effect until December 2020. Additional funds are generated by ambulance transport fees, and service fees (mostly from fire prevention plan checking charges).

In July 2003, the City began collecting the new Capital Fire Facilities Fee for SMFD. The Capital Fire Facilities Fee is assessed by the City's Public Works Department when improvement plans are submitted.

SCHOOLS

Elk Grove Unified School District

The Project site is located within the Elk Grove Unified School District (EGUSD) boundary. EGUSD is the fifth largest school district in California and the largest in northern California. Located in southern and eastern Sacramento County, EGUSD covers 320 square miles and has been in existence for over 41 years. The EGUSD boundaries encompass the entire City of Elk Grove, portions of the Cities Sacramento and Rancho Cordova, and most of southern Sacramento County.

EGUSD had a 2016–2017 school year enrollment of 63,297 students. EGUSD has 64 schools: 39 elementary schools, nine middle schools, nine high schools, four alternative education schools, an adult school, a special education school, and one charter school. In addition to the schools listed above, EGUSD has several elementary school sites and combined middle school/high school sites planned in the Sunrise-Douglas area, with opening dates to be determined, based on market conditions and associated student generation. In cases where school capacity is exceeded, students would be redirected to other schools in the EGUSD.

As shown on the EGUSD 2016–2017 school attendance boundaries map, students living in the Project site in early stages of Project development, before the Suncreek Specific Plan schools are constructed, would attend Sunrise Elementary School, Katherine Albiani Middle School, and Pleasant Grove High School. Other alternative or redirect (i.e., continuation) schools that students living in the Project site may attend include T. R. Smedberg Middle School, Sheldon School, Elk Grove Charter School, Las Flores Independent Study School, and the Elk Grove Virtual Academy. Table 3.12-1 identifies the 2016–2017 school-year enrollments for these schools.

TABLE 3.12-1: ELK GROVE UNIFIED SCHOOL DISTRICT: SCHOOL INVENTORY AND 2016/2017 ENROLLMENT

SCHOOL	*ENROLLMENT*	*CAPACITY*
Sunrise Elementary (K-6)	1,328	1,426
Katherine Albiani Middle (7-8)	1,440	1,424
Pleasant Grove High (9-12)	2,544	2,477
T. R. Smedberg Middle (7-8)	1,196	1,329
Sheldon (K-12)	2,389	3,142
Elk Grove Charter (9-12)	287	N/A
Las Flores Independent Study (K-12)	228	N/A
Total	**9,412**	**N/A**

NOTE: ELK GROVE VIRTUAL ACADEMY DOES NOT HAVE A SCHOOL ACCOUNTABILITY REPORT CARD.
SOURCE: ELK GROVE UNIFIED SCHOOL DISTRICT, SCHOOL ACCOUNTABILITY REPORT CARDS FROM 2017-2018 SCHOOL YEAR.

Sunrise Elementary is located at 11821 Cobble Brook Drive, approximately 0.75 miles northwest of the Project site, and serves elementary school students in grades K–5. The buildings were completed and occupied in August 2007. The campus currently includes seven permanent buildings and six relocatable buildings (which house 39 classrooms - 35 grade 1-6, three pre-k/kindergarten, and two special education), a multipurpose room, a library, a computer lab, a Learning Center, and an administration building. The portable buildings on the Sunrise Elementary campus will be eligible for state modernization funding in 2025, and the permanent buildings will be eligible as of 2030.

Katherine Albiani Middle School is located at 9140 Bradshaw Road, approximately 10.1 miles southwest of the Project site, and serves students in grades 6–8. Katherine L. Albiani Middle School opened in August 2005 and currently includes ten permanent buildings which house 48 classrooms (including 44 regular and four special education), a multipurpose room, a library, a dance room, a music room, and an administration building. Katherine Albiani Middle School will not be eligible for modernization funding between 2015 and 2025. All of the buildings on the campus will be eligible for state modernization funding beginning in 2028.

Pleasant Grove High School is located at 9531 Bond Road, approximately 10.2 miles southwest of the Project site. The high school serves students in grades 9–12. Pleasant Grove High School was opened in August 2005 and currently provides 19 permanent buildings with 86 regular classrooms and four special education classrooms, four relocatable buildings under 20 years old, two relocatable rooms over 20 years old, five computer labs, administrative and student services offices, two gyms, and a multipurpose room. The library serves both the Pleasant Grove High School and Katherine Albiani Middle School. In 2007, five additional portables were added to the northwest corner of campus to accommodate student growth. An agricultural facility with two barns was completed in 2011. Pleasant Grove High School will not be eligible for modernization funding between 2015 and 2025. All of the buildings on the campus will be eligible for state modernization funding by 2028.

The EGUSD is funded by approximately 50% state and 50% local sources. The district can receive local funding through developer impact fees, tax revenue from Mello-Roos districts, and General Obligation bonds. Developer impact fees are the major source of funding for the district. Based on

its facility needs assessment, EGUSD demonstrated the need to levy Level II developer fees that are higher than the statutory fee. As of July 2018, Level II fees for residential construction are $5.65 per square foot and $0.56 per square foot for commercial construction. Developer fees may be used to finance new schools and equipment, and to reconstruct existing facilities to maintain adequate housing for all the district's students. Mello-Roos districts are defined tax areas usually associated with new residential subdivisions, which are often used for additional school taxes.

PARKS AND RECREATION SYSTEM

Park planning in the City is an interagency and interjurisdictional process. At the broadest level, the Sacramento County Regional Parks (SCRP) manages the regional park system. Parks in Rancho Cordova are planned and operated by the CRPD.

The CRPD is located in the east-central portion of Sacramento County, south of the American River, and is bisected by U.S. 50. CRPD encompasses 75 square miles. The Project site lies in the CRPD planning area. CRPD has the primary responsibility of providing recreation facilities and services within the Cordova Planning Area, which includes Rancho Cordova and the Project site. CRPD's jurisdiction extends south beyond the boundaries of Rancho Cordova and Project site to Jackson Road and Grant Line Road. CRPD has developed six park categories— mini parks; neighborhood parks; community parks; regional parks; linear parkways, greenbelts and open space; and bicycle trails—to meet the recreational needs of the community. The classification of each category is based on CRPD's determination of use, function, acreage, service area, and population served. CRPD administers a total of 438 acres, which includes 18 neighborhood parks, six community parks, four community swimming pools, the Cordova Community Center at Hagan Community Park on Chase Drive, the Cordova Senior Center on Routier Road, Mather Sports Complex, the Cordova Public Shooting Center on Douglas Road, and the Cordova Golf Course on Jackson Road. The Parkway is located in the CRPD planning area. Table 3.12-2 includes the names, locations, and short descriptions of existing CRPD facilities.

TABLE 3.12-2: EXISTING CORDOVA RECREATION & PARK DISTRICT FACILITIES

FACILITY NAME	*LOCATION*	*DESCRIPTION OF FACILITIES*
Ahlstrom Park	Zinfandel Dr. and Cordova Ln., Rancho Cordova	7 acres with Little League baseball field and picnic tables
Alexander Bike Trail	Bear Hollow Dr., Rancho Cordova	2.49-acre special use area with bike trail segment, benches, and landscaping
Anatolia Bike Trail	Anatolia Dr., Rancho Cordova	4.6-acre special use area with bike trail, benches, and landscaping
Argonaut Park	Anatolia Dr. and Herodian Dr., Rancho Cordova	5.9 acres with group picnic area, barbeques, half basketball court, softball field, soccer field, and playground
Cordova Community Center	2197 Chase Dr., Rancho Cordova	Multi-use facility with meeting rooms, gymnasiums, ball fields
Cordova Golf Course	9425 Jackson Rd., Sacramento	Pro shop, lighted driving range, practice putting green, electric carts, hand carts, golf club rentals, and restaurant
Cordova Senior Center	3480 Routier Rd., Rancho Cordova	Full schedule of senior activities (e.g., watercolors, arts and crafts, yoga, and adult exercise)
Cordova Shooting Center	11551 Douglas Rd., Rancho Cordova	Outdoor shooting range featuring covered shooting positions, rental firearms, and a variety of classes

FACILITY NAME	*LOCATION*	*DESCRIPTION OF FACILITIES*
Countryside Park	Glenmoor Dr., Rancho Cordova	2 acres with picnic tables and tot lot
Dave Roberts Community Park	Benita Dr. and Mapola Way, Rancho Cordova	13 acres with a lighted softball field, tennis courts, regulation soccer field, and playground
Eagle's Nest Park	Anatolia Dr. and Chrysanthy Blvd., Rancho Cordova	3.7 acres with basketball court, open play fields, group picnic area, individual picnic areas, playground, and tennis courts. Adjacent to private community-owned recreation center
Federspiel Park	Aramon Dr. and Chassella Way, Rancho Cordova	4 acres with swimming pool, bantam soccer field, picnic tables, and playground
Gold River Park	Gold Country Blvd. and Poker Flat Dr., Gold River	6 acres with picnic tables, horseshoe pits, tot lot, playground, and bantam soccer field
Gold Station Park	Gold Station Rd., Gold River	2.2 acres with picnic tables, playground, and bantam soccer field
Hagan Community Park	2197 Chase Dr., Rancho Cordova	75 acres with Cordova Community Center, three swimming pools, eight tennis courts, group picnic areas, baseball fields, soccer fields, basketball court, playgrounds, tot lots, fitness course, and scale model stream railroad. Also provides access to the Jedediah Smith memorial Trail and foot access to the American River
Henley Park	Henley Dr., Rosemont	One-half acre with picnic tables and tot lot
Heron Landing Community Park	Justinian Dr. & Sunrise Blvd., Rancho Cordova	20 acres with sports fields, tennis court, picnic facilities, 2 playgrounds, restrooms, showers, and spray park
Independence Park	Brittan Way and School St., Mather	11 acres with picnic tables, restrooms, and playground
Larchmont Community Park	Linda Rio Dr., Sacramento	14 acres with two tennis courts, one bantam soccer field, one regulation soccer field, group picnic area, and playground
Larchmont-Rossmoor Park	Ambassador Dr., Sacramento	3 acres with softball field, soccer field, picnic tables, and playground
Lincoln Village Community Park	3480 Routier Rd., Sacramento	17 acres with a lighted softball field, four tennis courts, swimming pool, basketball court, group picnic area, and the Cordova Senior Center
Manlove Park	Rose Parade Way and Spellbinder Ct., Rosemont	3 acres with picnic tables and tot lot
Mather Sports Complex	3755 Schriever Ave., Mather	Aerobics, open gym, racquetball, weight rooms, and walking and jogging facility
Primrose Park	Off Hedge Rd. and Jackson Hwy., Rosemont	2.4 acres with picnic tables and tot lot with play structure
Prospect Hill Park	Gold Flat Dr. and Prospect Hill Dr., Rancho Cordova	7 acres with picnic tables, basketball court, bantam soccer field, and tot lot
Renaissance Park	3125 Mowbray Way, Rancho Cordova	Group picnic area, playground, half basketball court
Riviera East Park	Mira Del Rio Dr., Sacramento	9 acres with two tennis courts, bantam soccer field, basketball court, group picnic area, and tot lot
Rosemont Community Park	Americana Way, Rosemont	17 acres with four tennis courts, two Little League fields, softball field, playground, tot lot, and group picnic areas
Rosemont North Park	Huntsman Dr. and Premier Way, Rosemont	3 acres with picnic tables and playground
Rosswood Park	Roseport Way and Rose Brook Way, Rosemont	1 acre with picnic tables and tot lot
Salmon Falls Park	Salmon Falls Dr., Sacramento	One-quarter acre, no permanent facilities
Sandpiper Park	Appolon Way near Steccato Dr., Rancho Cordova	5 acres with open play fields, group picnic area, individual picnic areas, playground, and bike trail access
Sonoma Park	Bear Hollow Dr., Rancho Cordova	4 acres with concrete walkways, tot lot, playground, and covered group picnic area

FACILITY NAME	*LOCATION*	*DESCRIPTION OF FACILITIES*
Stone Creek Bike Trail	Azienda Dr., Rancho Cordova	49.24-acre special use area with bike bath, picnic tables, and directional signage
Stone Creek Community Park	Spoto Dr., Rancho Cordova	21 acres with large and small group picnic areas, restrooms, concrete walkways, playground, water feature, basketball court, soccer fields, softball/youth baseball field, amphitheater, and modular skateboard features
Sunridge Park	4041 Borderlands Dr., Rancho Cordova	7 acres with basketball court, multiuse field, picnic facilities, and playground
Sunriver Park	Klamath River Dr., Rancho Cordova	4.5 acres with picnic tables, ball field, basketball court, and tot lot
Taylor Park	West La Loma Dr., Rancho Cordova	3 acres with a tot lot, playground, and picnic tables
Tuscany Park	Corvina Dr., Rancho Cordova	4.5 acres with covered group picnic area, playground, soccer field, half basketball court, horseshoe pit, softball/youth baseball field, and concrete walkways
Veterans Park	Mather Blvd., Mather	6.4 acres with a playground, tennis courts, basketball court, and a group picnic area
The Village Green Park	3141 Bridgeway Dr., Rancho Cordova	2 acres with spray park, restrooms, amphitheater, and sitting areas
Waterbrook Park	Waterbrook Dr., Rancho Cordova	One-tenth acre with playground
White Rock Park	10488 White Rock Rd., Rancho Cordova	12 acres with a swimming pool, two tennis courts, group picnic areas, playground, and basketball court
Mather Regional Park and Mather Lake	Eagles Nest Rd., Mather	18-hole golf course, picnic sites, hiking trails, wildlife viewing, bird watching, and fishing

SOURCE: CRPD DISTRICT INVENTORY & ASSESSMENT PLAN, 2012; PRELIMINARY DISTRICT-WIDE FACILITIES DISTRIBUTION PLAN, 2017; PARKS & FACILITIES LIST: HTTPS://CRPD.COM/PARKS ACCESSED APRIL 4, 2019

In fall 2005, CRPD adopted new standards that include a requirement of 5 acres of parkland per 1,000 residents, and the addition of performance standards for specific types of open space. Using the new standard of 5 acres per 1,000 residents, the projected 2020 CRPD population (158,767 residents) contained in the CRPD Master Plan, and the total parkland in the CRPD (630.20 acres[2]), CRPD provides approximately 4.0 acres per 1,000 residents.

The existing park facilities nearest the Project site are located to the northwest of the Project site: Argonaut Park, Eagles Nest Park, Kavala Ranch Park, Sandpiper Park, and Sunridge Park.

LIBRARY SERVICES

Library services in the City of Rancho Cordova are provided by the Sacramento Public Library. The Rancho Cordova library branch is located at 9845 Folsom Boulevard, Sacramento, CA 95827. This library has a book drop, computer workstations, and a meeting room with tables, chairs, kitchen, and projector screen.

[2] Cordova Recreation & Park District: District Inventory & Assessment Plan – Final Draft. 2012.

3.12.2 REGULATORY SETTING

STATE

California Fire Code

The California Fire Code contains regulations relating to construction and maintenance of buildings and the use of premises. Topics addressed in the Code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions to protect and assist first responders, industrial processes, and many other general and specialized fire safety requirements for new existing buildings and premises.

California Health and Safety Code

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code. This includes regulations for building standards (as also set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

California Code of Regulations

The California Code of Regulations, Title 5 Education Code, governs all aspects of education within the State.

Leroy F. Greene School Facilities Act of 1998 (Senate Bill 50)

The "Leroy F. Greene School Facilities Act of 1998," also known as Senate Bill No. 50 or SB 50 (Chapter 407, Statutes of 1998), governs a school district's authority to levy school impact fees. This comprehensive legislation, together with the $9.2 billion education bond act approved by the voters in November 1998 known as "Proposition 1A", reformed methods of school construction financing in California. SB 50 instituted a new school facility program by which school districts can apply for state construction and modernization funds. It imposed limitations on the power of cities and counties to require mitigation of school facilities impacts as a condition of approving new development and provided the authority for school districts to levy fees at three different levels:

- **Level I** fees are the current statutory fees allowed under Education Code 17620. This code section provides the basic authority for school districts to levy a fee against residential and commercial construction for the purpose of funding school construction or reconstruction of facilities. These fees vary by district for residential construction and commercial construction and are increased biannually.
- **Level II** fees are outlined in Government Code Section 65995.5, allowing school districts to impose a higher fee on residential construction if certain conditions are met. These conditions include having a substantial percentage of students on multi-track year-round scheduling, having an assumed debt equal to 15–30 percent of the district's bonding

capacity (percentage is based on revenue sources for repayment), having at least 20 percent of the district's teaching stations housed in relocatable classrooms, and having placed a local bond on the ballot in the past four years which received at least 50 percent plus one of the votes cast. A Facility Needs Assessment must demonstrate the need for new school facilities for unhoused pupils is attributable to projected enrollment growth from the construction of new residential units over the next five years.

- **Level III** fees are outlined in Government Code Section 655995.7. If State funding becomes unavailable, this code section authorizes a school district that has been approved to collect Level II fees to collect a higher fee on residential construction. This fee is equal to twice the amount of Level II fees. However, if a district eventually receives State funding, this excess fee may be reimbursed to the developers or subtracted from the amount of state funding.

Quimby Act

California Government Code Section 66477, Subdivision Map Act, referred to as the Quimby Act, permits local jurisdictions to require the dedication of land and/or the payment of in-lieu fees solely for park and recreation purposes. The required dedication and/or fees are based upon the residential density, parkland cost, and other factors. Land dedication and fees collected pursuant to the Quimby Act may be used for acquisition, improvement, and expansion of park, playground, and recreational facilities or the development of public school grounds.

LOCAL

City of Rancho Cordova General Plan

The City of Rancho Cordova General Plan contains the following goals, policies, and standards that are relevant to public services:

INFRASTRUCTURE, SERVICES, AND FINANCE ELEMENT

Goal ISF.2: Ensure the development of quality infrastructure to meet community needs at the time they are needed.

Policy ISF.2.1: Ensure the development of public infrastructure that meets the long-term needs of residents and ensure infrastructure is available at the time such facilities are needed.

Policy ISF.2.2: Coordinate with independent public service providers, including schools, parks and recreation, utility, transit, and other service districts, in developing service and financial planning strategies.

Policy ISF.2.3: Ensure that adequate funding is available for all infrastructure and public facilities, and make certain that the cost of improvements is equitably distributed.

Policy ISF.2.4: Ensure the development of public infrastructure that meets the long-term needs of residents and ensure infrastructure is available at the time such facilities are needed.

Goal ISF.3: Provide a full range of local services that meet local needs.

Policy ISF.3.1: Foster the provision of comprehensive services targeted to meet the needs of the City's growing population.

Policy ISF.3.2: Support enhanced library services for existing and future residents and employees that exceed regional and national standards.

Policy ISF.3.3: Foster the provision of comprehensive services targeted to meet the needs of the City's rowing population.

Goal ISF.4: Provide educational options that result in well educated children and adults in the City of Rancho Cordova.

Policy ISF.4.1: Encourage school districts to locate and site facilities in an integrated manner with the rest of the community.

SAFETY ELEMENT

Goal S.7: Design neighborhoods and buildings in a manner that prevents crime and provides security and safety for people and property.

Policy S.7.1: Use Crime Prevention Through Environmental Design (CPTED) principles in the design of projects and buildings.

Goal S.8: Maintain effective and community-oriented law enforcement.

Policy S.8.1: Monitor and review the level of police staffing provided in the City to ensure that sufficient staffing and resources are available to serve local needs.

Policy S.8.2: Develop law enforcement programs through community partnerships, which reduce, as well as prevent, crime.

Policy S.8.3: Plan and develop law enforcement facilities according to overall need and the distribution of growth within the City.

Policy S.8.4: Use education and crime prevention as integral parts of the practice of law enforcement.

Goal S.9: Reduce the probability of fire damage to all of the City's structures.

Policy S.9.1: Cooperate with the Sacramento Metropolitan Fire District (SMFD) to reduce fire hazards, assist in fire suppression, and ensure efficient emergency medical response.

Policy S.9.2: Provide infill development with adequate off-site improvements to meet onsite fire flow requirements.

Policy S.9.3: Consider establishing mitigation fees to fund adequate fire protection and emergency medical response facilities, if such fees are critical and necessary to meet the facility funding needs of SMFD and existing methods of financing are inadequate.

3.12.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the Project will have a significant impact on public services if it would result in:

Substantial adverse physical impacts associated with the provision of new or physically altered government facilities, and/or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:

- Fire Protection
- Police Protection
- Schools
- Parks
- Other public facilities

IMPACTS AND MITIGATION MEASURES

Impact 3.12-1: The Project is not anticipated to result in substantial adverse physical impacts associated with the provision of or need for new or physically altered police facilities (Less than Significant)

The Rancho Cordova Police Department would provide first-response service for the Project. New development in the City is responsible for the full cost of additional facilities and equipment necessary as a result of that development. The Project applicant would be required to comply with City Ordinance No. 13-2003, which levies a special tax on all taxable parcels in the Project area. This tax would be included in new homeowners' property taxes and would be used to pay for new facilities and equipment and the startup costs incurred to hire and train each of the new police officers necessary to serve Project development.

The Rancho Cordova Police Department has established guidelines to enhance law enforcement and emergency response. These guidelines include the use of design measures to increase the opportunity for residents and occupants of buildings to see into areas deemed as potential sites for crime. In addition, the City encourages the use of "Crime Prevention Through Environmental Design" principles, such as maximizing visibility of parking areas and building entrances, defining property lines and distinguishing private spaces from public spaces using landscape plantings,

gateway treatments, and fences, and prohibiting entry or access using window locks, dead bolts, and interior door hinges, in the design of residences and commercial buildings.

The Rancho Cordova Police Department reviewed the revised Project application materials. The Police Department's review did not identify any specific police department facility improvements that would be required to serve the Project, but did recommend specific Project design and access features and noted that, based on an estimate of 2.28 people per home, that the Project would require an additional 1.87 officers (Rancho Cordova Police Department, June 21, 2018). It is noted that the 2.28 people per home rate was provided in a letter regarding the Project from the Rancho Cordova Police Department on June 21, 2018. This rate differs from Chapter 2.0, Project Description, of this Draft EIR which estimates the Project may have a population of 4,319. This population would result in the Project requiring an additional 4.3 officers. The Project would not include development of any police department facilities. New or expanded facilities would not be required to serve the Project. Impact fees from new development are collected based upon projected impacts from each development. The adequacy of impact fees is reviewed on an annual basis to ensure that the fee is commensurate with the service. Payment of the applicable impact fees by the Project applicant, and ongoing revenues that would come from property taxes, sales taxes, and other revenues generated by the Project, would fund costs associated with police services.

The Project would be required to contribute to the funding of additional police facilities, services, and equipment necessary to serve the Project and would incorporate the Rancho Cordova Police Department guidelines into Project designs. However, the Project does not include development of any police department facilities and police department facilities are not anticipated to be constructed or expanded off-site in association with the Project. Therefore, the project's impacts associated with substantial adverse physical impacts related to the construction, provision, or need for police facilities would be ***less than significant***.

Impact 3.12-2: The Project is not anticipated to result in substantial adverse physical impacts associated with the provision of or need for new or physically altered fire protection facilities (Less than Significant)

Funding for fire services and facilities resulting from new construction is facilitated through SMFD's Capital Fire Facilities Fee Schedule. The fee is used exclusively to defray costs associated with property acquisition, site preparation, design, construction, and equipping new fire stations that are required to serve new development. Additional funds are generated by ambulance transport fees and service fees (mostly from fire prevention plan checking charges).

SMFD outlines fire prevention standards to be incorporated into new residential and commercial development. These standards include access arrangements, fire hydrant placement, fire flow availability and requirements, and plan submittal requirements. SMFD also requires installation of automatic fire sprinklers in all new commercial construction that exceeds 3,599 square feet and some residential properties exceeding 2,999 square feet. In addition, as required by the City

General Plan, new commercial development, industrial development, and multifamily residential development with five or more units must incorporate on-site fire suppression systems into Project designs. On-site equipment and design would be reviewed and approved by SMFD prior to issuance of building permits. SMFD reviewed the Project application and revised Project application materials. SMFD's review did not identify any specific fire protection facility improvements that would be required to serve the Project, but did identify specific Project design and access requirements necessary for SMFD to serve the Project (SMFD, February 21, 2018; SMFD, June 21, 2018); these requirements have been incorporated into the Project design.

The Project would not include development of any fire department facilities. New or expanded facilities would not be required to serve the Project. Impact fees from new development are collected based upon projected impacts from each development. The adequacy of impact fees is reviewed on an annual basis to ensure that the fee is commensurate with the service. Payment of the applicable impact fees by the Project applicant, and ongoing revenues that would come from property taxes, sales taxes, and other revenues generated by the Project, would fund costs associated with fire services.

The Project would be required to contribute to the funding of additional fire protection facilities, services, and equipment necessary to serve the Project and would incorporate SMFD requirements into Project designs. However, the Project does not include development of any fire protection facilities and fire protection department facilities are not anticipated to be constructed or expanded off-site as a result of the Project. Therefore, the Project's impacts associated with substantial adverse physical impacts related to the construction, provision, or need for fire protection facilities would be ***less than significant***.

Impact 3.12-3: The Project has the potential to require the new or physically altered school facilities, the construction of which may cause substantial adverse physical environmental impacts (Less than Significant)

The Project site is within the boundaries of EGUSD. The Project includes residential units that would directly increase the student population in the area. The Project may indirectly increase the number of persons in the area as a result of employment potential; however, it is not possible to determine at this time whether employment opportunities would be utilized by the existing population with existing students in the schools or if employees would be recruited from outside the region, bringing new students to Rancho Cordova.

The Project would include the development of up to 1,725 residential units, including 737 age restricted single-family units, 735 non-age restricted single-family units, and up to 253 multifamily units (38 of which would be age-restricted. The Project's non-age-restricted residential component would directly cause population growth and increase enrollment in the local school district. Table

3.12-3 shows the anticipated number of elementary, middle, and high school students that would be generated by the non-age restricted portion of the Project.

TABLE 3.12-3: ELK GROVE UNIFIED SCHOOL DISTRICT STUDENT GENERATION (NON-AGE-RESTRICTED UNITS)

PROPOSED LAND USE	*GENERATION RATE*	*PROJECTED NUMBER OF STUDENTS*
ELEMENTARY SCHOOL		
735 Single-Family Dwellings	0.3952 students/unit	290
215 Multi-Family Dwellings	0.2405 students/unit	51
	Subtotal	*341*
MIDDLE SCHOOL		
735 Single-Family Dwellings	0.1111 students/unit	81
215 Multi-Family Dwellings	0.0649 students/unit	13
	Subtotal	*94*
HIGH SCHOOL		
735 Single-Family Dwellings	0.2045 students/unit	150
215 Multi-Family Dwellings	0.1297 students/unit	27
	Subtotal	*177*
	Total	**612**

SOURCE: ELK GROVE UNIFIED SCHOOL DISTRICT DEVELOPMENT FEE JUSTIFICATION STUDY / SCHOOL FACILITIES NEEDS ANALYSIS, 2018.

Utilizing the student generation rates provided in the EGUSD Development Fee Justification Study / School Facilities Needs Analysis, the proposed non-age restricted units would be expected to generate approximately up to 341 new elementary school students, up to 94 new middle school students, and up to 177 new high school students, for a total of 612 students generated at the EGUSD.

As required by state law, the Project applicant would pay the state-mandated school impact fees to EGUSD. As of August 2018, Level II fees for residential development are $5.65 per square foot and $0.61 per square foot for commercial/industrial construction in the EGUSD boundaries. The City would determine the assessable square footage that would be subject to the fee at the time of development. The California Legislature has declared that the school impact fee is deemed to be full and adequate mitigation under CEQA (California Government Code Section 65996). The Project would not include development of any school facilities. The EGUSD Facilities Master Plan indicates that inadequacies of its facilities will be mitigated by adding facilities, a change in program, or adjustments to enrollment. It is anticipated that facility construction and expansion may result in environmental impacts associated with aesthetics, air quality, biological resources, cultural and tribal resources, energy, geology and soils, greenhouse gases, hazards and hazardous materials, hydrology and water quality, noise, public services, recreation, transportation and circulation, and utilities, depending on the location and facility design. However, while new or expanded future facilities that may serve the Project and other future projects in the area may result in environmental impacts associated with construction or expansion, the specific facilities to serve the Project are not known and greater specificity regarding impacts cannot be provided at this time. As previously noted, the California Legislature has declared that the school impact fee is deemed to be full and adequate mitigation under CEQA (California Government Code Section

65996). Therefore, the Project's payment of the required school impact fee would reduce the Project's impacts associated with school facilities to ***less than significant***.

Impact 3.12-4: The Project has the potential to require the construction of park and recreational facilities which may cause substantial adverse physical environmental impacts (Less than Significant)

The Project would directly increase the number of persons in the area as a result of employment potential, and residential uses. The Project includes up to 1,725 residential units, including 737 age restricted single-family units, 735 non-age restricted single-family units, and up to 253 multifamily units (38 of which would be age-restricted). The Project is projected to increase the population by an estimated 4,013 residents, based on the number of units planned for development. However, for the purposes of collecting fees to mitigate for increase park demands (Quimby Act), the California Government Code Section 66477 states: *The amount of land dedicated or fees paid shall be based upon the residential density, which shall be determined on the basis of the approved or conditionally approved tentative map or parcel map and the average number of persons per household. There shall be a rebuttable presumption that the average number of persons per household by units in a structure is the same as that disclosed by the most recent available federal census or a census taken pursuant to Chapter 17 (commencing with Section 40200) of Part 2 of Division 3 of Title 4.* The Project's parkland dedication and open space dedication requirements, calculated by the City consistent with Municipal Code Chapter 22.40, are outlined in Table 3.12-4.

TABLE 3.12-4: PARKLAND DEDICATION REQUIREMENTS

DESIGNATION	*UNITS*	*QUIMBY PPH[1]*	*POPULATION*	*QUIMBY DEDICATION RATE*	*REQUIRED DEDICATION*
Market-rate Single Family Units	735	2.95	2,168	5 acres/ 1,000 persons	10.840
Market-rate Multi-family Units	215	1.54	331	5 acres/ 1,000 persons	1.660
Age-restricted Senior Single Family Units	737	2.00	1,474	5 acres/ 1,000 persons	7.370
Age-restricted Senior Multi-family Units	38	1.04	40	5 acres/ 1,000 persons	0.198
Totals	*1,725*	--	*4,013*	--	*20.060*

NOTES: [1] QUIMBY POPULATION CALCULATIONS ARE PERFORMED CONSISTENT WITH MUNICIPAL CODE CHAPTER 22.40. DUE TO THE PRESCRIBED POPULATION PER HOUSEHOLD FACTORS, THESE CALCULATIONS DIFFER FROM THE POPULATION ESTIMATES FOR THE PROJECT IN CHAPTER 2.
SOURCE: CITY OF RANCHO CORDOVA, 2019

As shown in Table 3.12-4, the Project would be required to dedicate 20.06 acres of parkland and 4.014 acres of open space. Park and recreation facilities totaling 20.3075 acres would be provided by the Project. In addition to these facilities, the Project would dedicate approximately 4.4 acres of public open space (portions of Lots R, S, Q and/or Lot U) to complement the active recreation uses associated with the 10.78-acre public park on Lot D and approximately 2.5 miles of public trails would be developed throughout the Project site. Within the age-restricted portion of the Project, approximately 7.17 acres would be dedicated for recreational purposes. The recreation center

(4.19 net acres) would include a clubhouse serving as a recreation, community gathering, activity, and information hub for residents. A separate 1.58-acre community garden (Lot B) and a 1.4-acre linear park would be provided within the age-restricted community. In addition, multiple paseos would be provided throughout the age-restricted community to provide connectivity and off-road walkability. In addition to the proposed park lots, the Project would provide parks and recreation facilities on approximately 0.2575 acres within Village 23 to serve the proposed multifamily use.

In fall 2005, CRPD adopted new standards that include a requirement of 5 acres of parkland per 1,000 residents, and the addition of performance standards for specific types of open space. The addition of 19.24 acres of park and recreation facilities space falls short of the five acre per 1,000 goal by 0.23 acres. However, the passive uses associated with Lot S and the public walking trails would result in adequate parkland to meet the standards. New or expanded off-site park facilities would not be required to serve the Project. The environmental impacts of development of the proposed on-site park and recreation facilities are addressed as part of the proposed Project and are analyzed throughout this EIR. Development of the park sites is anticipated as part of the Project and is included in the impact discussions associated with development of the Project site included in this Draft EIR, including analysis of impacts associated with aesthetics, air quality, biological resources, cultural and tribal cultural resources, geology and soils, greenhouse gases and energy, hazards and hazardous materials, hydrology and water quality, land use and planning, population and housing, public services and recreation, transportation and circulation, and utilities. For example, as shown in Figure 2.0-4 in Chapter 2.0, a 10.96-acre park site would be located in the north-central portion of the Project site. This large park area may include recreational fields. The potential lighting and noise impacts resulting from operation of this and other proposed parks are discussed in Section 3.1, Aesthetics, and Section 3.10, Noise and Vibration, of this EIR. Potential adverse environmental impacts associated with development of the Project, including the proposed park sites, are discussed in Sections 3.1 through 3.14 and 4.0 of this Draft EIR. The Project does not propose any off-site parks and no expansion or development of off-site parks is anticipated as part of the Project.

The City collects impact fees for parks from new development based upon projected impacts from the development. The Project applicant would be required to pay the in-lieu parkland fee, dedicate land for parkland uses, or provide a combination of dedication and in-lieu fees, as determined by the City. The Project is not anticipated to result in any significant environmental impacts associated with park and recreation facilities, beyond those discussed in Sections 3.1 through 3.14 and 4.0 of this Draft EIR, therefore, this impact is considered ***less than significant***.

Impact 3.12-5: The Project would not increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated (Less than Significant)

As stated previously, the Project will directly, and may indirectly increase the number of persons in the area as a result of employment potential and visitor-serving uses. It is not anticipated that the

Project would result in a significant increase in the use of existing neighborhood and regional parks or other recreational facilities from people associated with the employment potential and visitor-serving uses. The Project does, however, include extensive new recreational facilities for the community and residents, which offset any new demand for parks or recreational facilities that could result from the employment potential and residential uses and would reduce the Project's potential to result in substantial physical deterioration of existing parks and recreation facilities.

The Project would not significantly increase the use of an existing park, or other recreational facility such that any substantial physical deterioration of existing facilities would occur or be accelerated. As such, the Project would have a ***less-than-significan*t** impact relative to this topic.

Impact 3.12-6: The Project is not anticipated to result in substantial adverse physical impacts associated with the provision of or need for new or physically altered other public facilities (Less than Significant)

Sacramento County, as a regional government, provides countywide services, including public health, elections, and criminal prosecutions. The Project would increase demand for other public facilities within the City of Rancho Cordova, such as libraries and community buildings. However, given that the additional population increase associated with the Project is a small percentage of the population of the City as a whole, significant impacts due to increased demand on libraries and community facilities are not expected. Additionally, the Project includes a 21,000 square-foot community clubhouse in the age-restricted portion of the Project. The environmental impacts of construction of this clubhouse are addressed as part of the proposed Project and considered throughout this EIR. Overall, construction of other public or community facilities would not be warranted.

The Project will bring residents and could bring employees to the area which may require the use of other public services such as libraries, etc. The City collects impact fees from new development based upon projected impacts from each development, including impacts on other public services (i.e., libraries, community facilities, etc.). The City also reviews the adequacy of impact fees on an annual basis to ensure that the fee is commensurate with services provided. Payment of the applicable impact fees by the Project applicant, and ongoing revenues that would come from property taxes, sales taxes, and other revenues generated by the Project, would fund capital and labor costs associated with these other public services.

The Project would not trigger the need for new facilities or expansion of existing facilities associated with other public services and facilities, such as libraries and community buildings. Consequently, new or expanded facilities for other public services are not proposed at this time or required to serve the Project. The Project would not result in the need for new facilities for other public services, thus it will have a ***less-than-significant*** impact relative to this topic**.**

This section of the EIR analyzes the potential impacts of the Project on the surrounding transportation system including freeways, roadways, bicycle/pedestrian facilities, and transit facilities/services. This section identifies the significant impacts of the Project and recommends mitigation measures to lessen their significance. Information in this section is derived from the following:

- City of Rancho Cordova General Plan (adopted June 2006);
- Sacramento Regional Transit (RT) website (http://www.sacrt.com/);
- *Highway Capacity Manual* Transportation Research Board (2010);
- Memorandum RE: Jaeger Ranch Supplemental Traffic Analyses, Draft Traffic Impact Analysis Services (Kimley-Horn, February 2019);
- Memorandum RE: Jaeger Ranch Traffic Impact Study, Draft Other Considerations (Kimley-Horn, August 2018);
- Sacramento Area Council of Governments (SACOG) 2036 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS);
- Traffic Impact Analysis, Jaeger Ranch, City of Rancho Cordova, California (Kimley-Horn, August 2018);
- Memorandum RE: Jaeger Ranch Supplemental Traffic Analyses, Draft Trip Generation Memorandum (Kimley-Horn, June 2019); and
- *Trip Generation Manual, 9th Edition* (Institute of Transportation Engineers [ITE], 2012).

Comments were received during the public review period for the Notice of Preparation (NOP) regarding this topic from the following: County of Sacramento Department of Transportation (July 8, 2019) and Cordova Recreation & Park District (August 3, 2018). Each of the comments related to this topic is addressed within this section, and comments are included within Appendix A.

ANALYSIS METHODS

The traffic analysis was performed in accordance with the County of Sacramento's traffic study guidelines[1] and standards established by the Circulation Element of the City of Rancho Cordova's General Plan [2].

Level of Service Definitions

Analysis of transportation facility significant environmental impacts is based on the concept of Level of Service (LOS). The LOS of a facility is a qualitative measure used to describe operational conditions. LOS ranges from A (best), which represents minimal delay, to F (worst), which represents heavy delay and a facility that is operating at or near its functional capacity.

Intersection Analysis

LOS was determined using methods defined in the *Highway Capacity Manual* (HCM) *2010* and appropriate traffic analysis software. The HCM includes procedures for analyzing side-street stop

[1] *Traffic Impact Analysis Guidelines, July 2004*, County of Sacramento.
[2] *City of Rancho Cordova General Plan: Circulation Element,* May 2015, City of Rancho Cordova

controlled (SSSC), all-way stop controlled (AWSC), and signalized intersections. The SSSC procedure defines LOS as a function of average control delay for each minor street approach movement. The AWSC and signalized intersection procedure defines LOS as a function of average control delay for the intersection as a whole. Table 3.13-1 presents intersection LOS definitions as defined in the HCM.

TABLE 3.13-1: INTERSECTION LOS CRITERIA

LOS	DESCRIPTION	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)	
		SIGNALIZED INTERSECTIONS	UNSIGNALIZED INTERSECTIONS
A	Little or no delays	≤ 10.0	≤ 10.0
B	Short traffic delays	> 10.0 TO 20.0	> 10.0 to 15.0
C	Average traffic delays	> 20.0 TO 35.0	> 15.0 to 25.0
D	Long traffic delays	> 35.0 TO 55.0	> 25.0 to 35.0
E	Very long traffic delays	> 55.0 TO 80.0	> 35.0 to 50.0
F	Extreme traffic delays with intersection capacity exceeded	> 80.0	> 50.0

SOURCE: HIGHWAY CAPACITY MANUAL (TRANSPORTATION RESEARCH BOARD, 2010).

Roadway Segment Analysis

The analysis of roadway segments involves the comparison of daily segment volumes to the LOS criteria provided in the County's traffic impact analysis guidelines. The criteria provide maximum volumes for given service levels for various facility types. Table 3.13-2 replicates the County's roadway segment LOS criteria.

TABLE 3.13-2: ROADWAY SEGMENT LOS CRITERIA

FACILITY TYPE	# LANES	MAXIMUM VOLUME FOR GIVEN LOS				
		A	B	C	D	E
Residential	2	600	1,200	2,000	3,000	4,500
Residential Collector w/ Frontage	2	1,600	3,200	4,800	6,400	8,000
Residential Collector w/o Frontage	2	6,000	7,000	8,000	9,000	10,000
Arterial, Low Access Control	2	9,000	10,500	12,000	13,500	15,000
	4	18,000	21,000	24,000	27,000	30,000
	6	27,000	31,500	36,000	40,500	45,000
Arterial, Moderate Access Control	2	10,800	12,600	14,400	16,200	18,000
	4	21,600	25,200	28,800	32,400	36,000
	6	32,400	37,800	43,200	48,600	54,000
Arterial, High Access Control	2	12,000	14,000	16,000	18,000	20,000
	4	24,000	28,000	32,000	36,000	40,000
	6	36,000	42,000	48,000	54,000	60,000
Rural, 2-lane highway	2	2,400	4,800	7,900	13,500	22,900
Rural, 2-lane road, 24'-36' of pavement, paved shoulders	2	2,200	4,300	7,100	12,200	20,000
Rural, 2-lane road, 24'-36' of pavement, no shoulders	2	1,800	3,600	5,900	10,100	17,000

SOURCE: TRAFFIC IMPACT ANALYSIS GUIDELINES, TABLE 2, COUNTY OF SACRAMENTO DEPARTMENT OF TRANSPORTATION, JULY 2004.

DATA COLLECTION

To establish existing conditions, new traffic counts were collected for the study intersections and roadway segments. Twenty-seven (27) new weekday AM (7:00 to 9:00 AM) and PM (4:00 to 6:00 PM) peak-period intersection turning movement traffic counts were collected on September 28, 2017, with amendments in December 2018. Twenty-nine (29) new roadway segment counts were conducted on September 28, 2017.

Existing (2017) peak hour turn movement volumes are presented in Figure 3.13-3, and the traffic count data sheets are provided in Appendix A of Appendix I.1. Analysis worksheets for this scenario are provided in Appendix B of Appendix I.1.

3.13.1 ENVIRONMENTAL SETTING

PROJECT LOCATION

The Project site consists of approximately 530 acres located in the City of Rancho Cordova city limits. The Project site is bound by existing single-family residential uses and Douglas Road to the north, vacant land and Grant Line Road to the east, vacant land and Kiefer Boulevard to the south, and Rancho Cordova Parkway, single family residential, and vacant land on the west.

Rancho Cordova Parkway provides access to the site from south of Chrysanthy Boulevard. Rancho Cordova Parkway is currently paved north of Chrysanthy Boulevard, but is not paved along the Project frontage. The Project location, study intersections, and study segments are depicted in Figure 3.13-1. Figure 3.13-2 illustrates the existing study intersections facilities, traffic control, and lane configurations.

PROJECT AREA ROADWAYS

The following are descriptions of the primary roadways in the vicinity of the Project.

United States Route 50 (US-50) is an east-west interstate facility located approximately five-miles north of the Project. US-50 connects Rancho Cordova to Sacramento to the west and El Dorado County to the east. Primary access to the Project site from US-50 is provided at the Sunrise Boulevard, Zinfandel Drive, and Mather Field Road interchanges. Near Zinfandel Drive, US-50 carries approximately 170,000 vehicles per day[3] with five lanes in each direction.

Jackson Road (State Route [SR] 16) is an expressway connecting Amador County and Sacramento County located along the southern edge of Rancho Cordova's city limits. Jackson Road connects with US-50 west of the Project site. South of the Project site, between Sunrise Boulevard and Grant Line Road, Jackson Road carries approximately 13,000 vehicles per day.

Sunrise Boulevard is a north-south arterial which connects the Project site to north Rancho Cordova and Placer County.

[3] Caltrans Traffic Counts, 2015. http://www.dot.ca.gov/trafficops/census/

Zinfandel Drive is a north-south arterial which connects the Project site to US-50, as well as the commercial, industrial, and residential areas northwest of the Project site.

Chrysanthy Boulevard is a local roadway adjacent to and through the Project site. The Project would include construction of the segment of Chrysanthy Boulevard from Rancho Cordova Parkway/Jaeger Road to the eastern extent of the Project site. Traffic lights will be constructed at intersections within the Project as deemed necessary.

Rancho Cordova Parkway/Jaeger Road is a local roadway adjacent to the western edge of the Project site. The Project is required to widen Rancho Cordova Parkway along the Project extents from two to four lanes.

STUDY FACILITIES

The following transportation facilities are included in this evaluation:

Existing (2017) Intersections

1. Jackson Rd/SR-16 @ Bradshaw Rd
2. Jackson Rd/SR-16 @ Excelsior Rd
3. Jackson Rd/SR-16 @ Eagles Nest Rd
4. Jackson Rd/SR-16 @ Sunrise Blvd
5. Jackson Rd/SR-16 @ Grant Line Rd
6. Rancho Cordova Pkwy @ Chrysanthy Blvd
7. Florin Rd @ Sunrise Blvd
8. Grant Line Rd @ Kiefer Blvd
9. Grant Line Rd @ Sunrise Blvd
10. Douglas Rd @ Zinfandel Dr
11. Douglas Rd @ Sunrise Blvd
12. Douglas Rd @ Grant Line Rd
13. Mather Field Rd @ Folsom Blvd
14. Mather Field Rd @ US-50 Westbound (WB) Ramps
15. Mather Field Rd @ US-50 Eastbound (EB) Ramps
16. Mather Field Rd @ International Dr
17. Zinfandel Dr @ International Dr
18. Zinfandel Dr @ White Rock Rd
19. Zinfandel Dr @ US-50 EB Ramps
20. Zinfandel Dr @ US-50 WB Ramps
21. Sunrise Blvd @ White Rock Rd
22. Sunrise Blvd @ Folsom Blvd
23. Sunrise Blvd @ US-50 EB Ramps
24. Sunrise Blvd @ US-50 WB Ramps
25. Sunrise Blvd @ Zinfandel Dr
26. White Rock Rd @ Grant Line Rd

27. White Rock Rd @ Prairie City Rd

Additional Cumulative (2040) Intersections

28. Rancho Cordova Pkwy @ Folsom Blvd
29. Rancho Cordova Pkwy @ White Rock Rd
30. Rancho Cordova Pkwy @ Rio Del Oro Pkwy
31. Rancho Cordova Pkwy @ Douglas Rd
32. Rancho Cordova Pkwy @ Kiefer Blvd
33. Rancho Cordova Pkwy @ Grant Line Rd
34. Americanos Blvd @ International Dr
35. Americanos Blvd @ Centennial Dr
36. Americanos Blvd @ Douglas Rd
37. Americanos Blvd @ Chrysanthy Blvd
38. Americanos Blvd @ Kiefer Blvd
39. Chrysanthy Blvd @ Sunrise Blvd
40. Chrysanthy Blvd @ Grant Line Rd

Existing (2017) Roadway Segments

1. Jackson Rd/SR-16 between Bradshaw Rd and Excelsior Rd
2. Jackson Rd/SR-16 between Excelsior Rd and Eagles Nest Rd
3. Jackson Rd/SR-16 between Eagles Net Rd and Sunrise Blvd
4. Jackson Rd/SR-16 between Sunrise Blvd and Grant Line Rd
5. Excelsior Rd between Jackson Rd/SR-16 and Kiefer Blvd
6. Kiefer Blvd between Grant Line Rd and Jackson Rd/SR-16
7. International Dr between Zinfandel Dr and Sunrise Blvd
8. Mather Blvd between Femoyer St and Douglas Rd
9. Douglas Rd between Mather Blvd and Sunrise Blvd
10. Douglas Rd between Sunrise Blvd and Grant Line Rd
11. White Rock Rd between Zinfandel Dr and Sunrise Blvd
12. White Rock Rd between Sunrise Blvd and Grant Line Rd
13. White Rock Rd between Grant Line Rd and Prairie City Rd
14. Mather Field Rd between Folsom Blvd and US-50 WB Ramps
15. Mather Field Rd between US-50 WB Ramps and US-50 EB Ramps
16. Mather Field Rd between US-50 EB Ramps and International Dr
17. Zinfandel Dr between Folsom Blvd and US-50 Westbound Ramps
18. Zinfandel Dr between US-50 EB Ramps and White Rock Rd
19. Zinfandel Dr between White Rock Rd and International Dr
20. Zinfandel Dr between International Dr and Douglas Rd
21. Sunrise Blvd between US-50 WB Ramps and US-50 EB Ramps
22. Sunrise Blvd between US-50 EB Ramps to Folsom Blvd
23. Sunrise Blvd between Folsom Blvd and White Rock Rd

24. Sunrise Blvd between White Rock Rd and Douglas Rd
25. Sunrise Blvd between Douglas Rd and Jackson Rd/SR-16
26. Sunrise Blvd between Jackson Rd/SR-16 and Grant Line Rd
27. Grant Line Rd between White Rock Rd and Douglas Rd
28. Grant Line Rd between Douglas Rd and Jackson Rd/SR-16
29. Grant Line Rd between Jackson Rd/SR-16 and Sunrise Blvd

Additional Cumulative (2040) Roadway Segments

30. Kiefer Blvd between Eagles Nest Rd and Sunrise Blvd
31. Kiefer Blvd between Sunrise Blvd and Rancho Cordova Pkwy
32. Kiefer Blvd between Rancho Cordova Blvd and Americanos Blvd
33. Kiefer Blvd between Americanos Blvd and Grant Line Rd
34. Chrysanthy Blvd between Sunrise Blvd and Rancho Cordova Pkwy
35. Chrysanthy Blvd between Rancho Cordova Pkwy and Americanos Blvd (Within Project)
36. Chrysanthy Blvd between Americanos Blvd and Grant Line Rd
37. Rancho Cordova Pkwy between Folsom Blvd and White Rock Rd
38. Rancho Cordova Pkwy between White Rock Rd and Rio Del Oro Pkwy
39. Rancho Cordova Pkwy between Rio Del Oro Pkwy and Douglas Rd
40. Rancho Cordova Pkwy between Douglas Rd and Chrysanthy Blvd
41. Rancho Cordova Pkwy between Chrysanthy Blvd and Kiefer Blvd
42. Rancho Cordova Pkwy between Kiefer Blvd and Grant Line Rd
43. Americanos Blvd between International Dr and Centennial Dr
44. Americanos Blvd between Centennial Dr and Douglas Rd
45. Americanos Blvd between Douglas Rd and Chrysanthy Blvd
46. Americanos Blvd between Chrysanthy Blvd and Kiefer Blvd

EXISTING PEDESTRIAN AND BICYCLE FACILITIES

This section describes the existing pedestrian and bicycle facilities in the study area.

Pedestrian Facilities

The City of Rancho Cordova has an extensive system of multi-use pathways, sidewalks, and crosswalks available for use by pedestrians. Pedestrian facilities do not exist along the east side of Rancho Cordova Parkway along the Project frontage as this area has not been developed. However, sidewalks exist along the west side of Rancho Cordova Parkway along nearly the entire Project frontage. Sidewalks have not yet been constructed for approximately 0.11 miles of the western Project frontage (located at the northwestern corner of the Project site) as this portion of Rancho Cordova Parkway has not yet been constructed.

Additionally, pedestrian facilities are located along the roadways of the adjacent residential subdivisions to the north and west. Separated pedestrian paths are located on the east side of

Sunrise Boulevard, which is located west of the Project site. Similarly, separated pedestrian paths are located on the south side of Douglas Road, which is located north of the Project site.

BICYCLE FACILITIES

The following types of bicycle facilities exist within the City of Rancho Cordova:

- Shared-use paths (Class I) – are paved trails that are separated from roadways, and allow for shared use by both cyclists and pedestrians.
- On-street bike lanes (Class II) – are designated for use by bicycles by striping, pavement legends, and signs.
- On-street bike routes (Class III) – are designated by signage for shared bicycle use with vehicles but do not include any additional pavement width.

Class II bike lanes are located along both sides of Rancho Cordova Parkway along the Project frontage. Bicycle facilities have not yet been constructed for approximately 0.11 miles of the western Project frontage (located at the northwestern corner of the Project site) as this portion of Rancho Cordova Parkway has not yet been constructed.

Additionally, Class III bike routes are located along the roadways of the adjacent residential subdivisions to the north and west. Class II bike lanes are located on both sides of Sunrise Boulevard and Douglas Road in the Project vicinity.

TRANSIT SERVICE

Transit service in the City of Rancho Cordova is provided by Sacramento Regional Transit (RT) (local) and Rancho CordoVan (paratransit).

According to the SacRT website (http://www.sacrt.com/), the following bus routes exist in the study area: 1, 21, 22, 23, 24, 25, 28, 29, 72, 74, 75, 80, 82, 93, 95, 103, and 109. Additionally, the SacRT Gold Line light rail route follows US-50 in the City.

The Rancho CordoVan currently operates three routes that serve the Villages of Zinfandel (commonly known as Stone Creek), Anatolia neighborhoods, Kavala Ranch, and Sunridge Park. These routes operate Monday through Friday in the mornings and evenings to provide access to light rail at the Zinfandel RT Light Rail Station.

EXISTING (2017) CONDITION OPERATIONS

Intersections

Table 3.13-3 presents the peak hour intersection operating conditions for this analysis scenario. As indicated in the table, the study intersections operate from LOS A to LOS F during the AM and PM peak hours.

TABLE 3.13-3: EXISTING (2017) INTERSECTION LOS

LOCATION	CONTROL	EXISTING (2017)			
		AM PEAK HOUR		PM PEAK HOUR	
		DELAY (SECS)	LOS	DELAY (SECS)	LOS
1. Jackson Rd/SR-16 @ Bradshaw Rd	Signal	**122.2**	**F**	**79.1**	**F**
2. Jackson Rd/SR-16 @ Excelsior Rd	Signal	74.1	E	51.8	D
3. Jackson Rd/SR-16 @ Eagles Nest Rd	SSSC	**17.2 (89.1 NB)**	**F**	**20.1 (253.1 NB)**	**F**
4. Jackson Rd/SR-16 @ Sunrise Rd	Signal	66.0	E	44.3	D
5. Jackson Rd/SR-16 @ Grant Line Rd	Signal	**113.8**	**F**	**136.4**	**F**
6. Rancho Cordova Pkwy @ Chrysanthy Blvd	Signal	Does Not Exist			
7. Florin Rd @ Sunrise Blvd	Signal	9.5	A	10.6	B
8. Grant Line Rd @ Kiefer Blvd	Signal	15.2	C	27.2	D
9. Grant Line Rd @ Sunrise Blvd	Signal	**113.1**	**F**	52.1	D
10. Douglas Rd @ Zinfandel Dr	Signal	44.3	D	19.1	B
11. Douglas Rd @ Sunrise Blvd	Signal	28.4	C	41.5	D
12. Douglas Rd @ Grant Line Rd	Signal	12.0	B	15.6	B
13. Mather Field Rd @ Folsom Blvd	Signal	27.5	C	51.7	D
14. Mather Field Rd @ US-50 WB Ramps	Signal	**142.9**	**F**	22.1	C
15. Mather Field Rd @ US-50 EB Ramps	Signal	53.5	D	24.3	C
16. Mather Field Rd @ International Dr	Signal	10.9	B	23.9	C
17. Zinfandel Dr @ International Dr	Signal	22.4	C	32.9	C
18. Zinfandel Dr @ White Rock Rd	Signal	33.4	C	39.1	D
19. Zinfandel Dr @ US-50 EB Ramps	Signal	**85.1**	**F**	23.2	C
20. Zinfandel Dr @ US-50 WB Ramps	Signal	29.7	C	18.1	B
21. Sunrise Blvd @ White Rock Rd	Signal	35.7	D	**56.5**	**E**
22. Sunrise Blvd @ Folsom Blvd	Signal	36.6	D	41.5	D
23. Sunrise Blvd @ US-50 EB Ramps	Signal	23.9	C	23.0	C
24. Sunrise Blvd @ US-50 WB Ramps	Signal	15.3	B	17.8	B
25. Sunrise Blvd @ Zinfandel Dr	Signal	**112.8**	**F**	**58.6**	**E**
26. White Rock Rd @ Grant Line Rd	Signal	6.1	A	13.4	B
27. White Rock Rd @ Prairie City Rd	Signal	61.5	E	59.4	E

NOTES: ***BOLD*** *REPRESENTS UNACCEPTABLE OPERATIONS. AWSC = ALL WAY STOP CONTROL. SSSC = SIDE STREET STOP CONTROL.*

SOURCE: KIMLEY-HORN, 2018.

Roadway Segments

Table 3.13-4 presents the peak hour intersection operating conditions for this analysis scenario. As indicated in the table, the study roadway segments operate from LOS A to LOS F.

TABLE 3.13-4: EXISTING (2017) ROADWAY SEGMENT LOS

ROADWAY SEGMENT	EXISTING (2017)				
	# LANES	FACILITY TYPE	DAILY VOL.	V/C RATIO	LOS
1. Jackson Rd/SR-16: Bradshaw Rd and Excelsior Rd	2	Arterial M	12,341	0.69	B
2. Jackson Rd/SR-16: Excelsior Rd and Eagles Nest Rd	2	Rural Hwy	11,760	0.51	D
3. Jackson Rd/SR-16: Eagles Net Rd and Sunrise Blvd	2	Rural Hwy	11,806	0.52	D
4. Jackson Rd/SR-16: Sunrise Blvd and Grant Line Rd	2	Rural Hwy	14,980	**0.65**	**E**
5. Excelsior Rd: Jackson Rd/SR-16 and Kiefer Blvd	2	Arterial M	4,552	0.25	A
6. Kiefer Blvd: Grant Line Rd and Jackson Rd/SR-16	2	Rural S	941	0.05	A
7. International Dr: Zinfandel Dr and Sunrise Blvd	6	Arterial M	11,246	0.21	A
8. Mather Blvd: Femoyer St and Douglas Rd	2	Arterial M	5,540	0.31	A
9. Douglas Rd: Mather Blvd and Sunrise Blvd	2	Arterial M	12,404	0.69	B
10. Douglas Rd: Sunrise Blvd and Grant Line Rd	2	Arterial M	7,510	0.42	A
11. White Rock Rd: Zinfandel Dr and Sunrise Blvd	6	Arterial M	15,943	0.30	A
12. White Rock Rd: Sunrise Blvd and Grant Line Rd	2	Rural NS	3,533	0.21	B
13. White Rock Rd: Grant Line Rd and Prairie City Rd	4	Arterial M	15,436	0.43	A
14. Mather Field Rd: Folsom Blvd and US-50 WB Ramps	4	Arterial M	22,543	0.63	B
15. Mather Field Rd: US-50 WB Ramps and US-50 EB Ramps	4	Arterial M	35,028	**0.97**	**E**
16. Mather Field Rd: US-50 EB Ramps and International Dr	6	Arterial M	42,228	0.78	C
17. Zinfandel Dr: Folsom Blvd and US-50 WB Ramps	4	Arterial M	22,380	0.62	B
18. Zinfandel Dr: US-50 EB Ramps and White Rock Rd	6	Arterial M	50,515	**0.94**	**E**
19. Zinfandel Dr: White Rock Rd and International Dr	6	Arterial M	23,685	0.44	A
20. Zinfandel Dr: International Dr and Douglas Rd	4	Arterial M	13,705	0.38	A
21. Sunrise Blvd: US-50 WB Ramps and US-50 EB Ramps	6	Arterial M	67,276	**1.25**	**F**
22. Sunrise Blvd: US-50 EB Ramps to Folsom Blvd	6	Arterial M	53,504	**0.99**	**E**
23. Sunrise Blvd: Folsom Blvd and White Rock Rd	6	Arterial M	41,238	0.76	C
24. Sunrise Blvd: White Rock Rd and Douglas Rd	6	Arterial M	30,941	0.57	A
25. Sunrise Blvd: Douglas Rd and Jackson Rd/SR-16	4	Arterial M	22,635	0.63	B
26. Sunrise Blvd: Jackson Rd/SR-16 and Grant Line Rd	2	Rural S	11,748	0.59	D
27. Grant Line Rd: White Rock Rd and Douglas Rd	2	Rural NS	12,804	**0.75**	**E**
28. Grant Line Rd: Douglas Rd and Jackson Rd/SR-16	2	Rural S	8,524	0.43	D
29. Grant Line Rd: Jackson Rd/SR-16 and Sunrise Blvd	2	Rural S	7,745	0.39	D

*NOTE: **BOLD** REPRESENTS UNACCEPTABLE OPERATIONS.*
SOURCE: KIMLEY-HORN, 2018.

3.13.2 REGULATORY SETTING

Existing transportation polices, laws, and regulations that would apply to the Project are summarized below. This information provides a context for the impact discussion related to the

Project's consistency with applicable regulatory conditions and development of significance criteria for evaluating Project impacts.

SACOG MTP/SCS

SACOG is responsible for the preparation of, and updates to, the 2016 MTP/SCS and the corresponding Metropolitan Transportation Improvement Program (MTIP) for the six-county Sacramento region. The MTP/SCS provides a 20-year transportation vision and corresponding list of projects. The MTIP identifies short-term projects (7-year horizon) in more detail. The current MTP/SCS was adopted by the SACOG board in 2016.

Senate Bill 743

Senate Bill 743, passed in 2013, requires the California Governor's Office of Planning and Research (OPR) to develop new guidelines that address traffic metrics under CEQA. As stated in the legislation, upon adoption of the new guidelines, "automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to this division, except in locations specifically identified in the guidelines, if any."

In December 2018, after over five years of stakeholder-driven development through over 200 stakeholder meetings, public convenings, and other outreach events, the California Natural Resources Agency certified and adopted the CEQA Guidelines update package, including the Guidelines section implementing Senate Bill 743 (§ 15064.3). However, because the NOP for the Project was released in July 2018 and because lead agencies are not required to replace the LOS threshold until July 2020, this Draft EIR relies on the previous 2018 version of the CEQA Guidelines related to analysis of transportation impacts. As such, VMT analysis is not required or included in this section.

Sacramento County General Plan

The Circulation Element of the latest County of Sacramento General Plan includes the following relevant provisions:

> ***CI-9:*** *Plan and design the roadway system in a manner that meets Level of Service (LOS) D on rural roadways and LOS E on urban roadways, unless it is infeasible to implement project alternatives or mitigation measures that would achieve LOS D on rural roadways or LOS E on urban roadways. The urban areas are those areas within the Urban Service Boundary as shown in the Land Use Element of the Sacramento County General Plan. The areas outside the Urban Service Boundary are considered rural.*
>
> ***CI-35:*** *The applicant/developer of land development projects shall be responsible to install bicycle and pedestrian facilities in accordance with Sacramento County Improvement Standards and may be responsible to participate in the fair share funding of regional multi-use trails identified in the Sacramento County Bicycle Master Plan.*

Sacramento County's traffic study guidelines provide guidelines for the implementation of the General Plan provisions: "The County defines the minimum acceptable operation level for its roadways and intersections to be LOS D for rural areas and LOS E for urban areas. The urban areas are those areas within the Urban Service Boundary as shown in the Land Use Element of the Sacramento County General Plan. The areas outside the Urban Service Boundary are considered rural."

All of the Sacramento County study facilities are within the Urban Services Boundary. Therefore, LOS E is the minimum acceptable LOS for all County facilities.

Rancho Cordova General Plan

The Circulation Element of the Rancho Cordova's General Plan includes the following relevant provisions:

> ***Policy C.1.2****: Seek to maintain operations on all roadways and intersections at Level of Service D or better at all times, including peak travel times, unless maintaining this Level of Service would, in the City's judgment, be infeasible and/or conflict with the achievement of other goals. Congestion in excess of Level of Service D may be accepted in these cases, provided that provisions are made to improve traffic flow and/or promote non-vehicular transportation as part of a development project or a City-initiated project. Please see Policy C.1.3 for additional policy guidance related to this issue.*
>
> *Examples of system improvements which may be accepted when Level of Service D cannot be maintained include the following, where the improvement or funding is in excess of standard City requirements:*
>
> - *Development of on- or off-street bicycle or pedestrian circulation (not including sidewalks that are constructed as part of roadway improvements);*
> - *Providing or funding public transportation facilities or services;*
> - *Other features as determined appropriate by the City.*
>
> ***Policy C.1.3****: Recognize that regional traffic beyond the City's control, as well as circulation system decisions made prior to incorporation or by other agencies, will make it infeasible to achieve the City's desired Level of Service on all roadways. Subject development projects which affect these roadways to the provisions of Policy C.1.2 to provide offsetting improvements to the vehicular and/or non-vehicular transportation system*.

City of Rancho Cordova Pedestrian Master Plan

Adopted in 2011, the Pedestrian Master Plan strengthens the City's existing policy framework by providing specific information related to pedestrian infrastructure and demand, as well as updated policy language. Additionally, the Pedestrian Master Plan includes an implementation chapter that outlines the highest-priority pedestrian projects in Rancho Cordova and the estimated cost to complete them. The Pedestrian Master Plan addresses the overall state of the pedestrian network as well as an assessment of the level of effort needed to improve the network citywide.

The Pedestrian Master Plan includes the following goals:

> ***Goal 1:*** *Improve the pedestrian network to increase pedestrian activity in Rancho Cordova.*
>
> ***Goal 2:*** *Provide universally safe and equal access.*
>
> ***Goal 3:*** *Establish and enhance routes to school that will enable and encourage more students to safely walk to school.*
>
> ***Goal 4:*** *Develop pedestrian-supportive encouragement and enforcement programs.*
>
> ***Goal 5:*** *Pursue innovative funding sources and partnership opportunities to enhance pedestrian facilities, and provide education and encouragement opportunities.*

City of Rancho Cordova Bicycle Master Plan

Adopted in 2016, the Bicycle Master Plan provides a strategy for the development of a comprehensive bicycle transportation network, support facilities, and support education, encouragement, enforcement and evaluation programs. The Bicycle Master Plan documents what bicycling is like now in Rancho Cordova, reasons for improvements, and a strategy to make the City safer and more comfortable to bicycle for recreation and transportation for all ages and abilities.

The Bicycle Master Plan includes the following goals:

> ***Goal 1:*** *Develop a continuous, convenient, and family friendly bikeway network as described in the Bicycle Master Plan.*
>
> ***Goal 2:*** *Ensure new development extends the bicycle network to all neighborhoods and attractors.*
>
> ***Goal 3:*** *Ensure adequate support facilities throughout Rancho Cordova's bicycle network.*
>
> ***Goal 4:*** *Increase awareness if bicyclist safety and responsibility through education and enforcement of bicyclists and drivers.*
>
> ***Goal 5:*** *Eliminate all traffic fatalities and reduce the number of bicycle related injuries by 50 percent by 2027.*
>
> ***Goal 6:*** *Pursue innovative funding sources and partnership opportunities to enhance bicycle facilities, and provide education and encouragement opportunities.*
>
> ***Goal 7:*** *Increase the percentage of all trips made by bicyclists from 1.1 percent to 2.2 percent in Rancho Cordova by 2021.*
>
> ***Goal 8:*** *Establish Rancho Cordova as a destination for recreational bicycling through creation of a signature trail network and encouragement of bicycling and bicycling events.*

City of Rancho Cordova Transit Master Plan

Adopted in 2006, the purpose of the Transit Master Plan is to provide a multi-modal approach to support mobility as presented in the City of Rancho Cordova's General Plan. The City of Rancho Cordova Transit Master Plan is the first of several planning documents that are intended to detail the City's recently adopted General Plan. The Transit Master Plan proposes a system of city, neighborhood and regional services. The "Signature Service" will connect residents to businesses, shopping and recreation, and will provide a branding mechanism that will serve broader economic planning goals. According to Figure 1 of the Transit Master Plan, the Signature Service would generally follow Rancho Cordova Parkway, adjacent west of the Project site. The nearest Signature Transit Station to the Project site would be located at the intersection of Chrysanthy Boulevard and Rancho Cordova Parkway.

City of Rancho Cordova Municipal Code

Section 17.64.100, Bicycle parking requirements, of the City's Municipal Code outlines the bicycle parking requirements for all new construction, additions of ten percent or more floor area to existing buildings, and changes in land use classification. Single-family homes, duplexes, and multi-family dwellings of less than four units are exempt. Short- and long-term bicycle parking requirements are as follows:

1. *Short-term bicycle parking*. If a land use or project is anticipated to generate visitor traffic, the project must provide permanently anchored bicycle racks within 50 feet of the visitor's entrance. To enhance security and visibility the bicycle racks shall be readily visible to passers-by. The bicycle capacity of the racks must equal an amount equivalent to five percent of all required motorized vehicle parking. There shall be a minimum of one rack with capacity for two bicycles.
2. *Long-term bicycle parking*. Buildings with over ten tenant-occupants (e.g., multi-family tenants, owners, employees) shall provide secure bicycle parking for five percent of required motorized vehicle spaces, with a minimum of one space. Acceptable parking facilities shall be convenient from the street and include one or a combination of the following:
    a. Covered, lockable enclosures with permanently anchored racks for bicycles,
    b. Lockable bicycle rooms with permanently anchored racks,
    c. Lockable, permanently anchored bicycle lockers.
3. In the case of residential development, a standard garage is sufficient, if available.

3.13.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

This section describes the thresholds or criteria that determine whether the Project causes a significant impact on the roadway, bicycle, pedestrian, or transit systems. These thresholds are based on policies from the Rancho Cordova General Plan and recommended thresholds from the CEQA Guidelines.

The Project would have a significant impact if it would:

- Conflict with an applicable program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities:
    - Roadway/Signalized Intersections:
        - result in a roadway or a signalized intersection operating at an acceptable LOS to deteriorate to an unacceptable LOS:
            - LOS E within the unincorporated area,
            - LOS D within the City, except if additional features are provided consistent with General Plan policy,
            - Require roadway widening,
            - Require traffic signalization based on the peak hour traffic signal analysis;
        - increase the volume-to-capacity (V/C) ratio by more than 0.05 at a roadway or at a signalized intersection that is operating at an unacceptable LOS without the Project.
    - Unsignalized Intersections:
        - result in an unsignalized intersection movement/approach operating at an acceptable LOS to deteriorate to an unacceptable LOS, and also cause the intersection to meet a traffic signal warrant; or
        - for an unsignalized intersection that meets a signal warrant, increase the delay by more than 5 seconds at a movement/approach that is operating at an unacceptable LOS without the Project.
    - Transit: conflict with an applicable program, plan, ordinance, or policy addressing the transit system; and/or
    - Bicycle and Pedestrian: conflict with an applicable program, plan, ordinance, or policy addressing the bicycle and pedestrian system;
- Substantially increase hazards due to geometric design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); and/or
- Result in inadequate emergency access.

METHODOLOGY

Project Trip Generation and Distribution

Project-generated vehicle trips are approximated using data included in *Trip Generation, 9th Edition,* published by the Institute of Transportation Engineers (ITE).

The land use considered for this analysis included 735 market rate single family detached units (SFR), 215 multi-family housing units, 737 age-restricted senior single family units, 38 age-restricted senior multifamily units, and 32,000 square feet of commercial uses for the Project site. This land use type is understood to have trip characteristics that generate fewer daily trips when compared to non-age restrictive land use types. In fact, the daily trip rate for the senior single family units is 61% less than

the daily trip rate for the market-rate single family units. In addition, the AM and PM peak hour trip rates for senior single family units are 71% and 73% less than the AM peak hour and PM peak hour trip rates for the market-rate single family units, respectively.

To represent this development, ITE Land Use Codes 210 (Single Family Detached Housing), 220 (Apartment), 251 (Senior Adult Housing - Detached), 252 (Senior Adult Housing - Attached), and 820 (Shopping Center) were applied. Internal capture rates of 2.84% and 8.92% were applied to the AM and PM peak hours, respectively. For the commercial uses, a pass-by reduction of 34% was applied for the PM peak hour, in accordance with the Trip Generation Handbook. The anticipated trip generation characteristics for the Project are presented in Table 3.13-5.

TABLE 3.13-5: PROPOSED PROJECT TRIP GENERATION

LAND USE (ITE CODE)	*SIZE*	*DAILY TRIPS*	*AM PEAK HOUR*			*PM PEAK HOUR*		
			TOTAL	*IN*	*OUT*	*TOTAL*	*IN*	*OUT*
Single-Family Detached Housing (210)	735 DU	6,796	537	136	411	716	451	265
Apartment (220)	215 DU	1,225	105	21	84	114	74	40
Senior Adult Housing – Detached (251)	737 DU	2,519	158	55	103	181	110	71
Senior Adult Housing – Attached (252)	38	112	8	3	5	10	6	4
Shopping Center (820)	32.000 KSF	954	23	14	9	81	39	42
Total		**11,606**	**841**	**229**	**612**	**1,102**	**680**	**422**

SOURCE: KIMLEY-HORN, 2019.

As shown in Table 3.13-5, the Project is estimated to generate approximately 11,606 new daily trips, with 841 and 1,102 trips occurring during the AM and PM peak hours, respectively.

The Project trip distribution percentages are provided in Figure 3.13-4. The assignments of Project trips are depicted in Figure3.13-5.

Rancho Cordova Parkway Widening Trigger Analysis

The need to widen Rancho Cordova Parkway from two lanes to four lanes along the Project extents was analyzed between Existing (2017) and Cumulative (2040) Plus Proposed Project conditions. This trigger analysis incorporated not only the development assumptions that would increase traffic along this roadway segment, but also the connection of the roadway south to Grant Line Road and north to US-50.

Peak Hour Traffic Signal Warrant Analysis

The need for traffic signalization was assessed based on the peak-hour warrant methodologies noted in Section 4.C of the *California Manual on Uniform Traffic Control Devices* (CaMUTCD), *2014 Edition with April 2017 revisions* (CaMUTCD). The peak-hour traffic signal warrant analysis was performed for the two unsignalized intersections in the Existing (2017) scenario, including the SSSC intersection at Jackson Road and Eagles Nest Road (Intersection #3), and the AWSC intersection at Grant Line Road and Kiefer Boulevard (Intersection #8).

IMPACTS AND MITIGATION MEASURES

Impact 3.13-1: Under Existing (2017) Plus Project conditions, Project may conflict with an applicable program, plan, ordinance or policy addressing the circulation system – Roadway Segments and Intersections (Significant and Unavoidable)

As previously discussed, the number of trips anticipated to be generated by the Project was derived using the *Trip Generation Manual, 9th Edition,* published by the ITE. These trips were assigned to the roadway network based on existing traffic volumes, output from the SACSIM travel demand model, and professional judgment. Using these volumes, LOS were determined at the study facilities. Existing (2017) Plus Proposed Project peak hour turn movement volumes are presented in Figure 3.13-6. LOS were then determined at the study facilities. Analysis worksheets for this scenario are provided in Appendix C of Appendix I.1.

Intersections

Table 3.13-6 presents the intersection operating conditions for this analysis scenario. As indicated in the table, the study intersections operate from LOS A to LOS F during the AM and PM peak hours.

As reflected in Table 3.13-6, the addition of the Project results in potentially significant impacts at five study intersections:

- Intersection #3, Jackson Road at Eagles Nest Road (located in the County of Sacramento);
- Intersection #9, Grant Line Road at Sunrise Boulevard (located in the County of Sacramento);
- Intersection #11, Douglas Road at Sunrise Boulevard;
- Intersection #21, Sunrise Boulevard at White Rock Road; and
- Intersection #25, Sunrise Boulevard at Zinfandel Drive.

Following Table 3.13-6 is a discussion of each potentially significant impact associated with the study intersections.

TABLE 3.13-6: EXISTING (2017) PLUS PROJECT INTERSECTION LOS

LOCATION	CONTROL	EXISTING (2017)				EXISTING (2017) PLUS PROJECT			
		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR	
		DELAY (SECS)	LOS	DELAY (SECS)	LOS	DELAY (SECS)	LOS	DELAY (SECS)	LOS
1. Jackson Rd/SR-16 @ Bradshaw Rd	Signal	**122.2**	**F**	**79.1**	**F**	**126.1**	**F**	**80.1**	**F**
2. Jackson Rd/SR-16 @ Excelsior Rd	Signal	74.1	E	51.8	D	59.1	E	43.2	D
3. Jackson Rd/SR-16 @ Eagles Nest Rd	SSSC	**17.2 (89.1 NB)**	**F**	**20.1 (253.1 NB)**	**F**	**18.0 (95.3 NB)**	**F**	**19.1 (ECL NB)**	**F**
4. Jackson Rd/SR-16 @ Sunrise Rd	Signal	66.0	E	44.3	D	**69.3**	**E**	47.0	D
5. Jackson Rd/SR-16 @ Grant Line Rd	Signal	**113.8**	**F**	**136.4**	**F**	**114.1**	**F**	**136.9**	**F**
6. Rancho Cordova Pkwy @ Chrysanthy Blvd	Signal	Does Not Exist				1.4	A	1.2	A
7. Florin Rd @ Sunrise Blvd	Signal	9.5	A	10.6	B	9.8	A	11.1	B
8. Grant Line Rd @ Kiefer Blvd	Signal	15.2	C	27.2	D	15.2	C	27.2	D
9. Grant Line Rd @ Sunrise Blvd	Signal	**113.1**	**F**	52.1	D	**120.9**	**F**	54.9	D
10. Douglas Rd @ Zinfandel Dr	Signal	44.3	D	19.1	B	44.8	D	19.3	B
11. Douglas Rd @ Sunrise Blvd	Signal	28.4	C	41.5	D	35.0	D	**63.7**	**E**
12. Douglas Rd @ Grant Line Rd	Signal	12.0	B	15.6	B	12.4	B	16.4	B
13. Mather Field Rd @ Folsom Blvd	Signal	27.5	C	51.7	D	27.2	C	51.1	D
14. Mather Field Rd @ US-50 WB Ramps	Signal	**142.9**	**F**	22.1	C	**142.5**	**F**	22.0	C
15. Mather Field Rd @ US-50 EB Ramps	Signal	53.5	D	24.3	C	53.6	D	24.4	C
16. Mather Field Rd @ International Dr	Signal	10.9	B	23.9	C	10.8	B	23.9	C
17. Zinfandel Dr @ International Dr	Signal	22.4	C	32.9	C	23.7	C	35.2	D
18. Zinfandel Dr @ White Rock Rd	Signal	33.4	C	39.1	D	33.9	C	40.7	D
19. Zinfandel Dr @ US-50 EB Ramps	Signal	**85.1**	**F**	23.2	C	**88.7**	**F**	25.7	C
20. Zinfandel Dr @ US-50 WB Ramps	Signal	29.7	C	18.1	B	29.6	C	18.0	B
21. Sunrise Blvd @ White Rock Rd	Signal	35.7	D	**56.5**	**E**	33.2	C	**61.9**	**E**
22. Sunrise Blvd @ Folsom Blvd	Signal	36.6	D	41.5	D	38.0	D	42.2	D
23. Sunrise Blvd @ US-50 EB Ramps	Signal	23.9	C	23.0	C	23.7	C	22.7	C
24. Sunrise Blvd @ US-50 WB Ramps	Signal	15.3	B	17.8	B	15.5	B	18.5	B
25. Sunrise Blvd @ Zinfandel Dr	Signal	**112.8**	**F**	**58.6**	**E**	117.7	F	**70.2**	**E**
26. White Rock Rd @ Grant Line Rd	Signal	6.1	A	13.4	B	6.1	A	13.5	B
27. White Rock Rd @ Prairie City Rd	Signal	61.5	E	59.4	E	63.2	E	61.8	E

*NOTE: **BOLD** REPRESENTS UNACCEPTABLE OPERATIONS. SHADED REPRESENTS A POTENTIALLY SIGNIFICANT IMPACT. AWSC: ALL WAY STOP CONTROL. SSS: SIDE STREET STOP CONTROL. ECL: EXCEEDS CALCULABLE LIMIT.*

SOURCE: KIMLEY-HORN, 2018.

INTERSECTION #3, JACKSON ROAD AT EAGLES NEST ROAD

As shown in Table 3.13-6, this intersection operates at unacceptable LOS F during the AM and PM peak hours without the Project, and the Project adds more than five seconds of delay to the northbound left turn movement during the AM and PM peak hours. This is a potentially significant impact.

The significant impact at Intersection #3 during the AM and PM peak hours can be mitigated by converting the intersection from side street stop controlled to signalized, which would result in the intersection operating at LOS B during the AM and PM peak hours as shown in Table 3.13-7. Mitigation Measure 3.13-1 requires the Project applicant to fund the Project's fair-share of converting this intersection from a side street stop controlled intersection to a signalized intersection. However, since the identified improvement falls under the jurisdiction of the County, neither the City nor the Project applicant would have control over the timing or implementation of this improvement. Thus, this impact would remain ***significant and unavoidable***. If the County allows the improvement to move forward, the impact would be classified as significant in the short-term, but eventually would be reduced to a less-than-significant level in the long-term.

INTERSECTION #9, GRANT LINE ROAD AT SUNRISE BOULEVARD

As shown in Table 3.13-6, this intersection operates at unacceptable LOS F during the AM peak hour without the Project, and the Project adds more than five seconds of delay to the intersection. This is a potentially significant impact.

The significant impact at this intersection during the AM peak hour can be mitigated by changing the southbound approach to include a right turn lane and an all-purpose lane, which would result in the intersection operating at LOS D or better during the AM and PM peak hours as shown in Table 3.13-7. The intersection improvements would include restriping the southbound approach to move the bicycle lane from its existing location between the two travel lanes to the right shoulder and add hatching for the right turns, consistent with the Optional Through Right and Right-Turn-Only lane configuration included in Figure 9C-4a (CA) of the CaMUTCD. Mitigation Measure 3.13-2 requires the Project applicant to fund the Project's fair-share of the southbound approach improvements to this intersection. However, since the identified improvement falls under the jurisdiction of the County, neither the City nor the Project applicant would have control over their timing or implementation. Thus, this impact would remain ***significant and unavoidable***. If the County allows the improvement to move forward, the impact would be classified as significant in the short-term, but eventually would be reduced to a less-than-significant level in the long-term.

INTERSECTION #11, DOUGLAS ROAD AT SUNRISE BOULEVARD

As shown in Table 3.13-6, this intersection operates at LOS D during the PM peak hour without the Project, and the Project results in LOS E. This is a potentially significant impact.

The significant impact at this intersection during the PM peak hour can be mitigated through Mitigation Measure 3.13-3, which requires signal timing optimization and the addition of a right-

turn overlap signal phase for the eastbound right-turn, overlapping with the northbound left-turn movement. As shown in Table 3.13-7, Mitigation Measure 3.13-3, included below, results in the intersection operating at LOS D or better during the AM and PM peak hours. With implementation of Mitigation Measure 3.13-3, this impact is ***less than significant*.**

INTERSECTION #21, SUNRISE BOULEVARD AT WHITE ROCK ROAD

As shown in Table 3.13-2, this intersection operates at unacceptable LOS E during the PM peak hour without the Project, and the Project adds more than five seconds of delay to the intersection. This is a potentially significant impact.

The significant impact at this intersection during the PM peak hour can be mitigated through Mitigation Measure 3.13-4, which requires optimizing the signal timings. As shown in Table 3.13-7, Mitigation Measure 3.13-4, included below, results in the intersection operating at LOS D or better during the AM and PM peak hours. With implementation of Mitigation Measure 3.13-4, this impact is ***less than significant*.**

INTERSECTION #25, SUNRISE BOULEVARD AT ZINFANDEL DRIVE

As shown in Table 3.13-6, this intersection operates at unacceptable LOS E during the PM peak hour without the Project, and the Project adds more than five seconds of delay to the intersection. This is a potentially significant impact.

The significant impact at this intersection during the PM peak hour can be mitigated by Mitigation Measure 3.13-5, which requires restriping the eastbound and westbound approaches to include a left turn lane and through-right lane. As shown in Table 3.13-7, Mitigation Measure 3.13-5, included below, results in the intersection operating at LOS D or better during the AM and PM peak hours. With implementation of Mitigation Measure 3.13-5, this impact is ***less than significant*.**

TABLE 3.13-7: INTERSECTION LOS – EXISTING (2017) PLUS PROJECT MITIGATED CONDITION

INTERSECTION	*EXISTING (2017) PLUS PROJECT*				*EXISTING (2017) PLUS PROJECT – WITH MITIGATION*			
	AM PEAK HOUR		*PM PEAK HOUR*		*AM PEAK HOUR*		*PM PEAK HOUR*	
	DELAY (SEC)	*LOS*	*DELAY (SEC)*	*LOS*	*DELAY (SEC)*	*LOS*	*DELAY (SEC)*	*LOS*
3. Jackson Rd/SR-16 @ Eagles Nest Rd	**18.0 (95.3 NB)**	**F**	**19.1 (ECL NB)**	**F**	19.5	B	15.7	B
9. Grant Line Rd @ Sunrise Blvd	**120.9**	**F**	54.9	D	61.9	E	32.1	C
11. Douglas Rd @ Grant Line Rd	35.0	D	**63.7**	**E**	35.0	D	53.2	D
21. Sunrise Blvd @ White Rock Rd	33.2	C	**61.9**	**E**	33.2	C	54.3	D
25. Sunrise Blvd @ Zinfandel Dr	117.7	F	**70.2**	**E**	89.0	F	54.5	D

*NOTES: **BOLD** REPRESENTS UNACCEPTABLE OPERATIONS. SHADED REPRESENTS A POTENTIALLY SIGNIFICANT IMPACT. ECL = EXCEEDS CALCULABLE LIMIT.*

ANALYSIS WORKSHEETS FOR THE PROPOSED MITIGATION MEASURES FOR THIS SCENARIO ARE PROVIDED IN APPENDIX F OF APPENDIX I.1.

SOURCE: KIMLEY-HORN, 2018.

Roadway Segments

Table 3.13-8 presents the roadway segment operating conditions for this analysis scenario. As indicated in the table, the study roadway segments operate from LOS A to LOS F.

As shown in Table 3.13-8, the addition of the Project results in a potentially significant impact at one study segment: Roadway Segment #22, Sunrise Boulevard between US-50 and Folsom Boulevard.

SEGMENT #22, SUNRISE BOULEVARD BETWEEN US 50 AND FOLSOM BOULEVARD

As shown in Table 3.13-8, this roadway segment operates at unacceptable LOS E without the Project and the Project increases the volume-to-capacity ratio by more than 0.05. This is a potentially significant impact. The General Plan DEIR indicated that widening beyond 6 lanes would not be consistent with the City's vision for Sunrise Blvd as articulated in the General Plan, including the Circulation Plan, which doesn't anticipate local roads wider than 6 lanes.

The GP EIR addressed this for roadway segments with the following explanation "*In addition, during the development of the Roadway System Sizing Map and the General Plan, the City Council identified that no local roadway would be designed larger than a 6-lane facility, given that large roadway facilities (8 lanes and greater) conflicts with pedestrian and bicycle use and results in the "barrier effect" of such roadways dividing portions of the City*." Therefore, widening this segment would conflict with the General Plan and impacts to Roadway Segment #22 would remain ***significant and unavoidable***.

CONCLUSION

Under the Existing (2017) Plus Project condition, the addition of the Project results in potentially significant impacts at five study intersections, including: Intersection #3, Jackson Road at Eagles Nest Road, Intersection #9, Grant Line Road at Sunrise Boulevard, Intersection #11, Douglas Road at Sunrise Boulevard, Intersection #21, Sunrise Boulevard at White Rock Road, and Intersection #25, Sunrise Boulevard at Zinfandel Drive, and unacceptable operations at on roadway segment, Roadway Segment #22, Sunrise Boulevard between US-50 and Folsom Boulevard.

Implementation of Mitigation Measure 3.13-1 would result in acceptable operations at Intersection #3, Mitigation Measure 3.13-2 would result in acceptable operations at Intersection #9, Mitigation Measure 3.13-3 would result in acceptable operations at Intersection #11, Mitigation Measure 3.13-4 would result in acceptable operations at Intersection #21, and Mitigation Measure 3.13-5 would result in acceptable operations at Intersection #25 and would reduce impacts at these five intersections to less than significant. However, the improvement identified in Mitigation Measures 3.13-1 and 3.13-2 fall under the jurisdiction of the County; therefore, neither the City nor the Project applicant would have control over the timing or implementation of these improvements. If the County allows the improvements to Intersections #3 and #9 to move forward, the impacts to these intersections would be classified as significant in the short-term, but eventually would be reduced to a less-than-significant level in the long-term.

TABLE 3.13-8: EXISTING (2017) PLUS PROJECT ROADWAY SEGMENT LOS

ROADWAY SEGMENT	EXISTING (2017)					EXISTING (2017) PLUS PROJECT					LOS THRESH-OLD
	# LANES	FACILITY TYPE	DAILY VOL.	V/C	LOS	# LANES	FACILITY TYPE	DAILY VOL.	V/C	LOS	
1. Jackson Rd/SR-16: Bradshaw Rd and Excelsior Rd	2	Arterial M	12,341	0.69	B	2	Arterial M	12,443	0.69	B	E
2. Jackson Rd/SR-16: Excelsior Rd and Eagles Nest Rd	2	Rural Hwy	11,760	0.51	D	2	Rural Hwy	11,965	0.52	D	E
3. Jackson Rd/SR-16: Eagles Net Rd and Sunrise Blvd	2	Rural Hwy	11,806	0.52	D	2	Rural Hwy	12,011	0.52	D	D
4. Jackson Rd/SR-16: Sunrise Blvd and Grant Line Rd	2	Rural Hwy	14,980	**0.65**	**E**	2	Rural Hwy	15,082	**0.66**	**E**	E
5. Excelsior Rd: Jackson Rd/SR-16 and Kiefer Blvd	2	Arterial M	4,552	0.25	A	2	Arterial M	4,552	0.25	A	E
6. Kiefer Blvd: Grant Line Rd and Jackson Rd/SR-16	2	Rural S	941	0.05	A	2	Rural S	941	0.05	A	D
7. International Dr: Zinfandel Dr and Sunrise Blvd	6	Arterial M	11,246	0.21	A	6	Arterial M	13,909	0.26	A	D
8. Mather Blvd: Femoyer St and Douglas Rd	2	Arterial M	5,540	0.31	A	2	Arterial M	6,052	0.34	A	D
9. Douglas Rd: Mather Blvd and Sunrise Blvd	2	Arterial M	12,404	0.69	B	2	Arterial M	13,019	0.72	C	D
10. Douglas Rd: Sunrise Blvd and Grant Line Rd	2	Arterial M	7,510	0.42	A	2	Arterial M	7,920	0.44	A	D
11. White Rock Rd: Zinfandel Dr and Sunrise Blvd	6	Arterial M	15,943	0.30	A	6	Arterial M	16,148	0.30	C	D
12. White Rock Rd: Sunrise Blvd and Grant Line Rd	2	Rural NS	3,533	0.21	B	2	Rural NS	3,635	0.21	A	E
13. White Rock Rd: Grant Line Rd and Prairie City Rd	4	Arterial M	15,436	0.43	A	4	Arterial M	15,743	0.44	B	D
14. Mather Field Rd: Folsom Blvd and US-50 WB Ramps	4	Arterial M	22,543	0.63	B	4	Arterial M	22,645	0.63	E	D
15. Mather Field Rd: US-50 WB Ramps and US-50 EB Ramps	4	Arterial M	35,028	**0.97**	**E**	4	Arterial M	35,130	**0.98**	**C**	D
16. Mather Field Rd: US-50 EB Ramps and International Dr	6	Arterial M	42,228	0.78	C	6	Arterial M	42,433	0.79	B	D
17. Zinfandel Dr: Folsom Blvd and US-50 WB Ramps	4	Arterial M	22,380	0.62	B	4	Arterial M	22,687	0.63	E	D
18. Zinfandel Dr: US-50 EB Ramps and White Rock Rd	6	Arterial M	50,515	**0.94**	**E**	6	Arterial M	52,563	**0.97**	**E**	D
19. Zinfandel Dr: White Rock Rd and International Dr	6	Arterial M	23,685	0.44	A	6	Arterial M	25,733	0.48	A	D
20. Zinfandel Dr: International Dr and Douglas Rd	4	Arterial M	13,705	0.38	A	4	Arterial M	13,807	0.38	A	D
21. Sunrise Blvd: US-50 WB Ramps and US-50 EB Ramps	6	Arterial M	67,276	**1.25**	**F**	6	Arterial M	70,041	**1.30**	**F**	D
22. Sunrise Blvd: US-50 EB Ramps to Folsom Blvd	6	Arterial M	53,504	**0.99**	**E**	**6**	**Arterial M**	**56,986**	**1.06**	**F**	D
23. Sunrise Blvd: Folsom Blvd and White Rock Rd	6	Arterial M	41,238	0.76	C	6	Arterial M	45,540	0.84	D	D
24. Sunrise Blvd: White Rock Rd and Douglas Rd	6	Arterial M	30,941	0.57	A	6	Arterial M	38,725	0.72	C	D
25. Sunrise Blvd: Douglas Rd and Jackson Rd/SR-16	4	Arterial M	22,635	0.63	B	4	Arterial M	31,546	0.88	D	D
26. Sunrise Blvd: Jackson Rd/SR-16 and Grant Line Rd	2	Rural S	11,748	0.59	D	2	Rural S	12,567	0.63	E	E
27. Grant Line Rd: White Rock Rd and Douglas Rd	2	Rural NS	12,804	**0.75**	**E**	2	Rural NS	13,111	**0.77**	**E**	D
28. Grant Line Rd: Douglas Rd and Jackson Rd/SR-16	2	Rural S	8,524	0.43	D	2	Rural S	8,524	0.43	D	D
29. Grant Line Rd: Jackson Rd/SR-16 and Sunrise Blvd	2	Rural S	7,745	0.39	D	2	Rural S	7,745	0.39	D	E

*NOTE: **BOLD** REPRESENTS UNACCEPTABLE OPERATIONS. SHADED REPRESENTS A POTENTIALLY SIGNIFICANT IMPACT. AWSC: ALL WAY STOP CONTROL. SSS: SIDE STREET STOP CONTROL. ECL: EXCEEDS CALCULABLE LIMIT.*

SOURCE: KIMLEY-HORN, 2018.

The unacceptable operation at Roadway Segment #22 is an existing deficiency and the segment currently has the maximum number of lanes for the General Plan designation and, as discussed above, the City has determined that widening to larger than a 6-lane facility would conflict with bicycle and pedestrian use. Therefore, there is no feasible construction mitigation and no alternative mitigation that has been identified as feasible. Overall, under the Existing (2017) Plus Project condition, impacts to Intersections #3 and #9 and Roadway Segment #22 would be ***significant and unavoidable***.

MITIGATION MEASURE(S)

Mitigation Measure 3.13-1: *Intersection #3, Jackson Road at Eagles Nest Road*: *The intersection shall be converted from side street stop controlled to signalized. Prior to issuance of the occupancy permit for the 400th dwelling unit, the Project applicant shall fund its fair share of the improvement. The Project's fair share of the improvement is 1.69 percent.*

Mitigation Measure 3.13-2: *Intersection #9, Grant Line Road at Sunrise Boulevard*: *The southbound approach shall be changed to include a right turn lane and an all-purpose lane. This would require restriping the southbound approach to move the bicycle lane from its existing location between the two travel lanes to the right shoulder and add hatching for the right turns, consistent with the Optional Through Right and Right-Turn-Only lane configuration included in Figure 9C-4a (CA) of the CaMUTCD[4]. Prior to issuance of the occupancy permit for the 400th dwelling unit, the Project applicant shall fund its fair share of the improvement. The Project's fair share of the improvement is 2.46 percent.*

Mitigation Measure 3.13-3: *Intersection #11, Douglas Road at Sunrise Boulevard*: *Signal timing optimization shall be completed at this intersection. Additionally, a right-turn overlap signal phase shall be added for the eastbound right-turn, overlapping with the northbound left-turn movement. The improvement shall be completed prior to issuance of the occupancy permit for the 400th dwelling unit.*

Mitigation Measure 3.13-4: *Intersection #21, Sunrise Boulevard at White Rock Road: Signal timing optimization shall be completed at this intersection. The improvement shall be completed prior to issuance of the occupancy permit for the 400th dwelling unit.*

Mitigation Measure 3.13-5: *Intersection #25, Sunrise Boulevard at Zinfandel Drive*: *The eastbound and westbound approaches shall be restriped to include a left turn lane and through-right lane. The improvement shall be completed prior to issuance of the occupancy permit for the 400th dwelling unit.*

[4] California MUTCD 2014 Edition. Chapter 9C-Markings: Part 9 Traffic Control for Bicycle Facilities. November 2014

Impact 3.13-2: Under Cumulative (2040) Plus Project conditions, Project may conflict with an applicable program, plan, ordinance or policy addressing the circulation system – Roadway Segments and Intersections (Significant and Unavoidable)

Future traffic estimates were prepared using the modified SACSIM travel demand model developed by the City of Rancho Cordova for the 2040 General Plan. The difference between the resulting traffic estimate and the 2012 baseline model results (the growth) was then added to Existing (2017) traffic volumes to establish Cumulative (2040) traffic estimates. Using these volumes and network changes, LOS were determined at the study facilities. Analysis worksheets for this scenario are provided in Appendix D of Appendix I.1.

The future roadway network and additional study facilities for the Cumulative (2040) scenario are shown in Figure 3.13-7. Figures 3.13-8a and 3.13-8b depict the assumed lane geometries for the Cumulative (2040) scenario. Cumulative peak hour turning movement volumes are presented in Figures 3.13-9a and 3.13-9b. Table 3.13-9 presents the peak hour intersection operating conditions for this analysis scenario. As indicated in Table 3.13-9, the study intersections operate from LOS A to LOS F during the AM and PM peak hours.

Table 3.13-1 presents the roadway segment operating conditions for this analysis scenario. As indicated in the table, the study roadway segments operate from LOS A to LOS F.

Cumulative (2040) Plus Project Trip Distribution

As previously discussed, the number of trips anticipated to be generated by the Project was derived using the *Trip Generation Manual, 9th Edition,* published by the ITE. The Project trips were assigned to the future roadway network based on modified SACSIM travel demand model, as provided by the City of Rancho Cordova. Using these volumes, levels of service were determined at the study facilities.

The Cumulative (2040) Plus Project trip distribution and trip assignment are shown in Figure 3.13-10, Figure 3.13-11a, and Figure 3.13-11b. The Cumulative (2040) Plus Proposed Project peak hour turning movement volumes are presented in Figures 3.13-12a and 3.13-12b. Analysis worksheets for this scenario are provided in Appendix E of Appendix I.1.

Intersections

Table 3.13-9 presents the peak hour intersection operating conditions for the Cumulative (2040) scenario under baseline and plus project conditions. As reflected in Table 3.13-9, the addition of the Project results in potentially significant impacts at five study intersections. Analysis worksheets for the mitigations for this scenario are provided in Appendix F of Appendix I.1. Following Table 3.13-9 is a discussion of each potentially significant impact.

TABLE 3.13-9: CUMULATIVE (2040) BASELINE AND PLUS PROJECT INTERSECTION LOS

LOCATION	CONTROL	CUMULATIVE (2040) BASELINE				CUMULATIVE (2040) PLUS PROJECT			
		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR	
		DELAY (SECS)	LOS	DELAY (SECS)	LOS	DELAY (SECS)	LOS	DELAY (SECS)	LOS
1. Jackson Rd/SR-16 @ Bradshaw Rd	Signal	**146.9**	**F**	**194.9**	**F**	**147.6**	**F**	**195.8**	**F**
2. Jackson Rd/SR-16 @ Excelsior Rd	Signal	66.4	E	53.8	D	67.2	E	54.8	D
3. Jackson Rd/SR-16 @ Eagles Nest Rd	Signal	11.0	B	14.1	B	11.2	B	14.4	B
4. Jackson Rd/SR-16 @ Sunrise Rd	Signal	**104.6**	**F**	53.9	D	**105.3**	**F**	54.7	D
5. Jackson Rd/SR-16 @ Grant Line Rd	Signal	**114.7**	**F**	**62.7**	**E**	**118.7**	**F**	65.9	E
6. Rancho Cordova Pkwy @ Chrysanthy Blvd	Signal	11.8	B	10.6	B	19.3	B	14.8	B
7. Florin Rd @ Sunrise Blvd	Signal	9.8	A	12.6	B	9.8	A	12.9	B
8. Grant Line Rd @ Kiefer Blvd	Signal	20.8	C	18.5	B	21.2	C	18.9	B
9. Grant Line Rd @ Sunrise Blvd	Signal	**150.1**	**F**	**109.2**	**F**	**151.5**	**F**	**108.7**	**F**
10. Douglas Rd @ Zinfandel Dr	Signal	**145.2**	**F**	35.3	D	**161.7**	**F**	43.9	D
11. Douglas Rd @ Sunrise Blvd	Signal	**97.1**	**F**	**107.6**	**F**	**114.5**	**F**	**109.6**	**F**
12. Douglas Rd @ Grant Line Rd	Signal	14.3	B	22.1	C	14.5	B	23.9	C
13. Mather Field Rd @ Folsom Blvd	Signal	46.3	D	**142.2**	**F**	46.1	D	141.2	F
14. Mather Field Rd @ US-50 WB Ramps	Signal	30.1	C	12.4	B	30.1	C	12.5	B
15. Mather Field Rd @ US-50 EB Ramps	Signal	28.5	C	6.1	A	29.3	C	6.2	A
16. Mather Field Rd @ International Dr	Signal	6.8	A	9.6	A	6.8	A	9.7	A
17. Zinfandel Dr @ International Dr	Signal	45.3	D	**68.2**	**E**	45.1	D	**72.4**	**E**
18. Zinfandel Dr @ White Rock Rd	Signal	41.7	D	**71.2**	**E**	43.2	D	**72.9**	**E**
19. Zinfandel Dr @ US-50 EB Ramps	Signal	**79.4**	**E**	**166.4**	**F**	**83.7**	**F**	**170.7**	**F**
20. Zinfandel Dr @ US-50 WB Ramps	Signal	13.2	B	9.8	A	13.2	B	9.8	A
21. Sunrise Blvd @ White Rock Rd	Signal	**65.5**	**E**	**120.1**	**F**	66.8	E	**125.9**	**F**
22. Sunrise Blvd @ Folsom Blvd	Signal	41.2	D	**56.5**	**E**	41.6	D	56.6	E
23. Sunrise Blvd @ US-50 EB Ramps	Signal	14.0	B	11.4	B	14.0	B	11.5	B
24. Sunrise Blvd @ US-50 WB Ramps	Signal	11.3	B	15.4	B	11.5	B	15.6	B
25. Sunrise Blvd @ Zinfandel Dr	Signal	**209.8**	**F**	**93.9**	**F**	**215.0**	**F**	101.3	F
26. White Rock Rd @ Grant Line Rd	Signal	11.4	B	41.6	D	11.7	B	45.8	D
27. White Rock Rd @ Prairie City Rd	Signal	**140.3**	**F**	**157.0**	**F**	**144.8**	**F**	**171.0**	**F**
28. Rancho Cordova Pkwy @ Folsom Blvd	Signal	15.4	B	42.1	D	15.4	B	42.1	D

LOCATION	CONTROL	CUMULATIVE (2040) BASELINE				CUMULATIVE (2040) PLUS PROJECT			
		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR	
		DELAY (SECS)	LOS	DELAY (SECS)	LOS	DELAY (SECS)	LOS	DELAY (SECS)	LOS
29. Rancho Cordova Pkwy @ White Rock Rd	Signal	32.6	C	27.0	C	32.5	C	27.3	C
30. Rancho Cordova Pkwy @ Rio Del Oro Pkwy	Signal	22.1	C	20.7	C	22.3	C	20.9	C
31. Rancho Cordova Pkwy @ Douglas Rd	Signal	16.9	D	16.4	B	20.3	C	37.5	D
32. Rancho Cordova Pkwy @ Kiefer Blvd	Signal	21.9	C	19.7	B	21.6	C	19.4	B
33. Rancho Cordova Pkwy @ Grant Line Rd	Signal	8.0	A	8.0	A	8.0	A	8.0	A
34. Americanos Blvd @ International Dr	Signal	6.8	A	5.8	A	6.7	A	5.8	A
35. Americanos Blvd @ Centennial Dr	Signal	18.7	B	16.5	B	18.7	B	16.5	B
36. Americanos Blvd @ Douglas Rd	Signal	22.2	C	19.6	B	22.2	C	19.6	B
37. Americanos Blvd @ Chrysanthy Blvd	Signal	19.2	B	19.3	B	19.9	B	19.4	B
38. Americanos Blvd @ Kiefer Blvd	Signal	8.0	A	8.0	A	8.0	A	8.0	A
39. Chrysanthy Blvd @ Sunrise Blvd	Signal	12.4	B	4.4	A	14.0	B	5.0	A
40. Chrysanthy Blvd @ Grant Line Rd	Signal	7.0	A	3.2	A	8.7	A	3.9	A

*NOTES: **BOLD** REPRESENTS UNACCEPTABLE OPERATIONS. SHADED REPRESENTS A POTENTIALLY SIGNIFICANT IMPACT. AWSC = ALL WAY STOP CONTROL. SSSC = SIDE STREET STOP CONTROL. ECL = EXCEEDS CALCULABLE LIMIT.*

SOURCE: KIMLEY-HORN, 2018.

INTERSECTION #10, DOUGLAS ROAD AT ZINFANDEL DRIVE

As shown in Table 3.13-9, this intersection operates at unacceptable LOS F during the AM peak hour without the Project, and the Project adds more than five seconds of delay to the intersection during the AM peak hour. This is a potentially significant impact.

The significant impact at this intersection during the AM peak hour can be mitigated by converting the westbound right turn from permitted to a free right turn with a receiving lane, which results in the intersection operating at LOS D during the AM and PM peak hours as shown in Table 3.13-10. Mitigation Measure 3.13-6, included below, requires the Project applicant to fund the Project's fair-share of these improvements to the intersection. However, since the identified improvement falls under the jurisdiction of the County; therefore, neither the City nor the Project applicant would have control over their timing or implementation. Thus, this impact would remain ***significant and unavoidable***. If the County allows the improvement to move forward, the impact would be classified as significant in the short-term, but eventually would be reduced to a less-than-significant level in the long-term.

TABLE 3.13-10: INTERSECTION LOS – CUMULATIVE (2040) PLUS PROJECT MITIGATED CONDITION

INTERSECTION	CUMULATIVE (2040) PLUS PROJECT				CUMULATIVE (2040) PLUS PROJECT – WITH MITIGATION			
	AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR	
	DELAY (SEC)	LOS	DELAY (SEC)	LOS	DELAY (SEC)	LOS	DELAY (SEC)	LOS
10. Douglas Rd @ Zinfandel Dr	**161.7**	**F**	43.9	D	51.7	D	43.0	D
11. Douglas Rd @ Sunrise Blvd	**114.5**	**F**	**109.6**	**F**	**114.5**	**F**	**109.6**	**F**
21. Sunrise Blvd @ White Rock Rd	**66.8**	**E**	**125.9**	**F**	**66.8**	**E**	**125.9**	**F**
25. Sunrise Blvd @ Zinfandel Dr	**215.0**	**F**	**101.3**	**F**	**215.0**	**F**	**101.3**	**F**
27. White Rock Rd @ Prairie City Rd	144.8	F	**171.0**	**F**	36.7	D	31.8	C

*NOTES: **BOLD** REPRESENTS UNACCEPTABLE OPERATIONS. SHADED REPRESENTS A POTENTIALLY SIGNIFICANT IMPACT.*
SOURCE: KIMLEY-HORN, 2018.

INTERSECTION #11, DOUGLAS ROAD AT SUNRISE BOULEVARD

As shown in Table 3.13-9, this intersection operates at unacceptable LOS F during the AM peak hour without the Project, and the Project adds more than five seconds of delay to the intersection during the AM peak hour. This is a potentially significant impact.

As shown in Table 3.13-10, signal timing optimization required by Mitigation Measure 3.13-3 is not enough to mitigate the Project impacts to acceptable conditions in the Cumulative (2040) Plus Project condition. It is noted that signal timing optimization would reduce impacts in the Existing (2017) Plus Project condition, as shown in Table 3.13-7. The intersection of Douglas Road and Sunrise Boulevard is fully built out according to the City's General Plan. The City's General Plan Draft EIR indicates that widening beyond six lanes would not be consistent with the City's vision for Sunrise Boulevard as articulated in the General Plan, including the Circulation Plan, which doesn't anticipate local roads wider than six lanes. The General Plan Draft EIR addressed this for roadway segments

with the following explanation "*In addition, during the development of the Roadway System Sizing Map and the General Plan, the City Council identified that no local roadway would be designed larger than a 6-lane facility, given that large roadway facilities (8 lanes and greater) conflicts with pedestrian and bicycle use and results in the "barrier effect" of such roadways dividing portions of the City*." The significant impact at Intersection #11 during the AM peak hour cannot be feasibly mitigated. Therefore, this impact is ***significant and unavoidable***.

INTERSECTION #21, SUNRISE BOULEVARD AT WHITE ROCK ROAD

As shown in Table 3.13-9, this intersection operates at unacceptable LOS F during the AM peak hour without the Project, and the Project adds more than five seconds of delay to the intersection during the AM peak hour. This is a potentially significant impact.

As shown in Table 3.13-10, signal timing optimization, as required by Mitigation Measure 3.13-4, is not enough to mitigate the Project impacts to acceptable conditions in the Cumulative (2040) Plus Project condition. It is noted that signal timing optimization would reduce impacts in the Existing (2017) Plus Project condition, as shown in Table 3.13-7. Further, the intersection of Sunrise Boulevard and White Rock Road is fully built out according to the City's General Plan. The City's General Plan Draft EIR indicates that widening beyond six lanes would not be consistent with the City's vision for Sunrise Boulevard as articulated in the General Plan, including the Circulation Plan, which doesn't anticipate local roads wider than six lanes. The General Plan Draft EIR addressed this for roadway segments with the following explanation "*In addition, during the development of the Roadway System Sizing Map and the General Plan, the City Council identified that no local roadway would be designed larger than a 6-lane facility, given that large roadway facilities (8 lanes and greater) conflicts with pedestrian and bicycle use and results in the "barrier effect" of such roadways dividing portions of the City*." The significant impact at this intersection during the PM peak hour cannot be feasibly mitigated. Therefore, this impact is ***significant and unavoidable***.

INTERSECTION #25, SUNRISE BOULEVARD AT ZINFANDEL DRIVE

As shown in Table 3.13-9, this intersection operates at unacceptable LOS F during the AM peak hour without the Project, and the Project adds more than five seconds of delay to the intersection during the AM peak hour. This is a potentially significant impact.

As shown in 3.13-10, signal timing optimization, as required by Mitigation Measure 3.13-5, is not enough to mitigate the Project impacts to acceptable conditions in the Cumulative (2040) Plus Project condition. It is noted that signal timing optimization would reduce impacts in the Existing (2017) Plus Project condition, as shown in Table 3.13-7. The intersection of Sunrise Boulevard and Zinfandel Drive is fully built out according to the City's General Plan. The City's General Plan Draft EIR indicates that widening beyond six lanes would not be consistent with the City's vision for Sunrise Boulevard as articulated in the General Plan, including the Circulation Plan, which doesn't anticipate local roads wider than six lanes. The General Plan Draft EIR addressed this for roadway segments with the following explanation "*In addition, during the development of the Roadway System Sizing Map and the General Plan, the City Council identified that no local roadway would be designed larger*

than a 6-lane facility, given that large roadway facilities (8 lanes and greater) conflicts with pedestrian and bicycle use and results in the "barrier effect" of such roadways dividing portions of the City." The significant impact at this intersection during the AM peak hour cannot be feasibly mitigated. Therefore, this impact is ***significant and unavoidable***.

INTERSECTION #27, WHITE ROCK ROAD AT PRAIRIE CITY ROAD

As shown in Table 3.13-9, this intersection operates at unacceptable LOS F during the AM and PM peak hour without the Project, and the Project adds more than five seconds of delay to the intersection during the PM peak hour. This is a potentially significant impact.

The significant impact at this intersection during the PM peak hour can be mitigated with the implementation of Mitigation Measure 3.13-7, which requires addition of a second southbound right-turn lane and the addition of a right-turn overlap signal phase for the southbound right-turn. As shown in Table 3.13-10, Mitigation Measure 3.13-8, included below, results in the intersection operating at LOS D during the AM and PM peak hours. Therefore, this impact would be reduced to ***less than significant***.

Roadway Segments

Table 3.13-11 presents the roadway segment operating conditions for this analysis scenario. As indicated in Table 3.13-11, the study roadway segments operate from LOS A to LOS F. Table 3.13-11 presents the roadway segment operating conditions for the Cumulative (2040) scenario. As indicated in Table 3.3-11, the study roadway segments operate from LOS A to LOS F under Cumulative (2040) baseline. As shown in the table, the addition of the Project results in a potentially significant impact at two roadway segments: Roadway Segment #9, Sunrise Boulevard between White Rock Road and Douglas Road, and Roadway Segment #24, Sunrise Boulevard between White Rock Road and Douglas Road.

ROADWAY SEGMENT #9 – DOUGLAS ROAD BETWEEN MATHER BOULEVARD AND SUNRISE BOULEVARD

As shown in Table 3.13-11, the addition of the proposed Project results in a potentially significant impact at Roadway Segment #9, Douglas Road between Mather Boulevard and Sunrise Boulevard. Roadway Segment #9 operates at unacceptable LOS F without the Project, and the Project increases the volume to capacity ratio by more than 0.05. This is a potentially significant impact.

Mitigation Measure 3.13-8 requires the Project applicant to contribute its fair share towards the widening of Douglas Road to the City's maximum allowable capacity of six lanes. With this improvement, the roadway would operate at an acceptable LOS. However, since the identified improvement falls partially under the jurisdiction of the County, neither the City nor the Project applicant would have control over the timing or implementation of this improvement. Thus, this impact would remain ***significant and unavoidable***. If the County allows the improvement to move forward, the impact would be classified as significant in the short-term, but eventually would be reduced to a less-than-significant level in the long-term.

ROADWAY SEGMENT #24 – SUNRISE BOULEVARD BETWEEN WHITE ROCK ROAD AND DOUGLAS ROAD

As shown in Table 3.13-11, the addition of the Project results in a potentially significant impact at Roadway Segment #24, Sunrise Boulevard between White Rock Road and Douglas Road. Roadway Segment #24 operates at unacceptable LOS E without the Project, and the Project increases the volume to capacity ratio by more than 0.05. This is a potentially significant impact.

Roadway Segment #24 operates unacceptably without the Project and currently has the maximum number of lanes for the General Plan designation. The City's General Plan Draft EIR indicates that widening beyond six lanes would not be consistent with the City's vision for Sunrise Boulevard as articulated in the General Plan, including the Circulation Plan, which doesn't anticipate local roads wider than six lanes. The General Plan Draft EIR addressed this for roadway segments with the following explanation "*In addition, during the development of the Roadway System Sizing Map and the General Plan, the City Council identified that no local roadway would be designed larger than a 6-lane facility, given that large roadway facilities (8 lanes and greater) conflicts with pedestrian and bicycle use and results in the "barrier effect" of such roadways dividing portions of the City*." Therefore, further road widening to mitigate this impact would conflict with the General Plan and no alternative feasible measures have been identified by the City. Therefore, this impact is ***significant and unavoidable***.

RANCHO CORDOVA PARKWAY (PROJECT EXTENT)

In addition to roadway segment operations, the need to widen Rancho Cordova Parkway from two lanes to four lanes along the Project extents was analyzed between Existing (2017) and Cumulative (2040) Plus Project conditions. This trigger analysis incorporated not only the development assumptions that would increase traffic along this roadway segment, but also the connection of the roadway south to Grant Line Road and north to US-50. According to the analysis, the roadway segment would need to be widened by 2034; this would equate to approximately 570 single-family residential and 566 active adult residential dwelling units that can be constructed before the roadway segment is required to be widened. This is a potentially significant impact.

Mitigation Measure 3.13-9 requires the Project applicant to widen Rancho Cordova Parkway from two lanes to four lanes along the Project extents. With this improvement, this impact would be reduced to ***less than significant***.

TABLE 3.13-11: CUMULATIVE (2040) PLUS PROJECT ROADWAY SEGMENT LOS

ROADWAY SEGMENT	CUMULATIVE (2040) BASELINE					CUMULATIVE (2040) PLUS PROJECT					LOS THRESH-OLD
	# LANES	FACILITY TYPE	DAILY VOL.	V/C	LOS	# LANES	FACILITY TYPE	DAILY VOL.	V/C	LOS	
1. Jackson Rd/SR-16: Bradshaw Rd and Excelsior Rd	4	Arterial M	22,600	0.63	B	4	Arterial M	22,702	0.63	B	E
2. Jackson Rd/SR-16: Excelsior Rd and Eagles Nest Rd	4	Arterial M	22,740	0.63	B	4	Arterial M	22,945	0.64	B	E
3. Jackson Rd/SR-16: Eagles Net Rd and Sunrise Blvd	2	Rural Hwy	21,500	0.94	E	2	Rural Hwy	21,705	0.95	E	D
4. Jackson Rd/SR-16: Sunrise Blvd and Grant Line Rd	4	Arterial H	23,690	0.59	A	4	Arterial H	23,690	0.59	A	E
5. Excelsior Rd: Jackson Rd/SR-16 and Kiefer Blvd	2	Arterial M	8,950	0.50	A	2	Arterial M	8,950	0.50	A	E
6. Kiefer Blvd: Grant Line Rd and Jackson Rd/SR-16	2	Rural S	2,180	0.11	A	2	Rural S	2,282	0.11	B	D
7. International Dr: Zinfandel Dr and Sunrise Blvd	6	Arterial M	25,690	0.48	A	6	Arterial M	25,997	0.48	A	D
8. Mather Blvd: Femoyer St and Douglas Rd	4	Arterial M	20,870	0.58	A	4	Arterial M	22,406	0.62	B	D
9. Douglas Rd: Mather Blvd and Sunrise Blvd	4	Arterial M	37,150	**1.03**	**F**	4	Arterial M	39,915	**1.11**	**F**	D
10. Douglas Rd: Sunrise Blvd and Grant Line Rd	6	Arterial M	24,290	0.45	A	6	Arterial M	28,694	0.53	A	D
11. White Rock Rd: Zinfandel Dr and Sunrise Blvd	6	Arterial M	27,540	0.51	A	6	Arterial M	27,847	0.52	A	D
12. White Rock Rd: Sunrise Blvd and Grant Line Rd	6	Arterial M	16,960	0.31	A	6	Arterial M	16,960	0.31	A	E
13. White Rock Rd: Grant Line Rd and Prairie City Rd	4	Expwy	41,330	0.57	A	4	Expwy	42,559	0.59	A	D
14. Mather Field Rd: Folsom Blvd and US-50 WB Ramps	6	Arterial M	30,420	0.56	A	6	Arterial M	30,522	0.57	A	D
15. Mather Field Rd: US-50 WB Ramps and US-50 EB Ramps	6	Arterial M	43,380	0.80	D	6	Arterial M	44,199	0.82	D	D
16. Mather Field Rd: US-50 EB Ramps and International Dr	6	Arterial M	56,560	**1.05**	**F**	6	Arterial M	57,379	**1.06**	**F**	D
17. Zinfandel Dr: Folsom Blvd and US-50 WB Ramps	6	Arterial M	23,730	0.44	A	6	Arterial M	23,935	0.44	A	D
18. Zinfandel Dr: US-50 EB Ramps and White Rock Rd	6	Arterial M	72,230	**1.34**	**F**	6	Arterial M	73,152	**1.35**	**F**	D
19. Zinfandel Dr: White Rock Rd and International Dr	6	Arterial M	37,080	0.69	B	6	Arterial M	38,002	0.70	C	D
20. Zinfandel Dr: International Dr and Douglas Rd	4	Arterial M	21,600	0.60	A	4	Arterial M	22,829	0.63	B	D
21. Sunrise Blvd: US-50 WB Ramps and US-50 EB Ramps	6	Arterial M	71,160	**1.32**	**F**	6	Arterial M	71,979	**1.33**	**F**	D
22. Sunrise Blvd: US-50 EB Ramps to Folsom Blvd	6	Arterial M	58,150	**1.08**	**F**	6	Arterial M	58,969	**1.09**	**F**	D
23. Sunrise Blvd: Folsom Blvd and White Rock Rd	6	Arterial M	41,350	0.77	C	6	Arterial M	42,374	0.78	C	D
24. Sunrise Blvd: White Rock Rd and Douglas Rd	6	Arterial M	49,190	**0.91**	**E**	6	Arterial M	51,955	**0.96**	**E**	D
25. Sunrise Blvd: Douglas Rd and Jackson Rd/SR-16	4	Arterial M	45,470	**1.26**	**F**	4	Arterial M	46,085	**1.28**	**F**	D
26. Sunrise Blvd: Jackson Rd/SR-16 and Grant Line Rd	4	Arterial M	20,170	0.50	A	4	Arterial M	20,272	0.51	A	E
27. Grant Line Rd: White Rock Rd and Douglas Rd	4	Expwy	30,330	0.42	A	4	Expwy	31,559	0.44	A	D
28. Grant Line Rd: Douglas Rd and Jackson Rd/SR-16	4	Arterial H	29,380	0.73	C	4	Arterial H	30,814	0.77	C	D
29. Grant Line Rd: Jackson Rd/SR-16 and Sunrise Blvd	4	Arterial H	13,480	0.34	A	4	Arterial H	13,890	0.35	A	E

ROADWAY SEGMENT	CUMULATIVE (2040) BASELINE					CUMULATIVE (2040) PLUS PROJECT					LOS THRESH-OLD
	# LANES	FACILITY TYPE	DAILY VOL.	V/C	LOS	# LANES	FACILITY TYPE	DAILY VOL.	V/C	LOS	
30. Kiefer Blvd: Eagles Nest Rd and Sunrise Blvd	2	Arterial M	2,080	0.12	A	2	Arterial M	2,080	0.12	A	E
31. Kiefer Blvd: Sunrise Blvd and Rancho Cordova Pkwy	4	Arterial M	15,140	0.42	A	4	Arterial M	15,140	0.42	A	D
32. Kiefer Blvd: Rancho Cordova Blvd and Americanos Blvd	2	Arterial M	7,790	0.43	A	2	Arterial M	7,790	0.43	A	D
33. Kiefer Blvd: Americanos Blvd and Grant Line Rd	2	Arterial M	4,170	0.23	A	2	Arterial M	4,170	0.23	A	D
34. Chrysanthy Blvd: Sunrise Blvd and Rancho Cordova Pkwy	2	Arterial M	5,740	0.32	A	2	Arterial M	7,276	0.40	A	D
35. Chrysanthy Blvd: Rancho Cordova Pkwy and Americanos Blvd (Within Project)	2	Arterial M	6,150	0.34	A	2	Arterial M	14,651	0.81	D	D
36. Chrysanthy Blvd: Americanos Blvd and Grant Line Rd	2	Arterial M	7,070	0.39	A	2	Arterial M	8,606	0.48	A	D
37. Rancho Cordova Pkwy: Folsom Blvd and White Rock Rd	6	Arterial M	46,310	0.86	D	6	Arterial M	47,437	0.88	D	D
38. Rancho Cordova Pkwy: White Rock Rd and Rio Del Oro Pkwy	4	Arterial M	42,680	**1.19**	**F**	4	Arterial M	44,114	**1.23**	**F**	D
39. Rancho Cordova Pkwy: Rio Del Oro Pkwy and Douglas Rd	4	Arterial M	17,310	0.48	A	4	Arterial M	19,154	0.53	A	D
40. Rancho Cordova Pkwy: Douglas Rd and Chrysanthy Blvd	4	Arterial M	15,790	0.44	A	4	Arterial M	22,140	0.62	B	D
41. Rancho Cordova Pkwy: Chrysanthy Blvd and Kiefer Blvd	2	Arterial M	8,350	0.46	A	4	Arterial M	8,965	0.25	A	D
42. Rancho Cordova Pkwy: Kiefer Blvd and Grant Line Rd	2	Arterial M	7,190	0.40	A	2	Arterial M	7,600	0.42	A	D
43. Americanos Blvd: International Dr and Centennial Dr	2	Arterial M	4,850	0.27	A	2	Arterial M	4,850	0.27	A	D
44. Americanos Blvd: Centennial Dr and Douglas Rd	2	Arterial M	1,970	0.11	A	2	Arterial M	1,970	0.11	A	D
45. Americanos Blvd: Douglas Rd and Chrysanthy Blvd	2	Arterial M	4,850	0.27	A	2	Arterial M	5,055	0.28	A	D
46. Americanos Blvd: Chrysanthy Blvd and Kiefer Blvd	2	Arterial M	2,800	0.16	A	2	Arterial M	2,800	0.16	A	D

*NOTE: **BOLD** REPRESENTS UNACCEPTABLE OPERATIONS. SHADED REPRESENTS A POTENTIALLY SIGNIFICANT IMPACT.*

SOURCE: KIMLEY-HORN, 2018.

CONCLUSION

Under the Cumulative (2040) Plus Project condition, the addition of the Project results in potentially significant impacts at five study intersections, including: Intersection #10, Douglas Road at Zinfandel Drive, Intersection #11, Douglas Road at Sunrise Boulevard, Intersection #21, Sunrise Boulevard at White Rock Road, Intersection #25, Sunrise Boulevard at Zinfandel Drive and Intersection #27, White Rock Road at Prairie City Road, and two roadway segments, Roadway Segment #9, Sunrise Boulevard between White Rock Road and Douglas Road, and Roadway Segment #24, Sunrise Boulevard between White Rock Road and Douglas Road. The Project also results in a potentially significant impact to Rancho Cordova Parkway along the Project extent.

Mitigation Measure 3.13-7 would result in acceptable operations at Intersection #10 and Mitigation Measure 3.13-9 would widen Rancho Cordova Parkway to accommodate proposed and planned traffic. However, even with signal timing optimization, the impacts to Intersections #11, #21, and #25 would be significant. The improvement identified in Mitigation Measure 3.13-7 falls under the jurisdiction of the County; therefore, neither the City nor the Project applicant would have control over the timing or implementation of this improvement to Intersection #10. Further, Roadway Segment #24 has been built out consistent with the General Plan designation and additional capacity for this roadway is not envisioned by the General Plan. and, as discussed above, the City has determined that widening to larger than a 6-lane facility would conflict with bicycle and pedestrian use. While there may be potential to improve circulation conditions through additional connectivity along Sunrise Boulevard and further build out of the City's General Plan network, this would require an update to the General Plan to address long-range transportation planning to address adverse cumulative conditions regardless of Project implementation. Therefore, under the Cumulative (2040) Plus Project condition, impacts to Intersection #10, #11, #21, and #25 and Roadway Segment #24 would remain ***significant and unavoidable***. If the County allows the improvements Intersection #10 to move forward, the impacts would be classified as significant in the short-term, but eventually would be reduced to a less-than-significant level in the long-term.

MITIGATION MEASURE(S)

Mitigation Measure 3.13-6: *Intersection #10, Douglas Road at Zinfandel Drive: Prior to issuance of the occupancy permit for the 400th dwelling unit, the Project shall pay its fair-share for the westbound right turn to be converted from permitted to a free right turn with a receiving lane. The Project's fair share of the improvement is 10.61 percent.*

Mitigation Measure 3.13-7: *Intersection #27, White Rock Road at Prairie City Road: A second southbound right-turn lane shall be added at this intersection, and a right-turn overlap signal phase shall be added for the southbound right-turn. The Project's fair share of the improvement is 4.77 percent. The improvement fair-share shall be paid prior to issuance of the occupancy permit for the 400th dwelling unit.*

Mitigation Measure 3.13-8: *Roadway Segment #9, Douglas Road between Mather Boulevard and Sunrise Boulevard: Prior to issuance of the occupancy permit for the 400th dwelling unit, the Project*

shall pay its fair-share for the widening of Douglas Boulevard to six lanes. The Project's fair share of the improvement is 10.05 percent.

Mitigation Measure 3.13-9: *Rancho Cordova Parkway shall be widened from two to four lanes along the project extents. The improvement shall be reflected on the Project's improvement plans. The improvement shall be completed before the 570th market rate single family detached unit and the 566th age-restricted senior unit is constructed.*

Impact 3.13-3: Project implementation would not conflict with an applicable program, plan, ordinance, or policy addressing the transit system (Less than Significant)

Development in the Project area could result in an increase in demand for transit service. As noted previously, transit service in the City of Rancho Cordova is provided by SacRT (local) and Rancho CordoVan (paratransit). Additionally, the SacRT Gold Line light rail route follows US-50 in the City. These SacRT bus routes and the SacRT Gold Line do not directly serve the Project site. The Rancho CordoVan currently operates three routes that serve the Villages of Zinfandel (commonly known as Stone Creek), Anatolia neighborhoods, Kavala Ranch and Sunridge Park. These routes operate Monday through Friday in the mornings and evenings to provide access to light rail at the Zinfandel RT Light Rail Station.

The City's Transit Master Plan proposes a system of city, neighborhood and regional services, including a "Signature Service" to connect residents to businesses, shopping and recreation, and will provide a branding mechanism that will serve broader economic planning goals. As shown on Figure 1 of the Transit Master Plan, the Signature Service would generally follow Rancho Cordova Parkway, adjacent to the western boundary of the Project site and a Signature Transit Station is planned at the intersection of Chrysanthy Boulevard and Rancho Cordova Parkway. The Transit Master Plan does not contain policies for new development but does recommend that the City partner with the development community in the early stages of Project development in order to focus land use strategies that will support a robust transit system.

The City has reviewed the Project for consistency with the City's transit goals and requirements. The Project proposes a Signature Transit Station, consistent with the Transit Master Plan, and has implemented transit-supportive features. The Project would include ample pedestrian and bicycle amenities and connections. For example, one of the Project objectives is to implement the City's Bicycle and Pedestrian Master Plans through providing an on-site bicycle and pedestrian network that is accessible by the general public and provides opportunities for connectivity with bicycle and pedestrian facilities on adjacent properties. This extensive network provides non-vehicle connectivity throughout the site, as described in Chapter 2, and increases accessibility of the proposed transit station.

The Project also provides for high density development and a mix of uses, including the multifamily component and commercial components of the Project, adjacent the proposed Signature Transit Station, which will be located along Rancho Cordova Parkway south of Chrysanthy Boulevard.

The Project incorporates appropriate features to implement the City's Transit Master Plan and would not conflict with any applicable program, plan, ordinance, or policy addressing the transit system. Therefore, impacts associated with transit would be ***less than significant***.

Impact 3.13-4: Project implementation would not conflict with an applicable program, plan, ordinance, or policy addressing the bicycle and pedestrian system (Less than Significant)

The applicable bicycle and pedestrian system plans for the Project are the City's Bicycle Master Plan and the City's Pedestrian Master Plan. Additionally, Section 17.64.100 of the City's Municipal Code outlines the bicycle parking requirements for all new construction, additions of ten percent or more floor area to existing buildings, and changes in land use classification. Consistency with each Plan and the Municipal Code is discussed in detail below.

BICYCLE FACILITIES

Figure 4-1 of the Bicycle Master Plan shows pedestrian generators in the City. According to the figure, none of the pedestrian generators are located on or immediately adjacent to the Project site, although existing and future school and park areas to the west of the site are located in the Project vicinity. The Project would include pedestrian generators, such as park and recreational areas.

Additionally, Figure 4-3 of the Bicycle Master Plan shows the long-range vision of the City's regional trail system. A City Bike Route is shown traversing the Project site from the northeastern corner to the southwestern corner of the site. Other City Bike Routes and Regional Trails are also shown in the Project vicinity. The Project includes development of over two miles of bicycle facilities throughout the Project site, including several connections to existing and proposed regional trails. The Project is proposing to construct one 10-foot to 12-foot wide Class I bike trail connecting to an existing trail in the northeastern portion of the Project and two recreational trails connecting to pedestrian and bicycle facilities on the eastern and western portions of the Project. The Project proposes that these facilities be incorporated into the City's Bicycle Master Plan.

Further, Chapter 4 of the Bicycle Master Plan outlies the goals, programs, and projects of the Plan. Most of the goals are broad and not applicable to individual development projects. The goals that are most applicable to the Project include Goals 2 and 3, reproduced below:

> ***Goal 2:*** *Ensure new development extends the bicycle network to all neighborhoods and attractors.*
>
> ***Goal 3:*** *Ensure adequate support facilities throughout Rancho Cordova's bicycle network.*

As discussed above, the Project would include pedestrian generators (i.e., attractors), such as park and recreational areas. The Project proposes an extensive on- and off-street network of bike lanes and trails that extends to all neighborhoods and attractors and ensures connectivity between the residential uses, parks and recreation uses, and commercial uses, as well as providing connections to adjacent roadways to provide access for bicyclists accessing the Project from other areas.

With respect to providing support facilities, such as bicycle parking as required by the Municipal Code, the SPA Handbook requires bicycle support facilities to be included in the multifamily, parks, recreation, and commercial uses, indicating that bicycle support facilities shall include bicycle parking facilities and may include bicycle lockers, showers for employment-generating uses, or bicycle-related signage. It is anticipated that bicycle parking for the single-family homes would be provided in the garages of each unit. The Zoning Code notes that this is sufficient. The Project is consistent with the applicable requirements related to bicycle facilities and the impact would be ***less than significant***.

PEDESTRIAN FACILITIES

Chapter 3 of the Pedestrian Master Plan outlines the goals, programs, and projects of the Plan. Similar to the goals of the Bicycle Master Plan, most of the goals are broad and not applicable to individual development projects. The goals that are most applicable to the Project include Goals 1 and 3, reproduced below:

> ***Goal 1:*** *Improve the pedestrian network to increase pedestrian activity in Rancho Cordova.*
>
> ***Goal 3:*** *Establish and enhance routes to school that will enable and encourage more students to safely walk to school.*

The Project includes development of sidewalks, stop signs, standard pedestrian crossing warning signs, lane striping to provide a bicycle lane along applicable roadways, bicycle parking, signs to identify pedestrian and bicycle paths, pedestrian signal heads, and an off-street trail network. In addition, the Project will construct a tunnel crossing for the Class I trail Chrysanthy Boulevard within the Project site, three pedestrian push button crossings within the Project site, and one pedestrian push button crossing along Rancho Cordova Parkway adjacent to the Project site.

Sidewalks will be constructed as part of the frontage improvements along all new roadway construction for Jaeger Road/Rancho Cordova Parkway and Chrysanthy Boulevard in conformance with City design standards. Circulation and access to all proposed public spaces will include sidewalks that meet Americans with Disabilities Act standards. The proposed pedestrian facilities would increase pedestrian connectivity to existing and planned facilities and destinations in the City. Further, the proposed bicycle and pedestrian facilities could be used by existing and future students as routes to schools in the Project vicinity. Overall, the Project is consistent with applicable requirements related to pedestrian facilities and the impact would be would be **less than significant**.

Impact 3.13-5: Project implementation would not substantially increase hazards due to geometric design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) (Less than Significant)

No site circulation or access issues have been identified that would cause a traffic safety problem/hazard or any unusual traffic congestion or delay. The majority of the existing and future land uses would be compatible with the Project uses (i.e., residential, commercial, and public/quasi-public uses). While there are agricultural uses, primary livestock grazing, in the Project vicinity, the

Project does not have any features that are anticipated to result in any substantial increase in hazards associated with such uses.

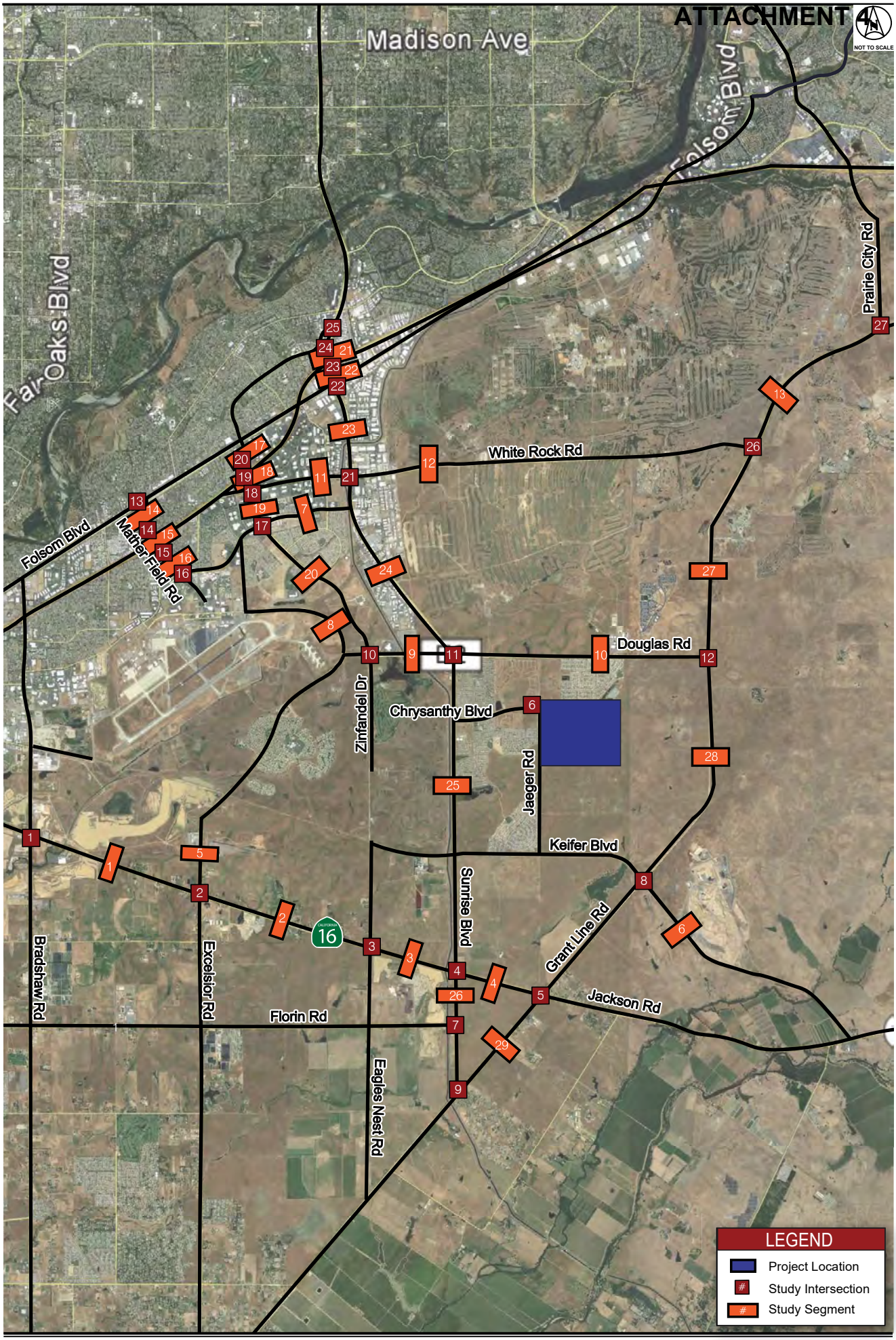
All accesses, roads, and intersections would be designed to City standards that accommodate turning requirements for fire trucks, emergency services vehicles, and other large vehicles. There are no safety, capacity, or sight distance issues identified for the Project access roadways. Therefore, impacts associated with design features and emergency access would be considered ***less than significant*.**

Impact 3.13-6: Project implementation would result in adequate emergency vehicle access (Less than Significant)

On-site infrastructure associated with the Project would include the construction of internal and external access roads and a network of bicycle and pedestrian trails. Primary access would be from Rancho Cordova Parkway. The Project would provide for future connections to an extension of Chrysanthy Boulevard east of the Project site.

The site plan for the Project was qualitatively reviewed by Kimley-Horn for general access and on-site circulation. According to the site plan, primary access to the site will be provided from Chrysanthy Boulevard at the intersection of Rancho Cordova Parkway/Jaeger Road. The combination of these access points, as well as the on-site circulation system, appears to provide adequate access to/from Chrysanthy Boulevard, Rancho Cordova Parkway and the surrounding transportation network. Additional access will be provided in the future as Chrysanthy Boulevard, Rancho Cordova Parkway, and Americanos Boulevard are constructed and extended. Sacramento Metropolitan Fire Department and the Rancho Cordova Police Department have reviewed the Project application and tentative subdivision map in 2018 and their requirements regarding access, including roadway widths, entry widths, access to courts and dead-end streets, have been incorporated into the proposed Tentative Subdivision Map and more detailed requirements are required as standard Conditions of Approval to ensure that the standard requirements are reflected on improvement plans. Therefore, this is considered a ***less than significant*** impact.

ATTACHMENT 4



Kimley»Horn

Figure 3.13-1
Existing (2017) Project Vicinity Map

This page left intentionally blank.

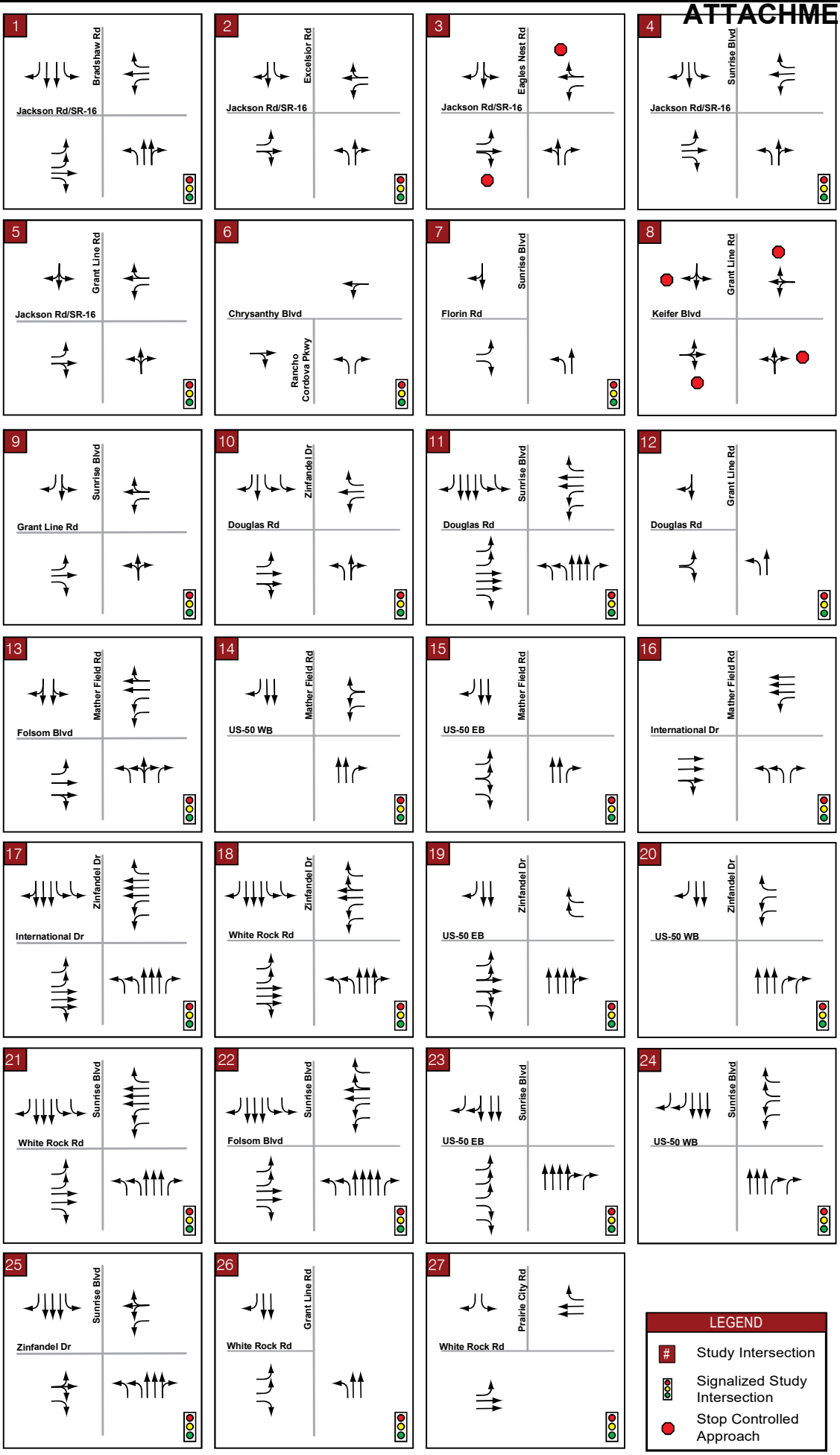
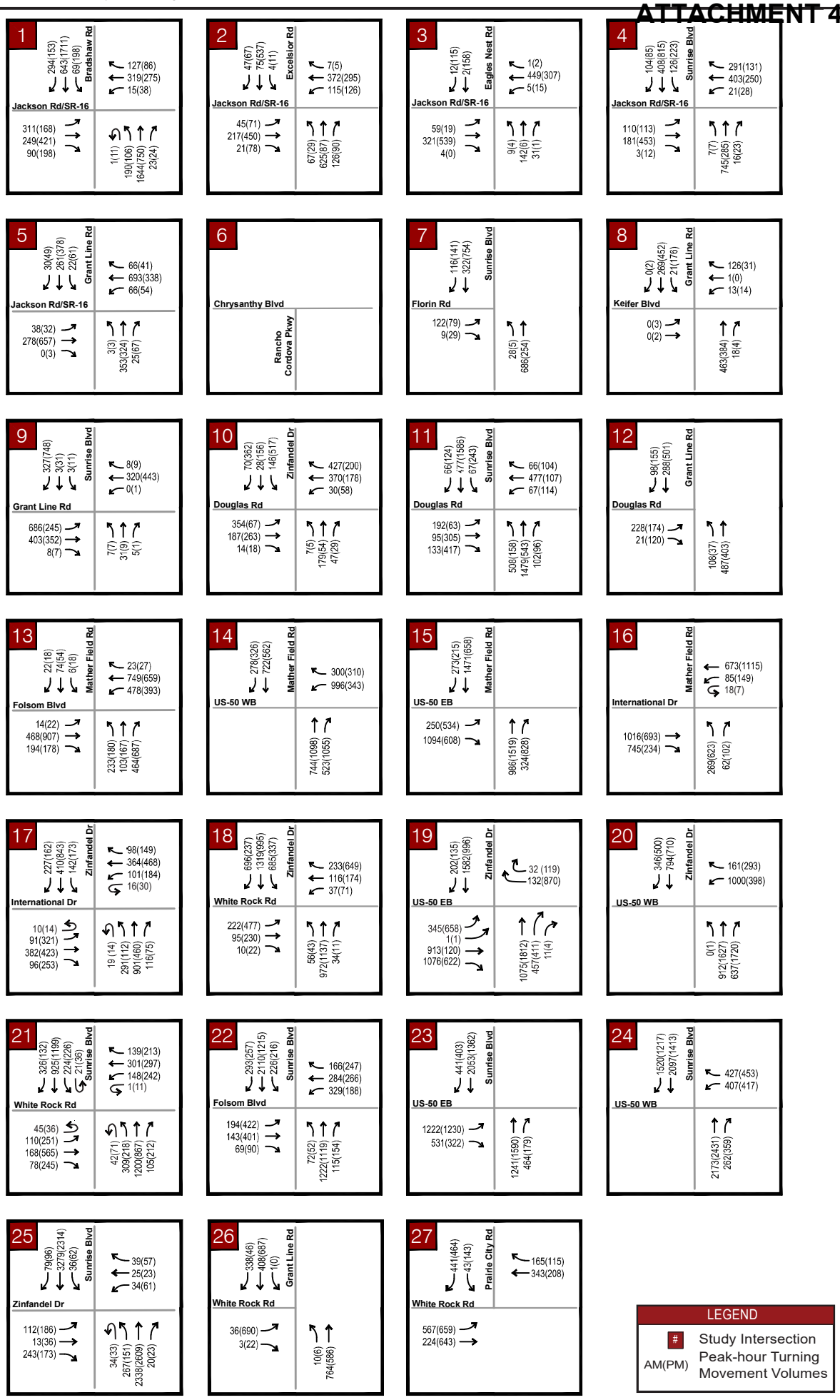


Figure 3.13-2
Existing (2017) Study Intersections, Traffic Control, and Lane Geometrics

This page left intentionally blank.

ATTACHMENT 4



This page left intentionally blank.

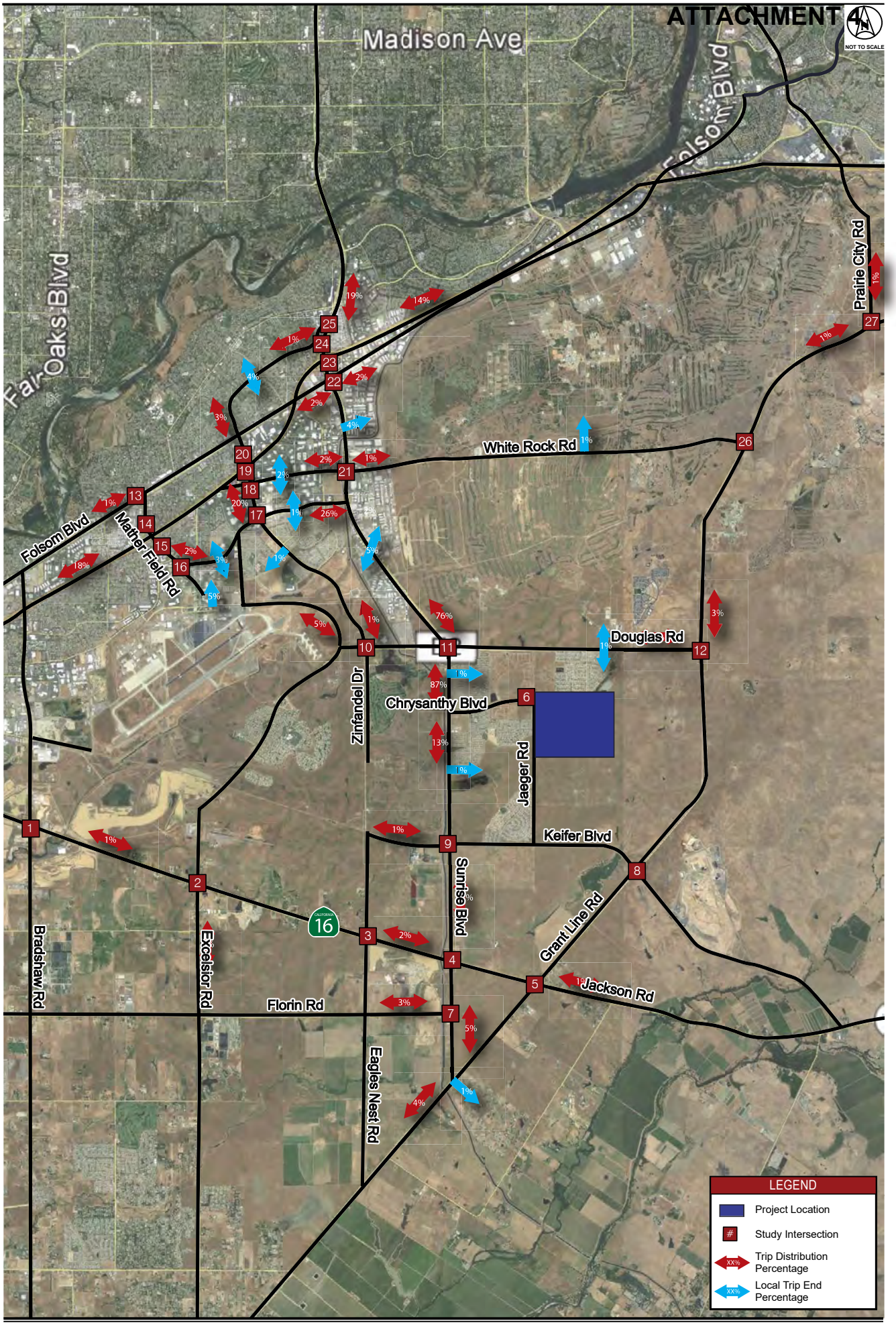
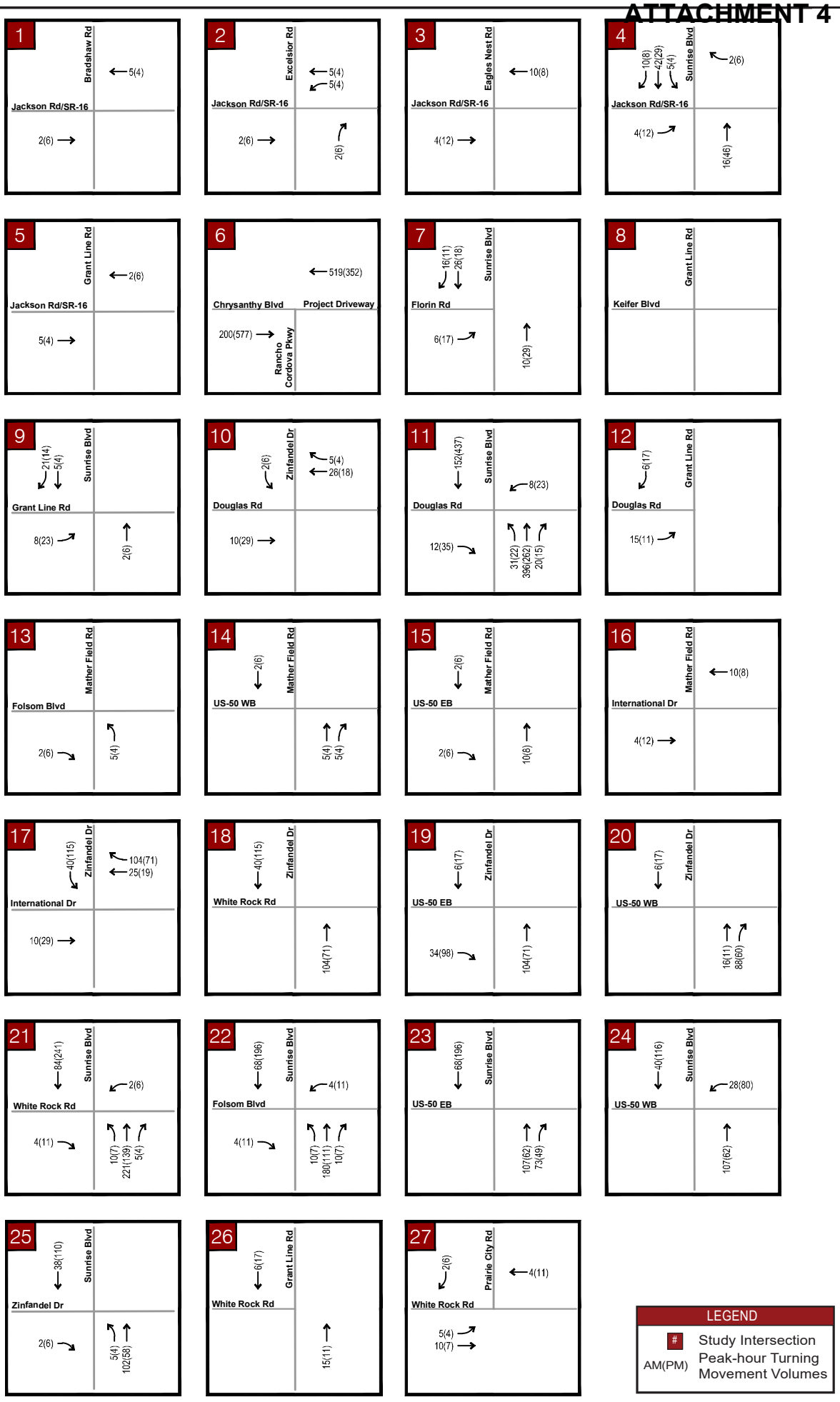


Figure 3.13-4
Existing (2017) Project Trip Distribution

This page left intentionally blank.

ATTACHMENT 4



This page left intentionally blank.

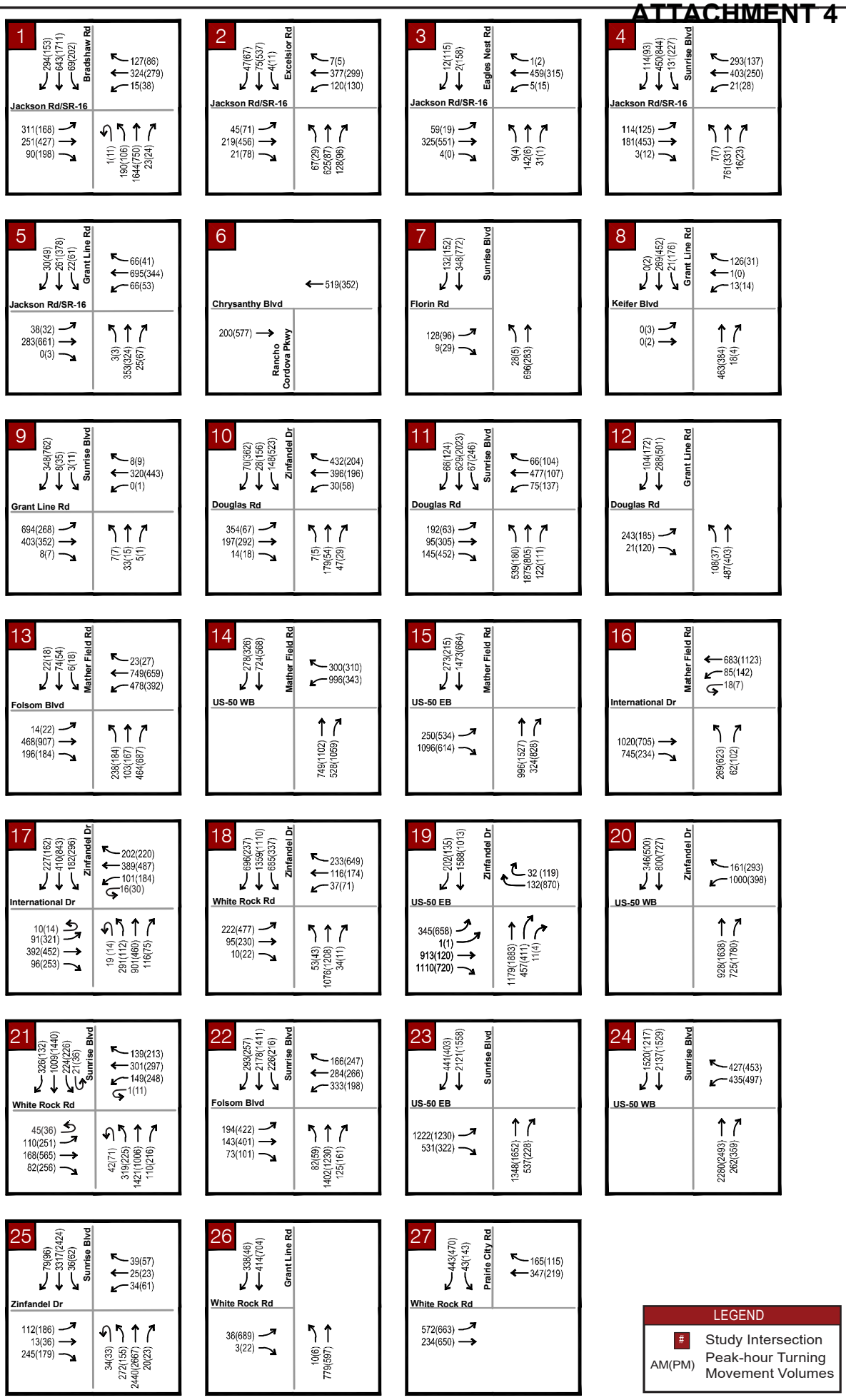


Figure 3.13-6
Existing (2017) Plus Proposed Project Peak Hour Traffic Volumes

This page left intentionally blank.

ATTACHMENT 4

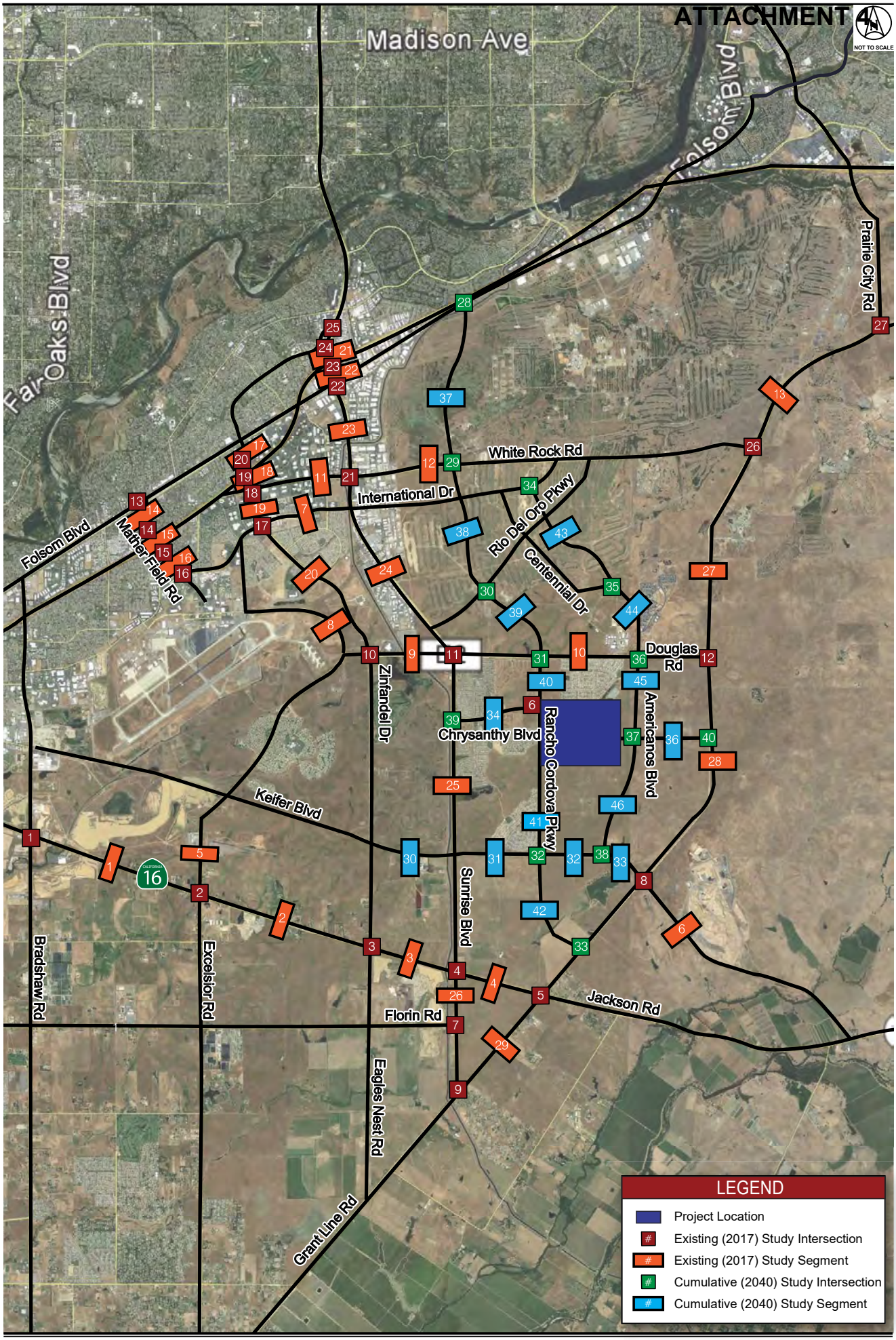
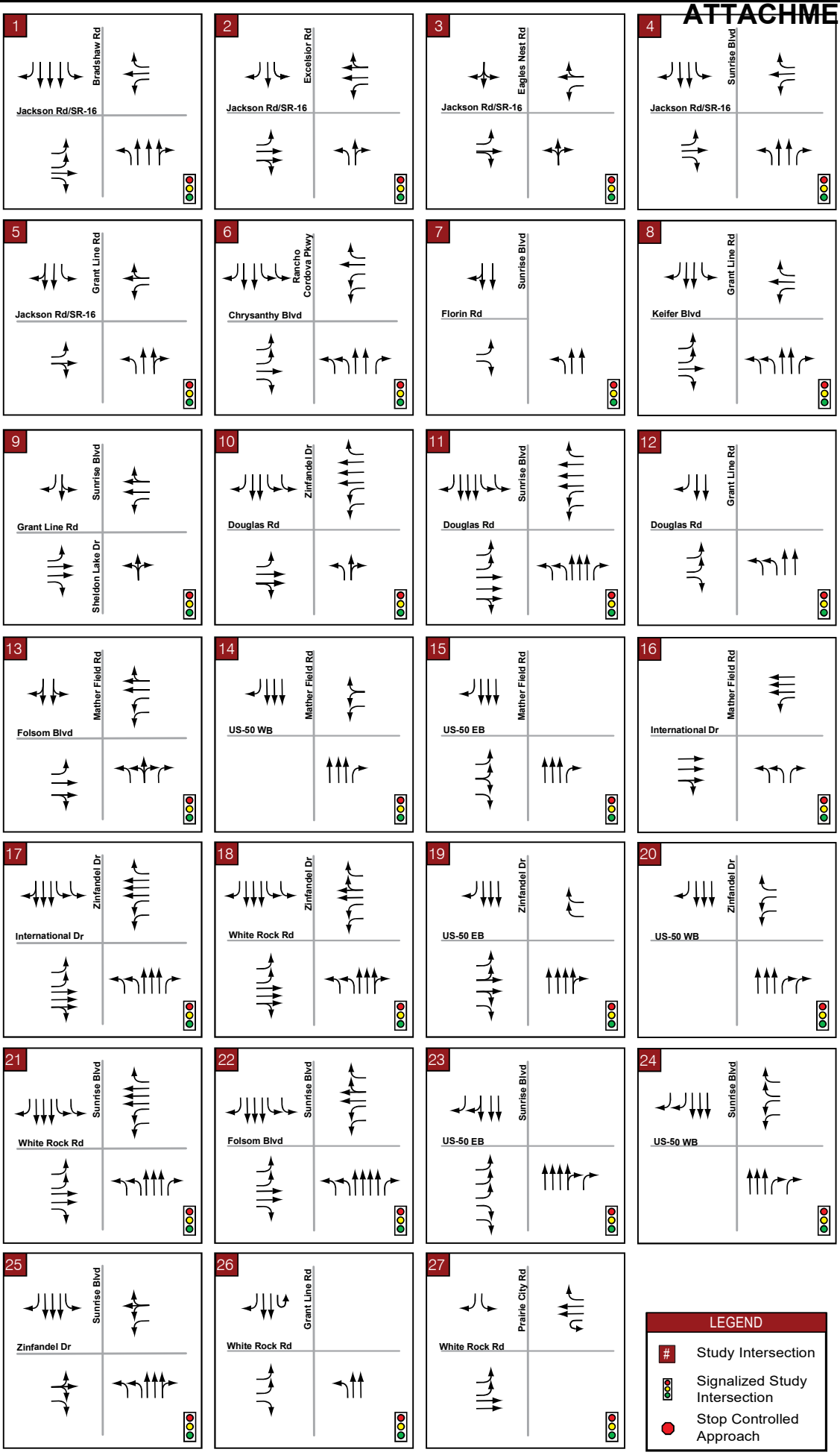


Figure 3.13-7
Cumulative (2040) Study Intersections, Interchanges, and Count Locations

This page left intentionally blank.

ATTACHMENT 4



This page left intentionally blank.

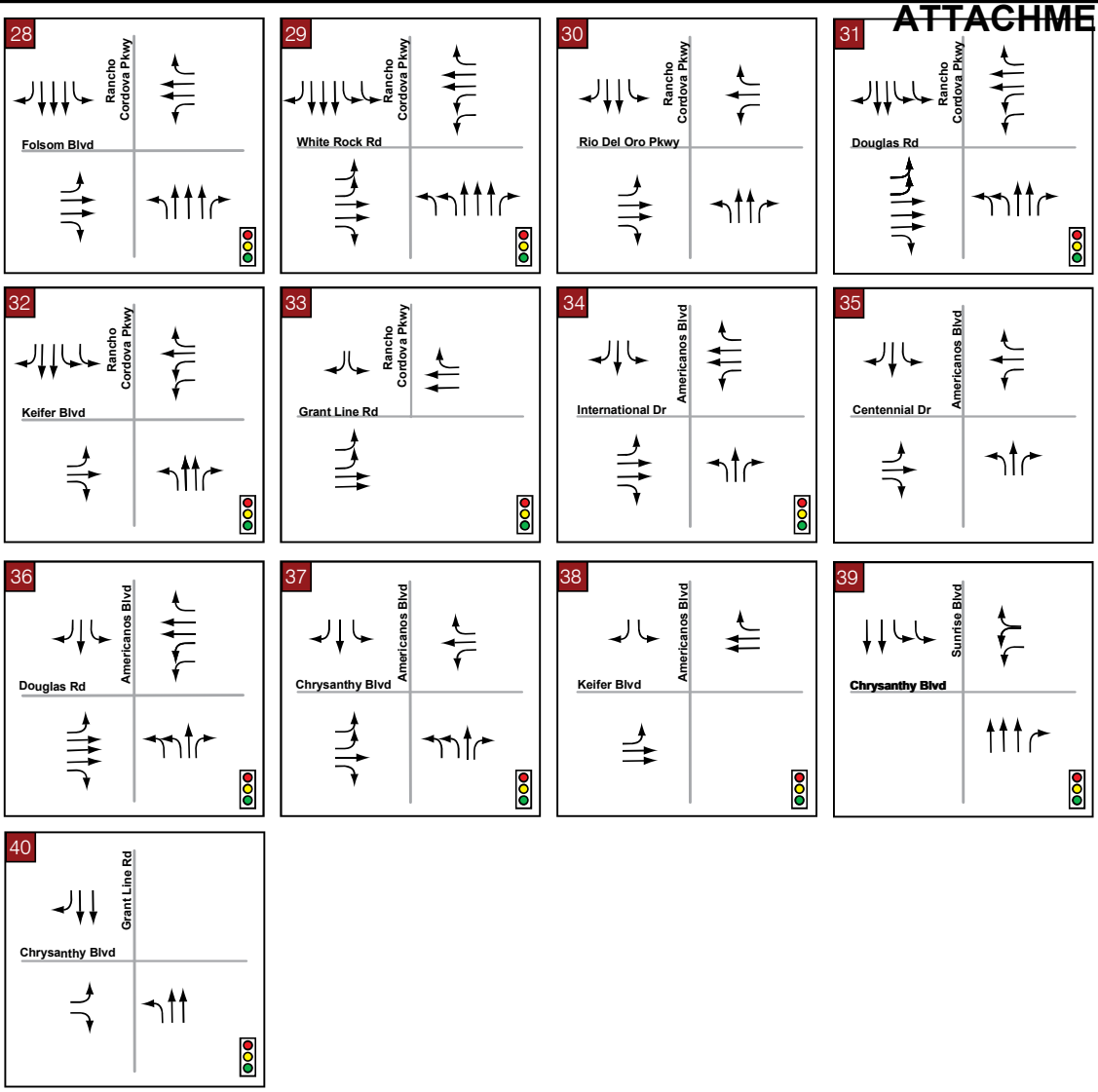
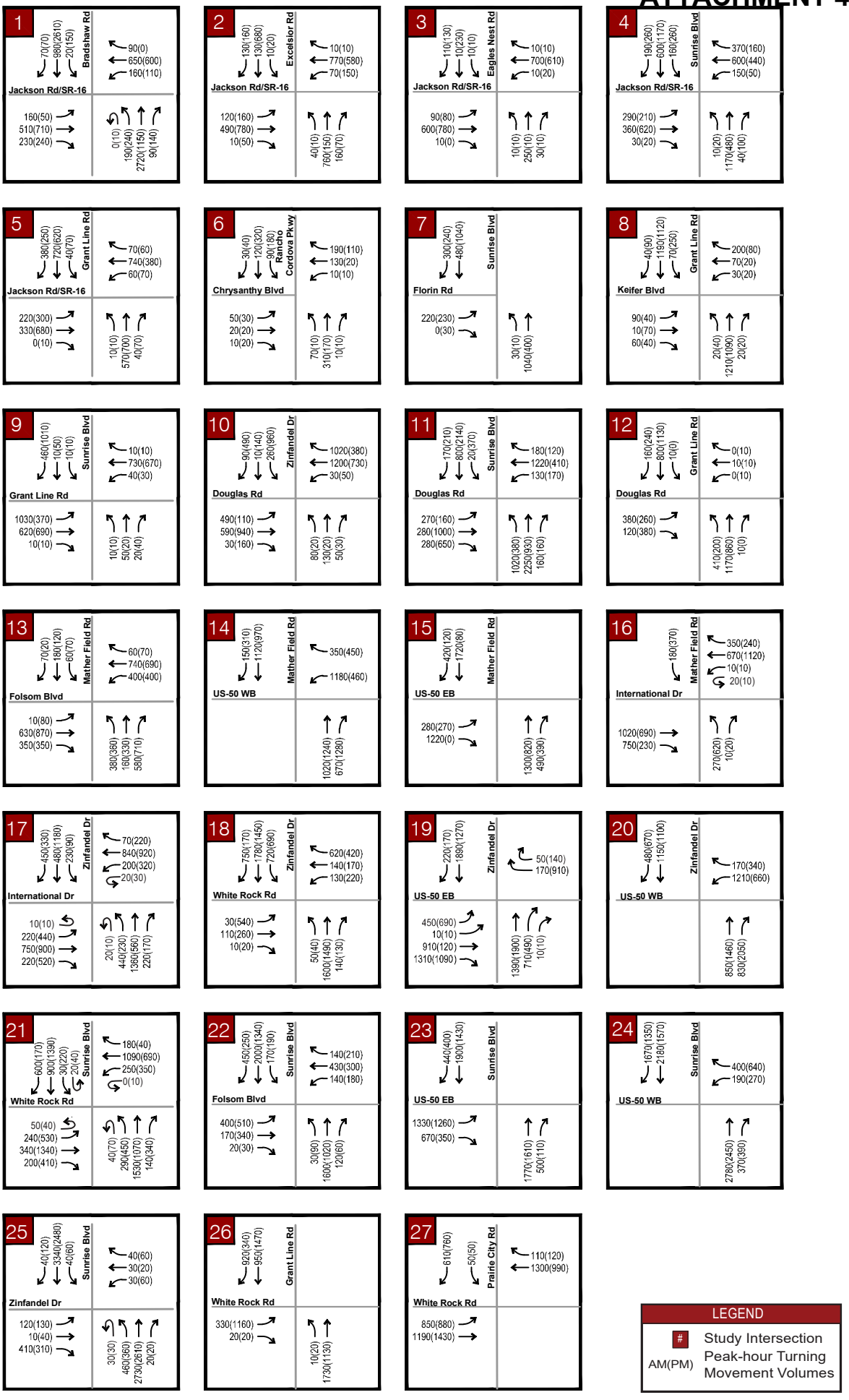


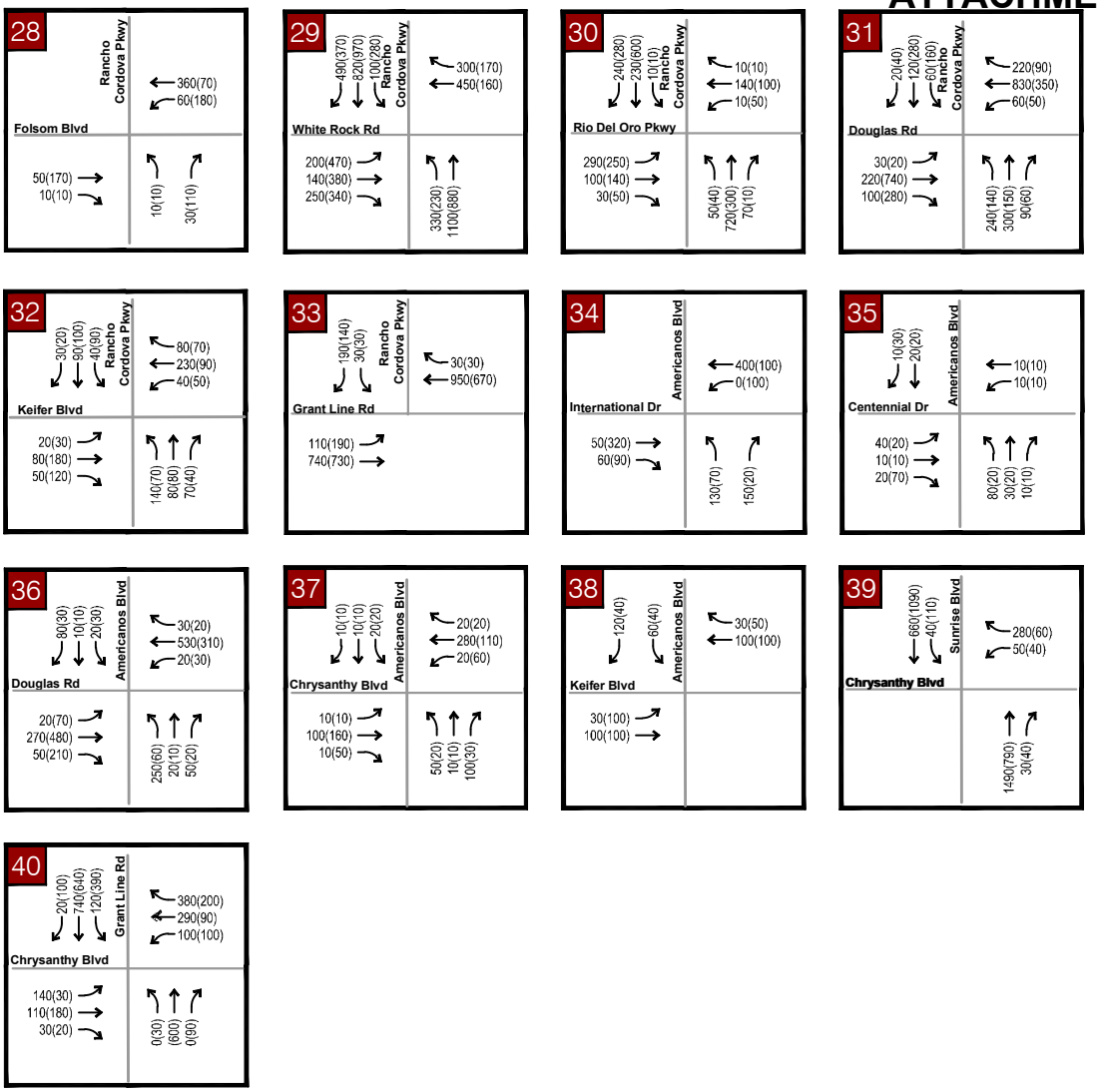
Figure 3.13-8b
Cumulative (2040) Study Intersections, Traffic Control, and Lane Geometries (Continued)

This page left intentionally blank.

ATTACHMENT 4



This page left intentionally blank.

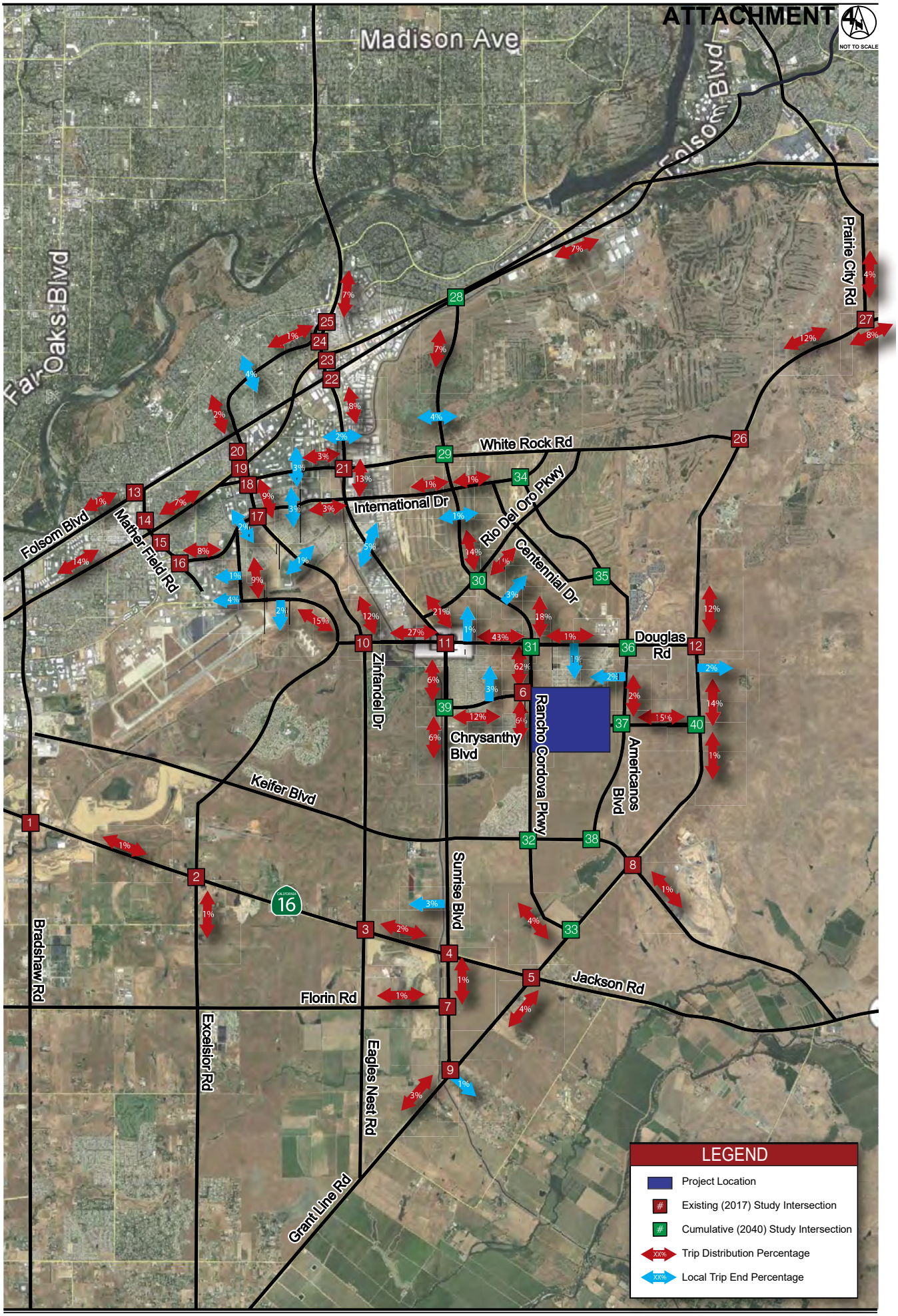


LEGEND

#	Study Intersection
AM(PM)	Peak-hour Turning Movement Volumes

Figure 3.13-9b
Cumulative (2040) Peak Hour Traffic Volumes (Continued)

This page left intentionally blank.

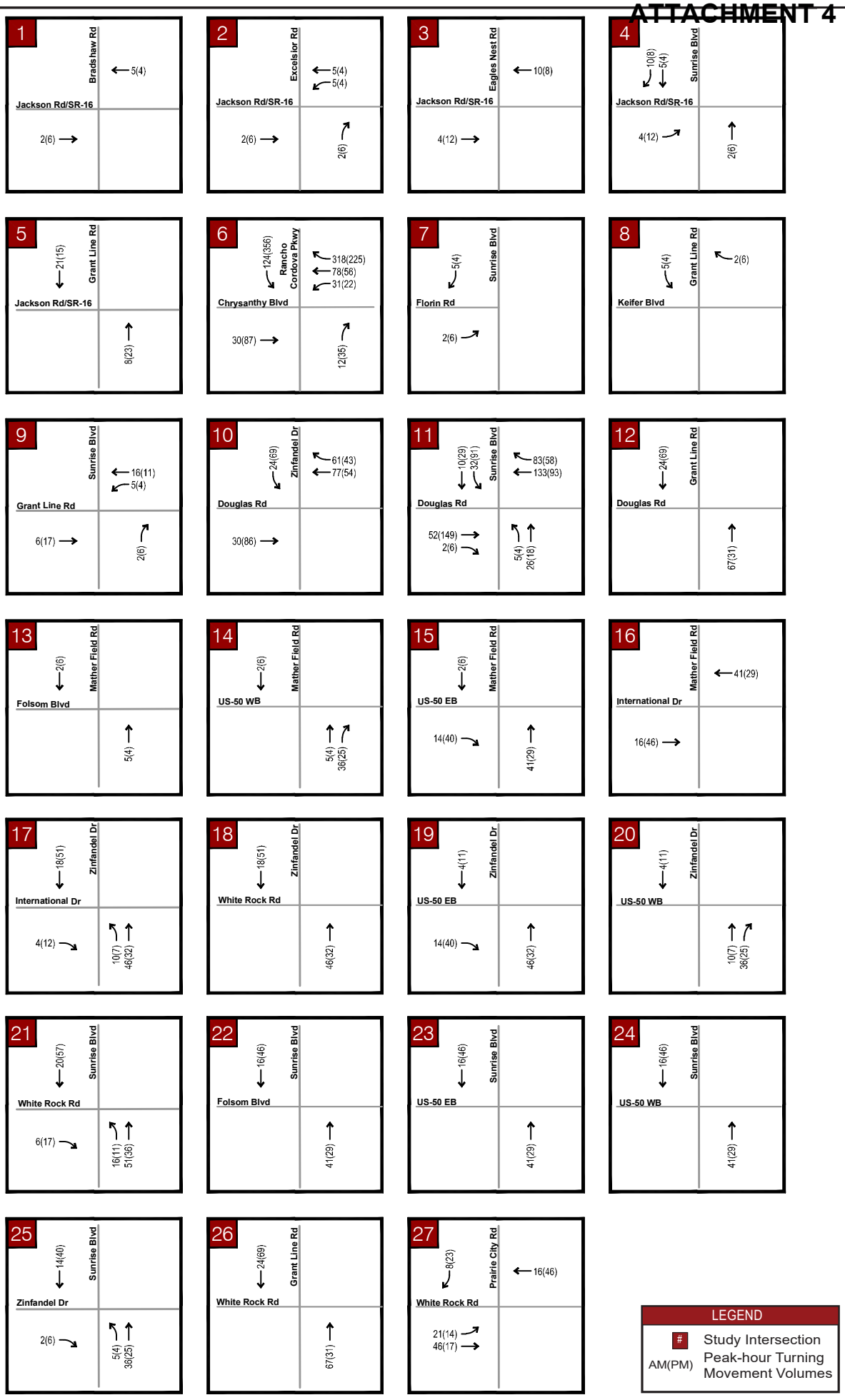


Kimley»Horn

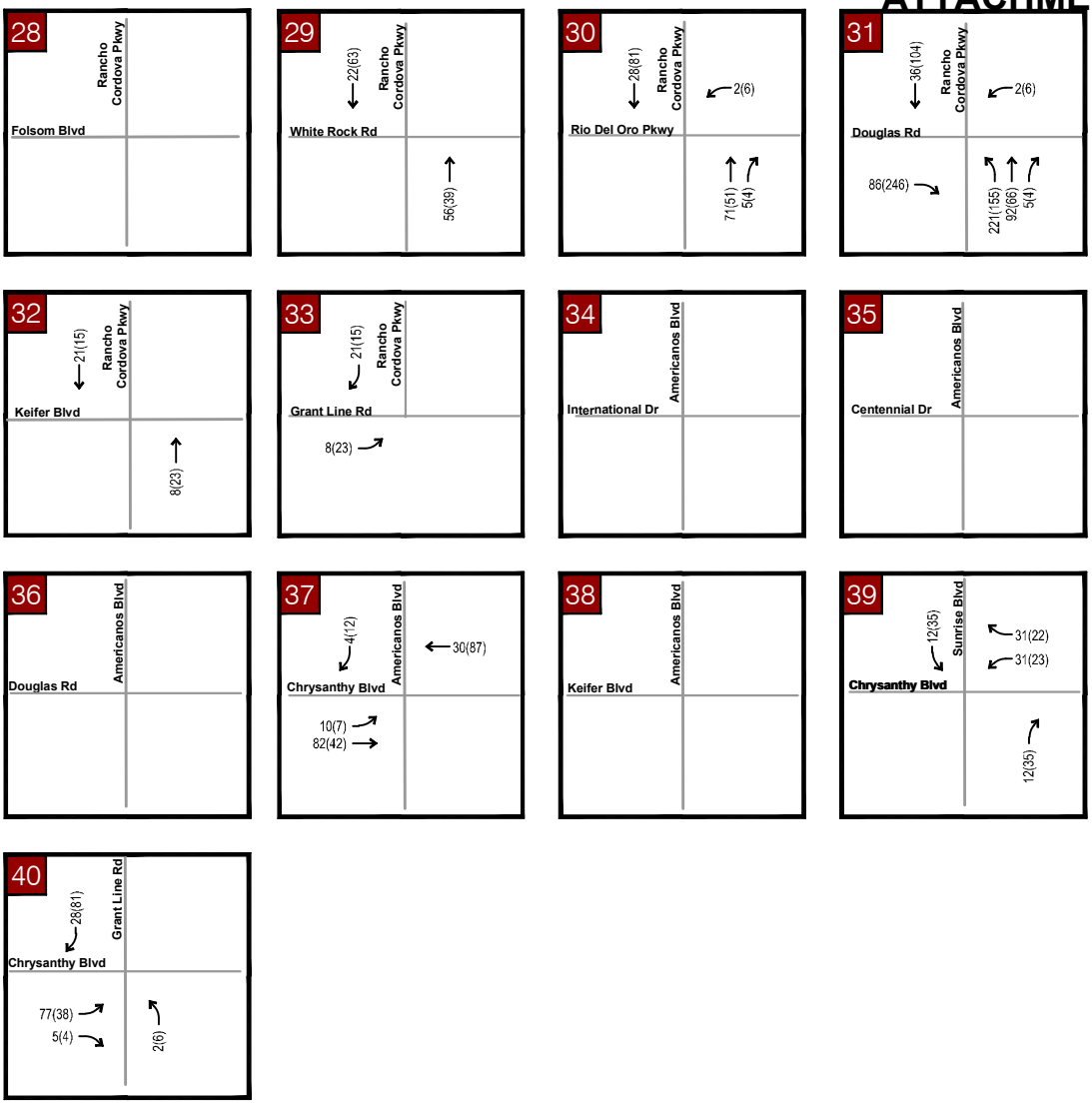
Figure 3.13-10
Cumulative (2040) Project Trip Distribution

This page left intentionally blank.

ATTACHMENT 4



This page left intentionally blank.



LEGEND

#	Study Intersection
AM(PM)	Peak-hour Turning Movement Volumes

Figure 3.13-11b
Cumulative (2040) Project Trip Assignment (Continued)

This page left intentionally blank.

ATTACHMENT 4

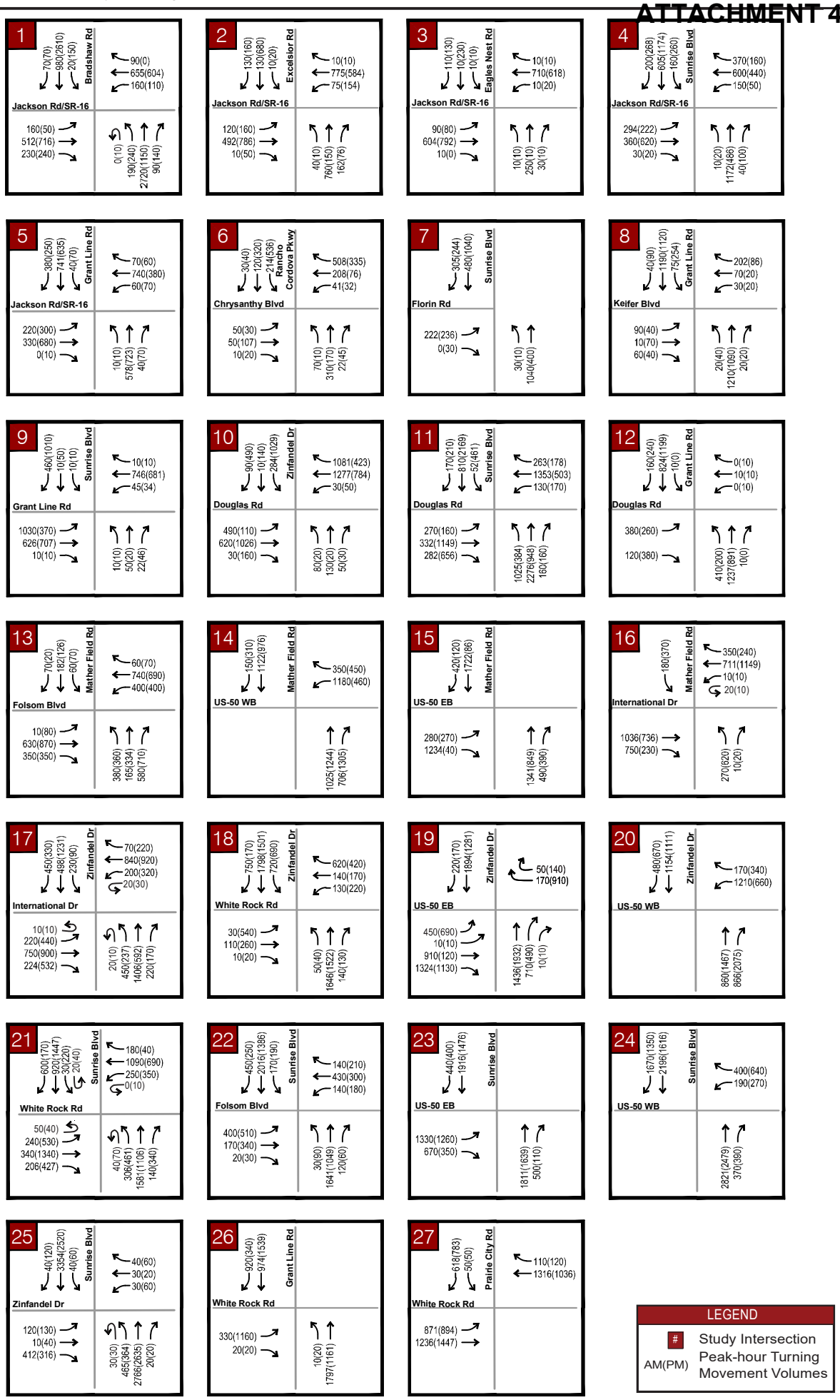
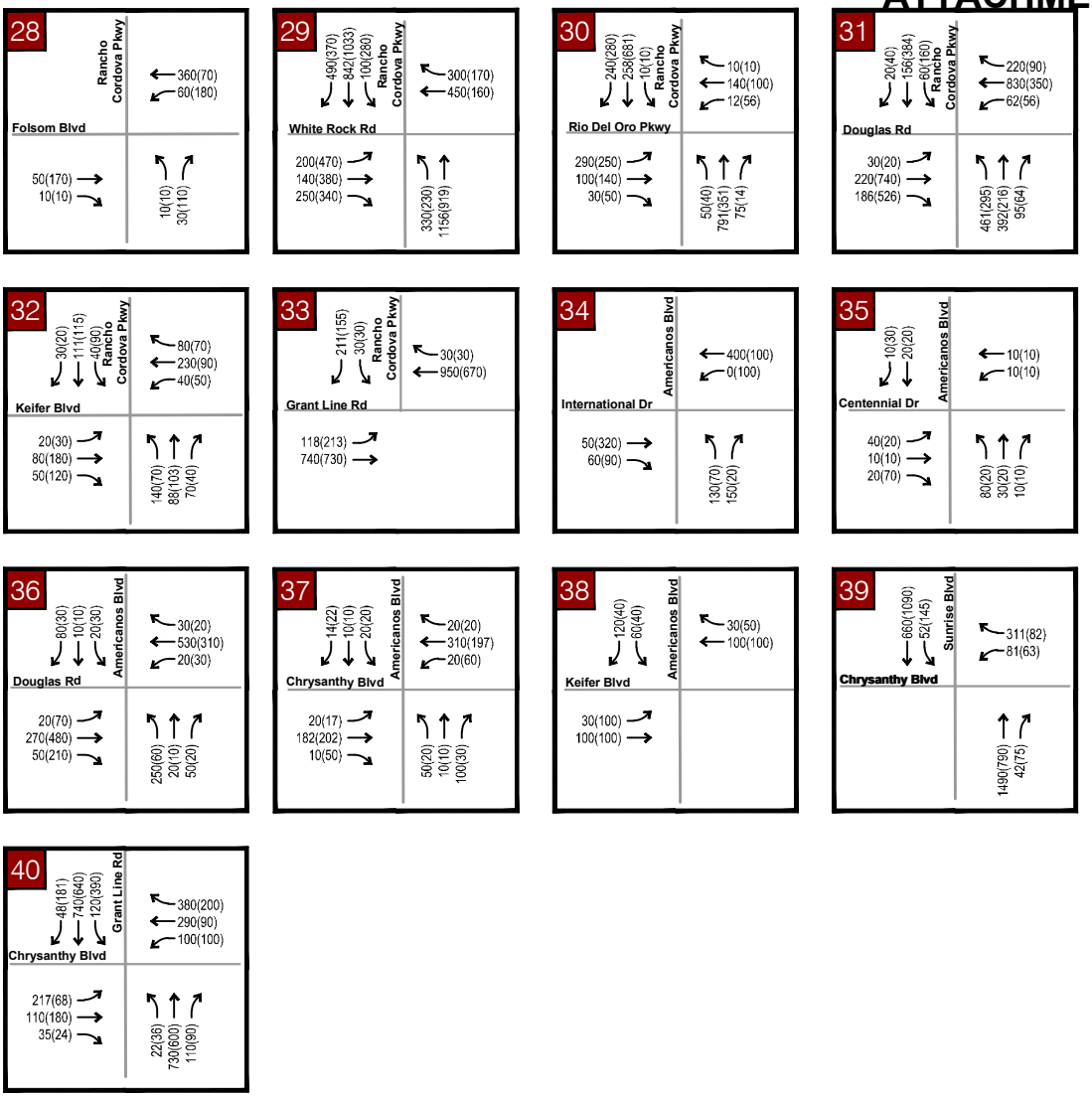


Figure 3.13-12a
Cumulative (2040) Plus Project Traffic Volumes

This page left intentionally blank.



LEGEND

Study Intersection

AM(PM) Peak-hour Turning Movement Volumes

Figure 3.13-12b

Cumulative (2040) Plus Project Traffic Volumes (Continued)

This page left intentionally blank.

This section describes the regulatory setting, impacts associated with wastewater services, water services, and solid waste disposal that are likely to result from Project implementation, and measures to reduce potential impacts to wastewater, water supplies and solid waste. A discussion of the proposed project's storm drainage and flood control facilities is included in Section 3.8, Hydrology and Water Quality. Therefore, storm water drainage and infrastructure are not addressed in this EIR section. This section is based in part on the following documents, reports and studies:

- *Rancho Cordova General Plan* (City of Rancho Cordova, Adopted June 26, 2006);
- *Rancho Cordova General Plan Draft Environmental Impact Report* (City of Rancho Cordova, March 2006);
- Sacramento County Water Agency Water Supply Assessment for The Ranch at Sunridge (Sacramento County Water Agency, 2011);
- *Sunrise Douglas Community Plan/Sun Ridge Specific Plan Long-Term Water Supply Plan Revised Draft EIR* (AECOM, January 2011);
- *Sunrise Douglas Community Plan/Sun Ridge Specific Plan Long-Term Water Supply Plan Final EIR* (AECOM, October 2011);
- The Ranch Level 2 Sewer Study, 5th Submittal (CTA Engineering & Surveying, 2019);
- *Sacramento County Water Agency 2015 Urban Water Management Plan* (SCWA, 2016);
- *Zone 40 Water Supply Master Plan Amendment for the Cordova Hills Project* (SCWA, 2011);
- *Sacramento Area Sewer District Sewer System Management Plan* (SASD, 2019);
- *Sacramento Area Sewer District Sewer System Capacity Plan* (SASD, 2011); and
- *Sacramento Regional County Sanitation District 10-year Strategic Plan 2016-2026* (Regional San, 2016).

Comments were received during the public review period for the Notice of Preparation regarding this topic from the following: Central Valley Regional Water Quality Control Board (RWQCB) (July 2018), and Sacramento Area Sewer District (August 2018). Each of the comments related to this topic are addressed within this section.

3.14.1 WASTEWATER SERVICES

EXISTING SETTING

Wastewater Conveyance and Treatment

Sanitary-sewer service for the Project would be provided by Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (Regional San). SASD operates and maintains the laterals and main line pipes for wastewater conveyance and collection from the source to the Regional San interceptors. Regional San is responsible for collection by interceptors (sanitary sewers that are designed to carry flows in excess of 10 million gallons per day [mgd]) and for wastewater treatment in Sacramento County. This district owns, operates, and is responsible for the collection, trunk, and interceptor sewer systems throughout Sacramento County as well as the Sacramento Regional Wastewater Treatment Plant (SRWTP) located near Elk Grove.

3.14 UTILITIES

The main SASD collection system includes over 3,000 miles of sewer pipelines ranging in size from 6 to 75 inches in diameter. The collection system pipelines are categorized based on size, function, and hydraulic capacity. Sewer collectors generally receive flow directly from individual homes and businesses and are designed to carry less than one mgd of peak wet-weather flow (PWWF). In general, collector sewers are 10 inches and smaller in diameter and comprise the majority (over 85 percent) of the pipes in the collection system. Trunk sewers carry one mgd of PWWF or more to the Regional San interceptor system. Trunk sewers are generally 12 inches in diameter.

Regional San evaluated the environmental impacts of constructing trunk and interceptor sewers that would serve most of the Sacramento region (including the Project) at a program level in the *Sacramento Regional County Sanitation District Interceptor Master Plan 2000, Draft Program Environmental Impact Report* (State Clearinghouse [SCH] #2001112085). The EIR was certified by Regional San and the master plan was approved in March 2003.

The purpose of the *Sacramento Regional County Sanitation District Interceptor System Master Plan 2000* (Regional San 2003a) (Regional San Interceptor Master Plan 2000) is to identify near- and long-term improvements needed for the regional wastewater conveyance system. The master plan describes the regional interceptor projects, along with their timing and costs, so that existing and future deficiencies in the regional system can be more accurately identified and predicted and strategic approaches to remedying these deficiencies can be developed. The plan uses information regarding population growth, wastewater flow generation, and actual system responses to wet weather.

Wastewater flows collected from the Regional San interceptors are ultimately transported into the SRWTP. Wastewater conveyed to the SRWTP is treated to a secondary level and is ultimately discharged into the Sacramento River. Currently, the SRWTP has a National Pollutant Discharge Elimination System (NPDES) permit issued by the Central Valley RWQCB for discharge of up to 181 mgd of treated effluent into the Sacramento River.

The *Sacramento Regional Wastewater Treatment Plant 2020 Master Plan* (Regional San 2001) (2020 Master Plan) provides a phased program of recommended wastewater treatment facilities and management programs to accommodate planned growth and to meet existing and anticipated regulatory requirements through the year 2020. The master plan addresses both public health and environmental protection issues while providing reliable service at affordable rates for Regional San customers. The key goals of the master plan are to provide sufficient capacity to meet growth projections and an orderly expansion of SRWTP facilities, comply with applicable water quality standards, and provide for the most cost-effective facilities and programs from a watershed perspective.

The 2020 Master Plan relies on the Sacramento Area Council of Government's (SACOG's) population projections to determine SRWTP capacity requirements within the Regional San service area, which includes the Project, through 2020 (Regional San 2003b:3-22). The 2020 Master Plan projected that the population in the Regional San service area would be 1,549,502 persons by 2020 (Regional San 2003b:5-5). The population projections used in the master plan do not

represent a buildout population total for Regional San; rather, they represent the amount of growth expected within the Regional San service area.

Wastewater flows increased relatively rapidly after the SRWTP first opened in the 1980s, with continued growth through the early 2000s and reached a peak of around 155 mgd ADWF around 2005. Since that time, flows have been substantially reduced through water conservation, closure of water intensive industries, and other factors. In 2010, the WRWTP treated approximately 141 mgd average dry weather flow (ADWF) (Regional San, Echo Water Project Draft EIR, 2014). In recent years, ADWFs have ranged from approximately 120 mgd (as reported in Order R5-2016-0020 (NPDES NO. CA0077682)) to 127 mgd, as reported in the 2017 State of the District Report, (Regional San, 2017) and Final Budget Fiscal Year 2018-19 (Regional San, 2018). In development of the Echo Water Project Draft EIR, the District reviewed its projections and concluded that 181 mgd ADWF provides sufficient capacity for the next 40 plus years (Regional San, Echo Water Project Draft EIR, 2014).

Order R5-2016-0020 (NPDES NO. CA0077682) regulates the discharge of secondary treated municipal wastewater and allows an average dry weather discharge flow of 181 mgd to the Sacramento River, within the Sacramento-San Joaquin Delta (Delta). The existing secondary treatment at the SRWTP consists of preliminary screening and grit removal, primary sedimentation, a pure oxygen activated sludge treatment system, and chlorination for disinfection and dechlorination. SRWTP's current permitted discharge is 181 mgd (average dry weather flow) and flows at the time of Order R5-2016-0200 averaged 120 mgd. Regional San is currently upgrading the SRWTP to replace the pure oxygen activated sludge system with a biological nutrient removal activated sludge system in order to meet new effluent limits for ammonia and nitrate by May 11, 2021. In addition, tertiary filtration facilities and chlorine contact chamber will be added to meet new disinfection requirements by May 9, 2023.

REGULATORY SETTING - WASTEWATER

Clean Water Act (CWA) / National Pollutant Discharge Elimination System (NPDES) Permits

The CWA is the cornerstone of water quality protection in the United States. The statute employs a variety of regulatory and non-regulatory tools to sharply reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. These tools are employed to achieve the broader goal of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters so that they can support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water."

The CWA regulates discharges from "non-point source" and traditional "point source" facilities, such as municipal sewage plants and industrial facilities. Section 402 of the Act creates the NPDES regulatory program which makes it illegal to discharge pollutants from a point source to the waters of the United States without a permit. Point sources must obtain a discharge permit from the proper authority (usually a state, sometimes EPA, a tribe, or a territory). NPDES permits cover industrial and municipal discharges, discharges from storm sewer systems in larger cities, storm

water associated with numerous kinds of industrial activity, runoff from construction sites disturbing more than one acre, mining operations, and animal feedlots and aquaculture facilities above certain thresholds.

Permit requirements for treatment are expressed as end-of-pipe conditions. This set of numbers reflects levels of three key parameters: (1) biochemical oxygen demand (BOD), (2) total suspended solids (TSS), and (3) pH acid/base balance. These levels can be achieved by well-operated sewage plants employing "secondary" treatment. Primary treatment involves screening and settling, while secondary treatment uses biological treatment usually in the form of "activated sludge."

All so-called "indirect" dischargers are not required to obtain NPDES permits. An indirect discharger is one that sends its wastewater into a city sewer system, so it eventually goes to a sewage treatment plant. Although not regulated under NPDES, "indirect" discharges are covered by another CWA program called pretreatment. "Indirect" dischargers send their wastewater into a city sewer system, which carries it to the municipal sewage treatment plant, through which it passes before being discharged to surface water.

Rancho Cordova General Plan

The Rancho Cordova General Plan contains the following goal and policies that are relevant to wastewater:

INFRASTRUCTURE, SERVICES, AND FINANCE ELEMENT

Goal ISF.2: Ensure the development of quality infrastructure to meet community needs at the time they are needed.

> **Policy ISF.2.1:** Ensure the development of public infrastructure that meets the long-term needs of residents and ensure infrastructure is available at the time such facilities are needed.
>
> **Policy ISF.2.2:** Coordinate with independent public service providers, including schools, parks and recreation, utility, transit, and other service districts, in developing service and financial planning strategies.
>
> **Policy ISF.2.3:** Ensure that adequate funding is available for all infrastructure and public facilities, and make certain that the cost of improvements is equitably distributed.
>
> **Policy ISF.2.4:** Ensure the development of public infrastructure that meets the long-term needs of residents and ensure infrastructure is available at the time such facilities are needed.
>
> **Policy ISF.2.6:** Ensure that sewage conveyance and treatment capacity are available in time to meet the demand created by new development, or are guaranteed to be built by bonds or other sureties.

THRESHOLDS OF SIGNIFICANCE - WASTEWATER

Consistent with Appendix G of the CEQA Guidelines, the Project will have a significant impact on the environment associated with wastewater facilities if it will:

1. Require or result in the relocation or construction of new or expanded wastewater facilities, the construction or relocation of which could cause significant environmental effects; and/or
2. Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments.

IMPACTS AND MITIGATION MEASURES

Impact 3.14-1: The Project would not result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments, or require or result in the relocation or construction of new or expanded wastewater facilities, the construction or relocation of which could cause significant environmental effects (Less than Significant)

The SASD manages the local pipe system for the collection of wastewater in most of Sacramento County, but does not treat the wastewater. Once the wastewater reaches the Regional San interceptors and pipes, Regional San manages and treats the wastewater. New sewer conveyance pipelines would be provided within the Project site, primarily within the roadway right-of-ways, to serve the proposed development. The Project would connect to existing SASD sewer infrastructure located at the intersection of Rancho Cordova Parkway and Chrysanthy Boulevard. Sewer flows from the Project would be conveyed by SASD facilities to Regional San interceptor, collector, and trunk facilities and would then be conveyed to the SRWTP for treatment. Off-site improvements may include upgrades to the existing sewer lift station that serves the eastern part of Rancho Cordova. The impacts of development of the proposed wastewater system are discussed throughout this EIR.

Proposed sewer system improvements to serve Project needs include 8-inch in-tract gravity sewer pipes that will collect Project sewer flows from individual lots and convey the flows to a 12- to 21-inch trunk main sewer pipe in Chrysanthy Boulevard that will extend from the eastern Project boundary to the western boundary of the Project, and a 24-inch gravity sewer that will connect the trunk main in Chrysanthy Boulevard to the existing trunk main in Rancho Cordova Parkway, with the existing manhole located immediately adjacent the Project site in Rancho Cordova Parkway.

The trunk sewer pipe in Chrysanthy Boulevard will collect flows from the approved Arista Del Sol and Cordova Hills developments to the east of the Project site, consistent with the SASD 2010 System Capacity Plan Expansion Trunk Sheds, as amended in 2015. The Arista Del Sol development is located adjacent to the Project's eastern boundary. The SASD's planned improvements account for future approved growth in the southern area of the City and adjacent area, including the Project, Arista Del Sol, and Cordova Hills Phase 1. The Project also includes upgrades to the existing SASD S-132 pump station, located southwest of Chrysanthy Boulevard and Anatolia Drive. The planned improvements are required in order to provide sewer services to the Project and

approved planned development in southern Rancho Cordova, and would not induce urban growth in the area.

The improvements to S-132 pump station would occur within the existing developed footprint of the S-132 pump station facility and may include new equipment and modifications to, or replacement of, existing equipment, such as replacement of pumps, electrical equipment, and the diesel generator. These improvements would result in short-term, temporary environmental effects, primarily noise and air quality impacts associated with construction equipment and vehicles.

Development of Project will result in 1,967.6 Equivalent Single-Family Dwelling (ESDs) resulting in PWWF of 1.613 mgd. The upstream projects to the east, Arista Del Sol, which is 137.2 acres and part of the approved SunCreek Specific Plan, and Cordova Hills Phase 1, which includes an approximately 342-acre area that is part of a larger approximately 2,669-acre development with an approved Master Plan, will result in 899.1 ESDs and 0.697 mgd and 3,290 ESDs and 2.5 mgd, respectively . Therefore, the total combined ESDs and PWWF are 6,156.7 ESDs and 4.1801 mgd, respectively, exiting the Project site at Ranch Cordova Parkway. The ESD calculations for the Project and Arista del Sol are provided in Table A-1 of the Level 2 Sewer Study provided as Appendix J.2.

The proposed trunk main will exit into an existing 24-inch sewer line stubbed at the intersection of Rancho Cordova Parkway and Chrysanthy Boulevard. The existing 24-inch sewer line discharges into Aerojet Interceptor 1B (36-inch trunk main) flowing westerly into SASD facility S-132 lift station. The SASD system capacity plan shows the Project will sewer to the west. Interim facilities or pump station are not expected to be required for the proposed project. See Appendix J.2 for the Level 2 Sewer Study, the latter of which contains the Study assumptions and criteria (i.e., sewer flow calculations and design flows).

The Level 2 Sewer Study completed for the Project demonstrates the ability of the proposed gravity system to serve the project. System components are sized for ultimate conditions. SASD staff has identified that there is adequate capacity in existing downstream sewer facilities to serve Project needs (SASD email dated September 17, 2018 is included in Appendix J.2.).

The SRWTP has a permitted capacity of 181 mgd. Over the last two decades, Regional San has seen a decrease in ADWFs in its system and at the SRWTP due to water conservation, closure of water intensive industries, and other factors. Regional San's review of the SRWTP capacity as part of the Echo Water Project Draft EIR indicated that the existing capacity of 181 mgd is adequate to accommodate growth anticipated over the next 40 plus years in Regional San's service area. The Project would increase flows to the SRWTP, consistent with planned growth projections for the SRWTP's service area, but would not cause it to exceed the permitted capacity and would not require the construction or relocation of Regional San facilities.

In conclusion, the current capacity of the SASD and Regional San facilities would be sufficient to handle the wastewater flow from the proposed project. As a result, the Project would not have adverse impacts to wastewater treatment capacity.

The Project would develop all of the necessary sewer infrastructure within the Project site and would provide improvements to the SASD S-132 pump station, as previously described. The Project would not result in environmental impacts associated with Project development, including provision of sewer infrastructure, beyond those described in this Draft EIR. Therefore, a ***less than significant*** impact would occur related to requiring or resulting in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

3.14.2 WATER SUPPLIES

EXISTING SETTING

Water Service Area

The Sacramento County Water Agency (SCWA) would provide water supplies to the Project through its Zone 40 conjunctive-use water supply system. The Project is identified as a subarea within Zone 40 known as the North Service Area (NSA).

The Zone 40 Water Supply Master Plan (WSMP) and the 2016 Water System Infrastructure Plan (2016 WSIP) identify anticipated improvements to serve the Project and nearby planned development. In the 2016 WSIP, proposed pipelines are shown on along Jaeger Road/Rancho Cordova Parkway, Chrysanthy Boulevard, and Douglas Road in the Project vicinity. Additionally, the proposed Rio Del Oro Storage Tank (ST-7) is located north of the Project site along Douglas Road. Further, the Sunrise Douglas Water Treatment Plant (GW-14) and Anatolia Water Treatment Plant (GW-15) are proposed to the south and west of the Project site, respectively.

SCWA was created in 1952 for the purpose of controlling and conserving storm, flood, and other surface waters for any beneficial use for lands and inhabitants and producing, storing, transmitting, and distributing groundwater. The SCWA Board of Directors created zones within the agency to finance, construct, acquire, reconstruct, maintain, operate, extend, repair, or otherwise improve any work for common benefit to each zone. There are currently eight zones within the SCWA: 11A, 11B, 11C, 12, 13, 40, 41, and 50.

The City of Rancho Cordova and a portion of the City's planning area are located within SCWA's Zone 40. Zone 40 was created in 1985 as a special benefit zone to supplement available groundwater supplies to support new and projected development within the zone and to establish the framework for a conjunctive use program that would utilize both surface water and underlying groundwater. Zone 40 consists of approximately 86,000 acres of agricultural, residential, and industrial land in central Sacramento County. The northern edge of the 100-year floodplain of Deer Creek is also located to the east and southeast. Interstate 5 forms the western boundary and the Douglas Road and Grant Line Road areas form the southern boundary.

The water demands associated with the Project have been included and addressed in the latest SCWA 2015 Urban Water Management Plan (UWMP) (SCWA, 2016) and in the development of the Zone 40 "conjunctive use" program as described in the Zone 40 WSMP.

Sacramento County Water Agency Water Supplies

SCWA uses purchased surface water, self-supplied surface water, groundwater, and recycled water as its sources of water supply. The Department of Water Resources (DWR) defines purchased water as water purchased from other suppliers, including non-self-supplied surface water. The water demands of the Project will be met with groundwater and surface water. Both of these sources are discussed in detail below.

SURFACE WATER

The surface water supplies associated with SCWA's conjunctive use program fall into four categories:

1) Water supplies available through multiple CVP contracts.
2) Water supplies available through State Water Resources Control Board (SWRCB) Permit 21209.
3) Water available through the City of Sacramento for use within the American River Place of Use (POU). It is noted that this supply is not currently available, as described below, but is anticipated in the future as part of SCWA's conjunctive use program.
4) Surface water transfers identified in the WSMP.

SCWA's primary sources of supply for surface water are the U.S. Bureau of Reclamation (USBR) CVP and SWRCB Permit 21209. Until such time as the SWRCB Bay Delta Water Rights Hearings are concluded, other parties that could be affected by SCWA's surface water supply needs include: CVP contractors, State Water Project (SWP) contractors, water rights holders subject to Term 91[1] conditions, and riparian diverters downstream of SCWA's point of diversion. The point of diversion is at a site near the community of Freeport on the Sacramento River.

The source of supply for the portion of SCWA that lies within the American River POU is the City of Sacramento. Delivery of this water to customers within the POU has been included in the City of Sacramento's long-range plan for perfecting their American River water rights. The diversion location, timing, and volume of delivery are currently under negotiation.

Surface water transfers would require SCWA to enter into purchase and transfer agreements with other entities that currently hold surface water rights upstream of SCWA's points of diversion. According to the WSMP, the amount of water needed is estimated to be 5,200 acre-feet per year (AFY). The timing for the acquisition of this water supply is yet to be determined.

The SCWA conjunctive use program includes the delivery of surface water within the Zone 40 boundaries as part of a comprehensive program to maintain the long-term, regional balance of the groundwater basin. The amount of appropriated water available for use could range up to 71,000 AFY in wet years, primarily during the winter months:

- Appropriative Water:

  In February 2008, the SWRCB approved SCWA's appropriative right permit application to divert water from the American and Sacramento Rivers (Permit 21209). Water under this permit is considered "intermittent water" that is typically available during the winter months of normal or wet years. These flows could range up to 71,000 AFY. This water would be diverted at the Freeport diversion on the Sacramento River. Since SCWA's

[1] "Term 91" refers to a provision which has been included in many water permits. Term 91 restricts specified post-1965 diverters from diverting the stored water released by the projects. Upstream Delta diverters who possess pre-1914 appropriations, riparian status, or pre-1965 issued water rights are not subject to Term 91.

demands are low in the winter months, it is possible that not all of this supply could be utilized without the ability to store the water.

- CVP Water:

  The CVP water supply consists of the CVP contract held by SCWA and the two SMUD assignments that total 45,000 AFY. Most of the CVP water is diverted at the Freeport diversion on the Sacramento River and treated at the Vineyard Surface Water Treatment Plant (SWTP). Some of the CVP supplies are diverted from the Sacramento River and treated at the City's Sacramento River SWTP and delivered to SCWA at the Franklin Intertie. CVP water is described under three different contracts, as follows:

  - Sacramento Municipal Utility District (SMUD) 1 Assignment - 15,000 AFY of SMUD's CVP contract water has been assigned to SCWA under the terms of an agreement with SMUD.
  - SMUD 2 Assignment - 15,000 AFY of SMUD's CVP contract water has been assigned to SCWA under the terms of an agreement with SMUD.
  - CVP Water Public Law 101-514 – In 1999, SCWA entered into a contract with the U.S. Bureau of Reclamation (USBR) for 22,000 AFY of CVP supplies from the American River pursuant to Public Law (PL) 101-514 (often referred to as "Fazio Water"). Of this 22,000 AFY, 7,000 AFY has been subcontracted to the City of Folsom for diversion from Folsom Lake, with 15,000 AFY available for SCWA through the Freeport diversion or Franklin Intertie.

There are two future surface water supplies, POU water and water transfers, planned for in the WSMP to meet build-out water demand. The timing for acquiring these two surface water supplies will be determined by demand growth in Zone 40. "POU water" refers to surface water obtained through a water wholesale agreement with the City of Sacramento (City) whereby the City will sell surface water to SCWA for use in the portion of Zone 40 that lies within the City's American River POU. The amount of water required to serve the POU area is estimated to be 9,300 AFY; this estimate is based on assumed demands located within the POU. "Water transfers" refers to surface water obtained through a water purchase and transfer agreement that SCWA would enter into with other entities that currently hold surface water rights upstream of SCWA's points of diversion. According to the WSMP, the amount of water needed is estimated to be 5,200 AFY.

GROUNDWATER

SCWA's groundwater source for the Project area is the South American Sub-basin as defined by the California Department of Water Resources (DWR) Bulletin 118. According to Bulletin 118, the South American Sub-basin is defined as the area bounded on the west by Interstate 5 and the Sacramento River, on the north by the American River, on the south by the Cosumnes and Mokelumne rivers and on the east by the Sierra Nevada. The Central Basin covers a major portion of this basin.

The estimated long term annual sustainable yield of groundwater from the Central Basin is 273,000 AFY. Currently, groundwater extractions are estimated to be 250,000 AFY (excluding remediation).

The determination of the sustainable yield of the Central Basin (273,000 AFY) was negotiated by the Water Forum Groundwater Negotiating Team (GWNT) and involved a complex process that developed the long-term average annual pumping limit of the basin. The long-term average annual pumping limit is described as the hydro-geologic process under which groundwater can be pumped and not exceed average natural recharge over a long-term period of time. Under sustainable conditions, natural recharge is said to be able to make up for variations in the amount of pumping that occurs over the long-term, given wet and dry periods in the hydrologic record.

Table 3.14-1 identifies past volumes of groundwater extracted by SCWA between 2011 and 2015.

TABLE 3.14-1: HISTORICAL GROUNDWATER PUMPING 2011 - 2015

GROUNDWATER TYPE	*LOCATION OR BASIN NAME*	*2011*	*2012*	*2013*	*2014*	*2015*
Alluvial Basin	Sacramento Valley Groundwater Basin, North American Subbasin	4,654	5,076	5,316	4,602,	3,877
Alluvial Basin	Sacramento Valley Groundwater Basin, South American Subbasin	29,972	25,553	23,512	23,179	20,775
	Total	*34,626*	*30,629*	*28,828*	*27,781*	*24,652*

SOURCE: SCWA 2015 UWMP, TABLE 6-2.

RECYCLED WATER SUPPLIES

SCWA purchases tertiary treated wastewater from Regional San as source of non-potable water for irrigation of parks, schools, and rights-of-way. SCWA provides recycled water to areas within its South Service Area; recycled water is not being used in the NSA or Central Service Area.

Demand and Supply Conclusions in the 2015 UWMP

The UWMP has identified water demand in normal, single dry, and multiple dry years in 5-year increments for the 20-year projection (2020 to 2040). A summary of the pertinent data from these tables is presented in Table 3.14-2.

Constraints on SCWA's surface water supplies includes the significant variation of supplies that are available depending on the climate year type. Even though the surface water supplies are not available at a consistent level of use, SCWA has available groundwater supplies through its conjunctive use program to be able to replace the reduction in surface water supplies in dry years. While groundwater is more consistently available over different climate year types, it has been constrained by groundwater contamination plumes, some naturally occurring contaminants, and the long term need to not exceed the safe yield, which may be affected by future plans for the basin developed to comply with the Sustainable Groundwater Management Act (SGMA). The capacity of supply and conveyance facilities is also a constraint on both surface water and groundwater supplies. SCWA has plans to construct additional water supply facilities. In general, water quality does not have a significant impact on SCWA's current and projected water supplies. The SWTP and groundwater treatment plants provide treatment to meet drinking water standards.

TABLE 3.14-2: MULTIPLE DRY YEARS SUPPLY AND DEMAND COMPARISON IN FIVE-YEAR INCREMENTS (AFY)

		2020	*2025*	*2030*	*2035*	*2040*
RETAIL						
1st Year	Supply Totals	77,900	77,900	81,900	90,900	90,900
	Demand Totals	48,121	55,490	63,288	71,143	79,278
	Difference	*29,779*	*22,410*	*18,612*	*19,757*	*11,622*
2nd Year	Supply Totals	77,900	77,900	81,900	90,900	90,900
	Demand Totals	48,121	55,490	63,288	71,143	79,278
	Difference	29,779	22,410	18,612	19,757	11,622
3rd Year	Supply Totals	70,200	70,500	74,600	83,600	83,800
	Demand Totals	48,121	55,490	63,288	71,143	79,279
	Difference	22,079	15,010	11,312	12,457	4,522
WHOLESALE						
1st Year	Supply Totals	5,000	5,000	6,000	7,000	7,000
	Demand Totals	4,120	4,826	5,733	6,233	6,769
	Difference	*880*	*174*	*267*	*767*	*231*
2nd Year	Supply Totals	5,000	5,000	6,000	7,000	7,000
	Demand Totals	4,120	4,826	5,733	6,233	6,769
	Difference	*880*	*174*	*267*	*767*	*231*
3rd Year	Supply Totals	5,000	5,000	6,000	7,000	7,000
	Demand Totals	4,120	4,826	5,733	6,233	6,769
	Difference	*880*	*174*	*267*	*767*	*231*

SOURCE: SCWA 2015 UWMP, MAY 2016 (TABLES 7-8 AND 7-9).

The water supply allocation from the CVP supply in 2015 was a historical low. The CVP allocation for the three-year 2013 to 2015 period was also the lowest historical three-year sequence. The CVP allocation for 2013 to 2015, was 100 percent, 75 percent, and 25 percent of the prior three-year average constrained use for each of the years, respectively. The CVP supply represents SCWA's most significant surface water supply source. Even with the low CVP allocation in 2015, the overall water supply was still 90 percent of normal because of the availability of other water supply sources. It is assumed that wholesale water supplies would be fully available as required to meet wholesale water demands.

It is noted that the SCWA's 2015 UWMP accounts for the demand from the Project.

REGULATORY SETTING - WATER SUPPLY

Senate Bill 610

Senate Bill (SB) 610 requires that public agencies in a position of approving certain projects check with the water agency proposed to serve the project to determine if there are sufficient water supplies available to accommodate the project. SB 610 applies to projects that meet the following criteria:

- A proposed residential development of more than 500 dwelling units.
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
- A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
- A proposed hotel or motel, or both, having more than 500 rooms.

- A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.
- A mixed-use project that includes one or more of the projects specified above.
- A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

SB 610 amended Public Resources Code Section 21151.9 to provide that whenever a city or county decides that a project meets any of the above criteria, it must comply with Section 10910 *et seq.* of the Water Code. Section 10910 *et seq.* of the Water Code was also amended by SB 610 to require a city or county to coordinate the CEQA analysis with the water agency proposed to serve the project. Section 10910 *et seq*. requires a city or county to identify any public water system that may supply water to a proposed project. The city or county must ask each of these water providers to indicate whether its "total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the Project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses." If the city or county cannot receive this information from the water provider, it must provide the water supply assessment itself. It should be noted that the Project meets the above listed criteria (i.e. the Project has more than 500 dwelling units); therefore, SB 610 is applicable to the Project, and a Water Supply Assessment has been prepared.

Sustainable Groundwater Management Act

The SGMA requires governments and water agencies of basins designated as high and medium priority basins to halt overdraft and develop sustainability plans to bring the basins into balanced levels of pumping and recharge within 20 years. The SGMA empowers local agencies to form Groundwater Sustainability Agencies (GSAs) to manage basins sustainably and requires those GSAs to adopt Groundwater Sustainability Plans (GSPs).

California Model Water Efficient Landscape Ordinance

The Water Conservation in Landscaping Act was enacted in 2006, requiring the DWR to update the Model Water Efficient Landscape Ordinance (MWELO). In 2009, the Office of Administrative Law (OAL) approved the updated MWELO, which required a retail water supplier or a county to adopt the provisions of the MWELO by January 1, 2010, or enact its own provisions equal to or more restrictive than the MWELO provisions.[2] Because the City of Rancho Cordova is a "local agency"

[2] California Code of Regulations (CCR), Tit. 23, Div. 2, Ch. 27, Sec. 492.4. The MWELO provides the local agency discretion to calculate the landscape water budget assuming a portion of landscape demand is met by precipitation, which would further reduce the outdoor water budget. For purposes of the Water Supply Assessment, precipitation is not assumed to satisfy a portion of the outdoor landscape requirement because the determination of an appropriate effective precipitation factor is highly uncertain given the various landscape slopes, terrain composition, concurrent watering schedules, etc.

under the MWELO, it must require "project applicants" to prepare plans consistent with the requirements of MWELO for review and approval by the City.

The MWELO applies to new construction with a landscape area greater than 2,500 square feet. The MWELO "highly recommends" use of a dedicated landscape meter on landscape areas smaller than 5,000 square feet, and requires weather-based irrigation controllers or soil-moisture based controllers or other self-adjusting irrigation controllers for irrigation scheduling in all irrigation systems. The MWELO provides a methodology to calculate total water use based upon a given plant factor and irrigation efficiency.[3] Finally, the MWELO requires the landscape design plan to delineate hydrozones (based upon plant factors) and then to assign a unique valve for each hydrozone (low, medium, high water use).

City of Rancho Cordova General Plan

The City of Rancho Cordova General Plan contains the following goals and policies that are relevant to water supply:

NATURAL RESOURCES ELEMENT

Goal NR.5: Protect the quantity and quality of the City's water resources.

Policy NR.5.1: Promote water conservation within existing and future urban uses.

Policy NR.5.2: Encourage the use of treated wastewater to irrigate parks, golf courses, and landscaping.

INFRASTRUCTURE, SERVICES, AND FINANCE ELEMENT

Goal ISF.2: Ensure the development of quality infrastructure to meet community needs at the time they are needed.

Policy ISF.2.1: Ensure the development of public infrastructure that meets the long-term needs of residents and ensure infrastructure is available at the time such facilities are needed.

Policy ISF.2.2: Coordinate with independent public service providers, including schools, parks and recreation, utility, transit, and other service districts, in developing service and financial planning strategies.

Policy ISF.2.3: Ensure that adequate funding is available for all infrastructure and public facilities, and make certain that the cost of improvements is equitably distributed.

[3] In calculating Estimated Total Water Use, the MWELO requires use of at least a 71% irrigation efficiency factor. Assuming 71% irrigation efficiency, the average plant factor must be 0.50. It would be possible to stay within the water budget if the average plant factor were higher than 0.50 by designing a system with an irrigation efficiency higher than 71%. The relationship between a Plant Factor (PF) and Irrigation Efficiency (IE) in the Applied Water formula is: AW=(ETo*PF)/IE.

Policy ISF.2.4: Ensure the development of public infrastructure that meets the long-term needs of residents and ensure infrastructure is available at the time such facilities are needed.

SCWA 2015 Urban Water Management Plan

The SCWA prepared an Urban Water Management Plan (UWMP) in 2016, as required by the Urban Water Management Planning Act of 1983. The focus of the Plan is the conservation and efficient use of water in the SCWA service area, and the development and implementation of plans to assure reliable water service in the future. The Plan contains projections for future water use, discusses the reliability of the SCWA's water supply, describes the SCWA's water treatment system, and contains a water shortage contingency plan. In addition, the Plan contains best management practices for efficient water use.

SCWA Zone 40 Water Supply Master Plan

The Zone 40 WSMP was been prepared by the SCWA to provide a flexible program of water management alternatives that can be implemented and revised, if necessary, as the availability and feasibility of water supply sources change in the future. The WSMP also reflects changes from the 1987 Zone 40 Water WSMP (James Montgomery, February 1987) (1987 Plan) in the pattern of growth in water demands, water quality treatment requirements, expansion of the original service area, and in the availability of potential sources of surface water supplies. The WSMP describes the studies performed and presents findings, conclusions, and recommendations to meet future water demands in Zone 40 through the year 2030. The Zone 40 WSMP was last amended in December 2011 to address changes in policy, water demand, and water supply sustainability and to address water supply for the Cordova Hills area.

Sunrise Douglas Community Plan/Sun Ridge Specific Plan Long Term Water Supply Plan and EIR

The Sunrise Douglas Community Plan/Sun Ridge Specific Plan Long Term Water Supply Plan EIR addresses the future water demand for buildout of the Sunrise Douglas Community Plan and the Sun Ridge Specific Plan. The SCWA unit water demand factors (from the Zone 40 WSMP) (Table 2-3) were applied to the acreage for each land use designation that generates water use within the Sunrise Douglas Community Plan/Sun Ridge Specific Plan (Table 2-4). The Sunrise Douglas Community Plan/Sun Ridge Specific Plan water supply plan would solely rely on groundwater to serve near-term development within the Sun Ridge Specific Plan, and would rely on a conjunctive use supply over the long term through SCWA's Zone 40 system.

THRESHOLDS OF SIGNIFICANCE - WATER SUPPLY

Consistent with Appendix G of the CEQA Guidelines, the Project will have a significant impact on the environment associated with Utilities if it will:

1. Require or result in the relocation or construction of new or expanded water facilities, the construction or relocation of which could cause significant environmental effects; and/or

2. Have insufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years.

IMPACTS AND MITIGATION MEASURES

Impact 3.14-2: The Project would not require or result in the relocation of new or expanded water facilities, and would have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years (Less than Significant)

The Project would connect to SCWA existing water supply infrastructure located at the intersection of Rancho Cordova Parkway and Chrysanthy Boulevard. New water distribution pipelines and valves would be provided within the Project site, primarily within the roadway right-of-ways, to serve the proposed development. The water distribution pipelines and other infrastructure have been sized to accommodate planned development included in the WSMP, which includes the Project. The impacts of development of the proposed water system are discussed throughout this EIR.

The Project is located within the 2030 Study Area as defined in the WSMP, and is in the SCWA's Service Area as defined in the UWMP.

The projected water demands associated with the Project are addressed by the WSMP. During the development of the WSMP, there was no detailed land use information available for the Project except that it was projected to be "mixed land uses". The WSMP uses a unit demand factor of 2.51 AFY/acre for "mixed land uses" to estimate the water demands for the Project area and other areas with the same land use classification for overall planning purpose.[4] Based on this unit demand factor, the WSMP projected a total water demand for the Project of 1,330.8 AFY. The projected demand considered by the WSMP is greater than the water demand calculated for the current Project shown in Table 3.14-3 (1,330.8 AFY as compared to 785.17 AFY). Accordingly, the water demands associated with the Project are addressed by the WSMP.

The projected water demand associated with the Project is also accounted for in the UWMP. The water demands shown in the UWMP through 2035 are an estimated gallons per capita per day (GPCD) target chosen by SCWA and are based on the projected population. Establishing a GPCD target is a new requirement for the UWMP in accordance with Senate Bill (SB) x7-7, adopted in November 2009. Because the population projection for the Project area is included in the total population projection for SCWA, the water demand associated with the Project is considered accounted for in the UWMP. Further, the demand for the Project is less than anticipated in the UWMP and the adopted Water Supply Assessment (WSA) for the Project. Therefore, it is

[4] This unit water demand factor represents a weighted average demand for a typical mixed land uses area that includes residential, commercial, recreation, and open space. Without detailed land use information, it is a relatively reliable method for water demand estimation for general water supply planning purposes.

reasonable to conclude that the data from the UWMP can be relied upon to meet current and projected demands (see Water Code Section 10910 (c)(2)).

The total area for the Project is estimated to be 530 acres. As shown in Table 3.14-3, the projected annual water demand for the Project is 785.17 AFY, including system losses. The WSA that was adopted by SCWA for the Project site estimates that the annual water demand for the Project site would be 1,101.2 AFY. The proposed land uses and projected water demand for the Project are provided in Table 3.14-3. As shown in the table, the Project's estimated water demand (785.17 AFY) and is 317.03 AFY less than what was anticipated in the WSA adopted for the Project site.

TABLE 3.14-3: PROPOSED LAND USE AND WATER DEMANDS ESTIMATE FOR THE PROJECT

LAND USE DESCRIPTION	*LAND USE CLASSIFICATION*	*AREA (NET ACRES)*	*UNIT WATER DEMAND FACTOR (AF/ACRE/YR)*	*WATER DEMAND (AFY)*
Single Family Low Density	Single Family	77.87	2.89	225.04
Single Family Medium Density	Multi-Family Low Density	90.91	3.70	336.37
Multi Family High Density	Multi-Family High Density	8.43	4.12	34.73
Commercial	Commercial	5.16	2.75	14.19
Parks, Landscape Lots	Private Park, Public Park, Landscape Lots	30.37	3.46	105.08
Major Roads	Right-of-Way	71.33	0.21	14.98
Wetland Preserve, Protected Areas, Open Space	Vacant	240.05	0.0	0.00
Water Quality/Detention Basin	Vacant	5.98	0.0	0.00
Subtotal	-	*530.1*	-	*730.39*
System Losses (7.5%)	-	-	-	*54.87*
TOTAL DEMAND	**-**	**-**	**-**	**785.17**

NOTE: LAND USE CLASSIFICATION AND ACREAGE INFORMATION WERE PROVIDED BY THE PROJECT PROPONENT IN JUNE 2019, AND THE UNIT WATER DEMANDS PROVIDED IN THIS TABLE ARE CONSISTENT WITH THE WSMP.
SOURCE: WATER DEMAND FACTOR: SCWA WATER SUPPLY ASSESSMENT FOR THE RANCH AT SUNRIDGE, TABLE 1, SEPTEMBER 2011; UPDATED CALCULATIONS BASED ON PROPOSED TENTATIVE SUBDIVISION MAP, DE NOVO PLANNING GROUP, 2019.

The Project water demands will ultimately be met by a combination of groundwater and surface water. SCWA has completed the NSA Phase A Project, which is the transmission pipeline that conveys treated surface water from SCWA's Vineyard Surface Water Treatment Plant (VSWTP) to the NSA. Currently the NSA is receiving treated surface water through the same transmission line that delivered water to the Anatolia Water Treatment Plant (WTP). In the event additional water is needed in the area, the WTP is still active. Initial demands for the Project will likely be met by surface water through the SCWA Phase A Project. In the event additional water is needed, groundwater extracted from the North Vineyard [a.k.a. Excelsior] Well Field (NVWF) south of Mather Field and possibly the Mather Housing wells located at Mather Field. Groundwater from NVWF will be conveyed to and treated at the WTP located to the northwest of the Project area. After treatment, the groundwater will be distributed to the Project area through the existing and future water distribution system.

SCWA currently exercises, and will continue to exercise, its rights as a groundwater appropriator to extract groundwater from the groundwater basin (Central Basin) underlying Zone 40 for delivery to its customers.[5] The UWMP has identified current and projected groundwater pumping in normal, single dry, and multiple dry years in 5-year increments for the 20-year projection (2020 to 2040), as shown in Table 6-12 of the UWMP.).

As a signatory to the WFA and a member of the Sacramento Central Groundwater Authority (Groundwater Authority), SCWA recognizes the Water Forum-defined long-term sustainable average annual yield of the underlying groundwater basin of 273,000 AFY.

SCWA has previously exercised its rights as a groundwater appropriator to meet the water demands of its customers and will continue to exercise those rights to provide treated groundwater supplies to the project.

The UWMP quantifies SCWA's total projected water supplies during normal, single dry, and multiple dry water years over a 20-year projection in five-year intervals. The UWMP demonstrates that the total projected water supplies for Zone 40 under normal, single dry, and multiple dry years meet the proposed water demands (including existing and other projected future demands) over the next 20 years. See Table 3.14-2 in the Existing Setting.

CONCLUSION

SCWA has determined that it has identified sufficient water supplies to meet the water demands of the project. SCWA makes this determination based on the information provided in this WSA and on the following specific facts:

- SCWA's conjunctive use program is a sustainable water supply program that provides a 100-percent reliable water supply while protecting environmental values and stabilizing the groundwater basin underlying Zone 40.
- SCWA's conjunctive use program has been extensively analyzed and documented in the WSMP, the FEIR for 2002 WSMP, certified in February 2006, the FEIR – WFA, certified in 1999, and the WFA. All referenced documents have been subjected to thorough technical peer review and public scrutiny.
- The Project will be served by water supplies made available through SCWA's conjunctive use program.
- A financing plan for SCWA's conjunctive use program for constructing facilities required for delivering groundwater and surface water to the Project has been approved by the Board through its adoption of the WSMP, Bond Feasibility Reports, and the Sacramento County Water Agency Code.

[5] The groundwater basin underlying Zone 40 has not been adjudicated.

Based on the analysis described above, the SCWA's existing water supplies are sufficient to meet the SCWA's existing and projected future potable water demands, including those future potable water demands associated with the Project, to the year 2040 under all hydrologic conditions (normal years and dry years). The water demand resulting from development and operation of the Project would be significantly lower than what was assumed for the Project site in the SCWA 2015 UWMP and the Zone 40 WSMP.

Further, the Project's internal water delivery system would connect to an existing main in Rancho Cordova Parkway and would not require nor result in the relocation of new or expanded water facilities. The Project would develop all of the necessary water infrastructure within the Project site. Therefore, the Project would result in a ***less than significant*** impact to water supplies, and no new water production, treatment, or extraction facilities would be required to serve the Project beyond those previously identified in the Revised Sunrise Douglas Community Plan/Sunridge Specific Plan Long-Term Water Supply Plan Draft EIR and SCWA's UWMP and WSMP.

3.14.3 SOLID WASTE

EXISTING SETTING

According to the California Department of Resources Recycling and Recovery (CalRecycle), in 2017, Rancho Cordova disposed of approximately 64,235 tons of solid waste. Allied Waste Services provides solid waste and recycling collection services to the City. Solid waste is transported to the Kiefer Landfill, near the intersection of Grant Line Road and Kiefer Boulevard.

Sacramento County owns and operates the Kiefer Landfill, and the landfill is the primary solid waste disposal facility in the County. Kiefer Landfill is a total of 1,084 acres in size, with a permitted disposal area of 660 acres. Kiefer Landfill is classified as a Class III municipal solid waste landfill facility and is permitted to accept general residential, commercial, and industrial refuse for disposal, including municipal solid waste, construction and demolition debris, green materials, agricultural debris, and other nonhazardous designated debris.

The landfill is permitted to accept a maximum of 10,800 tons per day of solid waste; however, the average intake is only approximately 6,000 tons per day. The Kiefer Landfill receives over 700,000 tons of waste per year. The site currently has a permitted capacity of approximately 117 million cubic yards and a remaining capacity of 113 million cubic yards. Currently, the landfill is operating below permitted capacity, and the closure date of the Kiefer Landfill is anticipated to be approximately 2064.

CalRecycle provides an average per-capita solid waste disposal rate for residents and business. In Rancho Cordova, CalRecycle identified solid waste disposal rates of 4.8 tons per resident per year and 6.8 tons per employee per year in 2017 (CalRecycle Jurisdiction Diversion/Disposal Rate Summary, 2019).

The California Integrated Waste Management Act (CIWMA) of 1989, also commonly known as Assembly Bill (AB) 939, requires local agencies to implement source reduction, recycling, and composting (see discussion under "Regulatory Setting" below). The Sacramento County Integrated Waste Management Plan, adopted in March 1996, consists of a siting element, summary plan, source reduction and recycling, household hazardous wastes, and non-disposal facility elements. The Countywide Integrated Waste Management Plan requires recycling programs that are expected to result in a 50% diversion away from landfills, thereby extending the life of landfills. According the 2006 Regional Waste Management Authority Annual Report, Rancho Cordova showed 48% of the solid waste generated in the City was diverted from landfills through recycling, composting, and other waste diversion methods.

To comply with the CIWMA, the City adopted the Business and Multi-Family Recycling Ordinance (Title 6, Chapter 6.21) in October 2008. The ordinance requires businesses and multifamily residential properties with 5 or more units that generate four or more cubic yards per week of solid waste to implement an on-site recycling program. The program requires businesses and multifamily residential properties to keep recyclable materials separate from all other solid waste, to provide signs and labeled containers for the storage and collection of recyclable materials, and to either self-

haul or enter into a written service agreement with a franchise hauler (i.e., Allied Waste Services, Atlas Disposal Industries, or Waste Management of Sacramento) for the collection and subsequent delivery of recyclable materials to an authorized recycling facility. Businesses and multifamily residential property owners and operators must prepare a recycling plan that provides information on the types of on-site recyclable materials and verifies that labeled containers, signs, and a disposal service are available to ensure compliance with the ordinance.

REGULATORY SETTING - SOLID WASTE

California's Integrated Waste Management Act of 1989 (AB 939)

California's Integrated Waste Management Act of 1989 (AB 939) set a requirement for cities and counties to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling and composting. In order to achieve this goal, AB 939 requires that each City and County prepare and submit a Source Reduction and Recycling Element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

AB 939 also established requirements for cities and counties to develop and implement plans for the safe management of household hazardous wastes. In order to achieve this goal, AB 939 requires that each city and county prepare and submit a Household Hazardous Waste Element.

75 Percent Solid Waste Diversion

AB 341 requires CalRecycle to issue a report to the Legislature that includes strategies and recommendations that would enable the state to recycle 75 percent of the solid waste generated in the state by January 1, 2020, requires businesses that meet specified thresholds in the bill to arrange for recycling services by July 1, 2012, and also streamlines various regulatory processes.

Construction and Demolition Waste Materials Diversion

Senate Bill 1374 (SB 1374), Construction and Demolition Waste Materials Diversion Requirements, requires that jurisdictions summarize their progress realized in diverting construction and demolition waste from the waste stream in their annual AB 939 reports. SB 1374 required the California Integrated Waste Management Board (CIWMB, which is now CalRecycle) to adopt a model construction and demolition ordinance for voluntary implementation by local jurisdictions.

California Green Building Standards Code (CALGreen)

CALGreen requires the diversion of at least 50 percent of the construction waste generated during most new construction projects (CALGreen Sections 4.408 and 5.408) and some additions and alterations to nonresidential building projects (CALGreen Section 5.713).

City of Rancho Cordova Municipal Code

Chapter 6.20 of the City's Municipal Code regulates the management of garbage, recyclables, and other wastes. Section 6.20.230 outlines the rules and regulations for collection, transportation, and disposal of commercial solid waste and recyclables in the City.

Chapter 6.21 of the City's Municipal Code promotes recycled and organics recycling for businesses and multifamily uses by:

1. Requiring covered generators in the city of Rancho Cordova to keep recyclable materials separate from all other solid waste for recycling;

2. Requiring covered generators in the city of Rancho Cordova to keep organic recyclable materials separate from all other solid waste for organics recycling;

3. Requiring covered generators to provide signs and labeled containers for the storage and collection of recyclable materials and organic recyclable materials; and

4. Requiring covered generators to either self-haul or enter into a written service agreement for the collection and subsequent delivery of recyclable materials and organic recyclable materials to a recycling facility.

Chapter 16.92 outlines the City's Construction and Demolition Debris ordinance. "Covered project" means a project that meets one or more of the following criteria: (1) is new construction; (2) is a demolition project; or (3) is a tenant improvement with a permit valuation greater than or equal to $250,000. "Covered project" shall not include: (1) activities performed in response to an emergency, such as a natural disaster; or (2) activities that contain significant amounts of materials that cannot be disposed of in Class II sanitary landfills described in Title 27, Section 20250 of the California Code of Regulations, and as may be amended from time to time. The general requirements of the Construction and Demolition Debris ordinance are outlined in Section 16.92.030.

Rancho Cordova General Plan

The Rancho Cordova General Plan contains the following goals and policies that are relevant to solid waste disposal and recycling:

NATURAL RESOURCES ELEMENT

Goal NR.8: Promote waste reduction, reuse, recycling, and composting efforts.

Policy NR.8.1: Support recycling efforts by developing a set of programs to educate residents on recycling and provide recycling services.

Policy NR.8.2: Encourage all companies that do business in Rancho Cordova to recycle and reuse construction scraps, demolition materials, concrete, industrial waste, and green waste.

Policy NR.8.3: Promote the use of rubberized asphalt on all public roadways in an effort to recycle old tires and reduce noise impacts. Implementation of this policy will help to preserve aggregate resources.

Policy NR.8.4: Encourage the use of recycled materials and source reduction (also known as waste prevention) by governmental agencies and local businesses.

Policy NR.8.5: Meet state mandates for solid waste reduction and recycling. Increase recycling efforts beyond those required by state law through supporting businesses that buy and sell re-used materials, such as materials exchange centers.

Policy NR.8.6: Encourage the use of recycled-content products and construction materials.

Policy NR.8.7: Maintain contact with Sacramento County and Allied Waste (or its successor) regarding the capacity projections of Kiefer Landfill and Lockwood Landfill to ensure an adequate capacity in their disposal facilities for the long-term disposal needs of Rancho Cordova.

THRESHOLDS OF SIGNIFICANCE - SOLID WASTE

Consistent with Appendix G of the CEQA Guidelines, the Project will have a less than significant impact on the environment associated with Utilities if it will:

1. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; and/or
2. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

IMPACTS AND MITIGATION MEASURES

Impact 3.14-3: The Project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste, and would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals (Less than Significant)

The Project would be a residential and commercial mixed use development, resulting in the addition of up to 1,725 residential units and 53,000 s.f. of commercial and non-residential uses, which is projected to increase the population by an estimated 4,319 residents and 106 employees, as described in Section 2.0, Project Description. Development of the Project site for residential and commercial uses was accounted for in the City's General Plan.

CalRecycle provides an average per-capita solid waste disposal rate for residents and business. In Rancho Cordova, CalRecycle estimates a solid waste disposal rate of 4.8 tons per resident per year. Using this rate, the residential portion of the Project would generate approximately 20,731.2 tons per year of solid waste. Additionally, as described in Section 2.0, the Project would include up to 53,000 square feet of non-residential uses, which includes 21,000 square feet for a recreation center and 32,000 square feet for commercial uses. In order to determine solid waste generation from the proposed non-residential uses, the rate of 6.8 tons per year per employee was used. Therefore, the non-residential components of the Project would generate up to 720.8 tons per year of solid waste. Total solid waste generated by all aspects of the Project would be 21,452 tons per year.

3.14 UTILITIES

The Project would be required to comply with applicable state and local requirements including those pertaining to solid waste, construction waste diversion, and recycling. Specifically, Chapter 6.20 of the City's Municipal Code regulates the management of garbage, recyclables, and other wastes, Chapter 6.21 of the City's Municipal Code promotes recycled and organics recycling for businesses and multifamily uses, and Chapter 16.92 outlines the City's Construction and Demolition Debris ordinance.

As previously described, the Kiefer Landfill is permitted to accept a maximum of 10,800 tons per day of solid waste; however, the average intake is only approximately 6,000 tons per day. The landfill currently has a permitted capacity of approximately 117 million cubic yards and a remaining capacity of 113 million cubic yards. Currently, the landfill is operating below permitted capacity, and the closure date of the Kiefer Landfill is anticipated to be approximately 2064. The addition of the volume of 21,452 tons per year (or 58.8 tons per day) of solid waste generated by the Project to the Kiefer Landfill would not exceed the landfill's remaining capacity.

The Project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste, and would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. This is a ***less than significant*** impact.

The California Environmental Quality Act (CEQA) requires an Environmental Impact Report (EIR) to evaluate a project's effects in relationship to broader changes occurring, or that are foreseeable to occur, in the surrounding environment. Accordingly, this chapter presents discussion of CEQA-mandated analysis for cumulative impacts and irreversible impacts associated with Project. As described below, this section also includes an analysis of the Project's growth inducing impacts.

4.1 CUMULATIVE SETTING AND IMPACT ANALYSIS

INTRODUCTION

CEQA requires that an EIR contain an assessment of the cumulative impacts that could be associated with the Project. According to CEQA Guidelines Section 15130(a), "an EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable." "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects other current projects, and probable future projects (as defined by Section 15130). As defined in CEQA Guidelines Section 15355, a cumulative impact consists of an impact that is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. A cumulative impact occurs from:

…the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

In addition, Section 15130(b) identifies that the following three elements are necessary for an adequate cumulative analysis:

1) Either:

   (A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or,

   (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.

2) A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available; and

3) A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

Where a lead agency is examining a project with an incremental effect that is not "cumulatively considerable," a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable.

CUMULATIVE SETTING

The cumulative analysis for this EIR is based primarily on the Rancho Cordova General Plan (June 2006) and the Rancho Cordova General Plan EIR (March 2006), consistent with CEQA Guidelines Section 15130(b)(1)(B). The Rancho Cordova General Plan anticipated regional growth based on land use plans and development projects throughout the region, as described in Table 4.0-1 of the General Plan EIR. Growth anticipated by the General Plan EIR in the City's Planning Area included projects totaling approximately 25,538 acres, including approximately 15,039 acres of residential uses, 2,760 acres of commercial uses, and a range of town center, employment-generating, park, recreation, and public/quasi-public uses. Residential growth under the General Plan was anticipated to accommodate 68,413 single family and multifamily dwelling units.

The General Plan EIR further anticipated growth associated with the Sacramento Region Blueprint, which included growth of the population from 2.0 million to 3.8 million people, job increases from 921,000 to 1.9 million jobs, and housing increases from 713,000 to 1.5 million housing units through 2050 in the Sacramento region. Additional growth associated with Sacramento County, El Dorado County, Placer County, and the cities of Sacramento, Folsom, Rancho Cordova, Citrus Heights, Roseville, and Rocklin was anticipated as reflected in land use plans, as well as a 3,584-acre annexation of the Folsom Sphere of Influence. The Rancho Cordova General Plan considered two planning horizons: a 25-year (2030) and a full buildout (estimated at 2050) horizon. Since adoption of the General Plan, the City has grown in accordance with the vision of the General Plan. While the General Plan has been amended from time to time, the amendments have not required any amendments to the General Plan EIR, nor have any supplemental or subsequent EIRs been required to address changes to the General Plan. The General Plan EIR is an appropriate document to address the Project's contribution to cumulative impacts in the context of the General Plan's contribution to cumulative impacts, as provided by CEQA Guidelines Section 15130(b)(1)(B).

The 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy (2016 MTP/SCS) was adopted by the Sacramento Area Council of Governments (SACOG) in 2016. The 2016 MTP/SCS is the most recently adopted SACOG document, which addresses regional planning for transportation, sustainability, and growth, and the General Plan is the City's most recently adopted citywide land use document. The 2016 MTP/SCS EIR anticipated development of an additional 47,563 acres of land and an increase of approximately 811,000 people, 285,000 new housing units, and 439,000 new employees in the region, which includes El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba Counties, exclusive of the Tahoe Basin.

CUMULATIVE EFFECTS OF THE PROJECT

Cumulative Impacts Addressed by a General Plan for Which an EIR Was Certified

The CEQA Guidelines provide multiple provisions for streamlining the environmental review of subsequent projects that are 1) consistent with the development density established by existing zoning, community plan, or general plan policies for which an EIR was certified, as described by CEQA Guidelines Section 15183, or 2) later projects consistent with the program, plan, policy, or ordinance for which an EIR was prepared, as described by CEQA Guidelines Section 15152. The Project is consistent with the City's General Plan and is allowed to limit this Draft EIR's analysis of cumulative impacts as provided by both CEQA Guidelines Section 15183 and CEQA Guidelines Section 15152.

CEQA GUIDELINES SECTION 15152: TIERING

As described under CEQA Guidelines Section 15152(a), "Tiering" refers to using the analysis of general matters contained in a broader EIR (such as one prepared for a general plan) with later EIRs and negative declarations on narrower projects; incorporating by reference the general discussions from the broader EIR; and concentrating the later EIR or negative declaration solely on the issues specific to the later project." CEQA Guidelines Section 15152(d) provides the following direction regarding limiting analysis of a later project, where an EIR has already been prepared and certified for a program, plan, policy, or ordinance consistent with the requirements of Section 15152:

> *Where an EIR has been prepared and certified for a program, plan, policy, or ordinance consistent with the requirements of this section, any lead agency for a later project pursuant to or consistent with the program, plan, policy, or ordinance should limit the EIR or negative declaration on the later project to effects which:*
>
> *(1) Were not examined as significant effects on the environment in the prior EIR; or*
>
> *(2) Are susceptible to substantial reduction or avoidance by the choice of specific revisions in the project, by the imposition of conditions, or other means.*

CEQA GUIDELINES SECTION 15183: PROJECTS CONSISTENT WITH A COMMUNITY PLAN OR ZONING

Pursuant to CEQA Guidelines Section 15183, projects which are consistent with the development density established by existing zoning, community plan, or general plan policies for which an EIR was certified shall not require additional environmental review, except as might be necessary to examine whether there are project-specific significant effects which are peculiar to the project or its site. This streamlines the review of such projects and reduces the need to prepare repetitive environmental studies.

This Draft EIR is required to analyze the Project's contribution to cumulative impacts under a limited set of circumstances as identified in CEQA Guidelines Section 15183(b), which states:

In approving a project meeting the requirements of this section, a public agency shall limit its examination of environmental effects to those which the agency determines, in an initial study or other analysis:

1) *Are peculiar to the project or the parcel on which the project would be located,*

2) *Were not analyzed as significant effects in a prior EIR on the zoning action, general plan or community plan with which the project is consistent,*

3) *Are potentially significant off-site impacts and cumulative impacts which were not discussed in the prior EIR prepared for the general plan, community plan or zoning action, or*

4) *Are previously identified significant effects which, as a result of substantial new information which was not known at the time the EIR was certified, are determined to have a more severe adverse impact than discussed in the prior EIR.*

CUMULATIVE IMPACTS ADDRESSED BY THE GENERAL PLAN EIR

The Project was considered in the Rancho Cordova General Plan and General Plan EIR (referred to as The Preserve at Sunridge in Table 4.0 of the General Plan EIR), as discussed in Section 3.9, Land Use. The Rancho Cordova General Plan EIR addressed a full range of cumulative impacts, as discussed below, but did not address cumulative impacts associated with greenhouse gases and climate change or tribal cultural resources. At the time the General Plan EIR was written, the Tribal Cultural Resources section of Appendix G of the CEQA Guidelines did not exist as a standalone section. Additionally, recent case law and state legislation has resulted in a need to revisit the greenhouse gases and climate change cumulative analysis. As such, this chapter includes a cumulative analysis for tribal cultural resources and greenhouse gases and climate change that would result from development of the Project. Further, in order to refine the cumulative analyses associated with noise and transportation that is included in the General Plan EIR, Sections 3.10, Noise, and 3.13, Transportation and Circulation, include detailed cumulative analyses for the Project.

The Project does not have any peculiar or unique components that would result in a contribution to cumulative impacts that would be greater than those analyzed for the Project site as part of the General Plan EIR; the Project proposes fewer residential units and comparable developed acreage when compared to the assumptions for the Project site evaluated in the General Plan EIR. The Rancho Cordova General Plan EIR determined that implementation of the General Plan, including buildout of the General Plan Planning Area, would result in the following cumulatively considerable and less than cumulatively considerable cumulative impacts:

- **Cumulative Land Use Effects.** Impact 4.1.5: When considered with existing, proposed, planned and approved development in the region, implementation of the Rancho Cordova General Plan has the potential to contribute to cumulative land use conditions in the region that result in significant impacts to the physical environment. This is considered a cumulatively considerable impact.

- **Cumulative Impacts to Agricultural Resources.** Impact 4.2.4: Implementation of the General Plan Land Use Map Book, along with other proposed development in Sacramento County, would contribute to the additional conversion of important farmland to other uses and may increase agriculture/urban interface conflicts. This is a cumulatively considerable impact.
- **Cumulative Population and Housing Increases.** Impact 4.3.3: Buildout in the planning area, under the General Plan Land Use Map, would include substantial population, housing unit and employment increases. This is considered a cumulatively considerable impact.
- **Cumulative Hazards and Health Risks.** Impact 4.4.5: Persons could be exposed to contaminated soil or groundwater during development of previously contaminated sites or sites undergoing remediation. Implementation of the General Plan policies and action items as well as existing regulatory requirements and standards would reduce impacts so that they are considered less than cumulatively considerable.
- **Cumulative Traffic Impacts on Local Roadways and State Highways.** Impact 4.5.6: When considered with existing, proposed, planned and approved development in the region, implementation of the Rancho Cordova General Plan would contribute to cumulative traffic volumes in the region that result in significant impacts to level of service and operations. This is considered a cumulatively considerable impact.
- **Cumulative Transit System.** Impact 4.5.7: Implementation of the General Plan would contribute to the cumulative demand for public transit service (e.g., bus and light rail service). The General Plan's contribution is considered less than cumulatively considerable.
- **Cumulative Bicycle and Pedestrian System.** Impact 4.5.8: Implementation of the proposed General Plan would contribute to cumulative demands for pedestrian and bicycle infrastructure. The General Plan's contribution is considered less than cumulatively considerable.
- **Cumulative Regional Air Quality Impacts.** Impact 4.6.6: Implementation of the proposed General Plan along with potential development of the Planning Area would exacerbate existing regional problems with ozone and particulate matter. The General Plan's contribution to these conditions is considered cumulatively considerable.
- **Cumulative Traffic Noise.** Impact 4.7.6: Implementation of the General Plan, in combination with regional growth and traffic conditions (pass-through traffic), would increase transportation noise along area roadways. This would be a cumulatively considerable impact.
- **Cumulative Stationary Noise.** Impact 4.7.7: Implementation of the General Plan, in combination with regional growth in surrounding communities outside of the Planning Area, would increase stationary noise. This is considered a cumulatively considerable impact.
- **Cumulative Airport Noise.** Impact 4.7.8: Implementation of the General Plan, in combination with regional growth in the Planning Area and surrounding communities, would subject more noise-sensitive land uses to airport noise. This is considered a less than cumulatively considerable impact.

- **Cumulative Geologic and Soils.** Impact 4.8.6: Implementation of the General Plan, in combination with existing, planned, proposed and reasonably foreseeable development, would not contribute to cumulative geologic and soil impacts, as the impacts would be site-specific and not additive in character. Thus, the General Plan's contribution would be less than cumulatively considerable.
- **Cumulative Mineral Resources.** Impact 4.8.7: Implementation of the General Plan, together with past, present and probable future projects in the area, would result in a cumulatively significant loss of mineral resources in the region. The General Plan's incremental contribution to the loss of mineral resources is cumulatively considerable.
- **Cumulative Water Quality.** Impact 4.9.5: Implementation of the General Plan and potential development of the Planning Area would include substantial grading, site preparation, and an increase in urbanized development. Increased development would contribute to cumulative water quality impacts and is considered cumulatively considerable.
- **Cumulative Flood Hazards.** Impact 4.9.6: Implementation of the General Plan would increase impervious surfaces and alter drainage conditions and rates in the Planning Area, which could contribute to cumulative flood conditions along the American River, Sacramento River, Cosumnes River, and local waterways. However, the General Plan contains adequate General Plan policies and action items that address drainage and flooding issues. This is considered a less than cumulatively considerable impact.
- **Cumulative Water Supply.** Impact 4.9.7: Implementation of the General Plan would contribute to an increased demand for water supply requiring increased groundwater production and the use of surface water supplies that could result in significant environmental impacts. This is considered a cumulatively considerable impact.
- **Cumulative Biological Resources.** Impact 4.10.8: Implementation of the General Plan, together with past, present, and probable future projects in the Planning Area and larger regional context would result in a cumulatively significant loss of biological resources in the region. The General Plan's incremental contribution to this significant cumulative impact is cumulatively considerable.
- **Prehistoric Resources, Historic Resources, and Human Remains.** Impact 4.11.3: Adoption of the Rancho Cordova General Plan along with foreseeable development in the region could result in the disturbance of cultural resources (i.e., prehistoric sites, historic sites, and isolated artifacts and features) and human remains. This contribution is considered cumulatively considerable.
- **Cumulative Paleontological Resources.** Impact 4.11.4: Adoption of the Rancho Cordova General Plan along with any foreseeable development in the region could result in the potential disturbance of paleontological resources (i.e., fossils and fossil formations). This is considered a less than cumulatively considerable impact.
- **Cumulative Fire Protection and Emergency Medical Services.** Impact 4.12.1.2: Implementation of the General Plan in combination with other reasonably foreseeable development (based on Sacramento County, and the cities of Folsom, Elk Grove, Citrus Heights, Galt, Lodi, and Sacramento General Plans land use projections), would increase

the population within the Sacramento Metropolitan Fire District service area, requiring additional fire and emergency medical services and related facilities. The City's contribution to the need for expanded fire protection services is considered less than cumulatively considerable.

- **Cumulative Design-Related Safety Concerns.** Impact 4.12.2.3: Implementation of the General Plan and other reasonably foreseeable development in southeastern Sacramento County (based on Sacramento County land use projections) would increase the population within the Planning Area and surrounding area and would require additional law enforcement services and related facilities under cumulative conditions. This is a less than cumulatively considerable impact.
- **Cumulative Water Service.** Impact 4.12.3.2 Implementation of the General Plan would contribute to the need for additional treatment capacity, storage capacity, and other conveyance facilities to meet cumulative water demands with SCWA, GSWC and Cal-Am. The General Plan's contribution would be cumulatively considerable.
- **Cumulative Wastewater Conveyance and Treatment.** Impact 4.12.4.2: Implementation of the General Plan, in addition to other reasonably foreseeable development in eastern Sacramento County (based on the land use projections established in the Sacramento County General Plan), would substantially increase in wastewater flows and require additional infrastructure and treatment capacity that would result in a physical effect on the environment. This is considered cumulatively considerable.
- **Cumulative Solid Waste Service**. Impact 4.12.5.2: The General Plan, in addition to proposed and approved projects in the region area, would generate solid waste that would require expanded collection and disposal services. The General Plan's contribution would be less than cumulatively considerable.
- **Cumulative Public Schools.** Impact 4.12.6.2: Implementation of the General Plan in combination with other reasonably foreseeable development (based on General Plan land use projections for Sacramento County, Folsom, and Elk Grove) proposed in eastern Sacramento County would result in a cumulative increase in student enrollment and require additional schools and related facilities to accommodate the growth. This is a less than cumulatively considerable impact.
- **Cumulative Park and Recreation Demands**. Impact 4.12.7.3: Implementation of the General Plan in combination with other reasonably foreseeable development would require additional park and recreation facilities within the Planning Area boundaries and CRPD's service area boundaries. This would be a less than cumulatively considerable impact.
- **Cumulative Electrical, Telephone, and Cable Services**. Impact 4.12.8.2: Implementation of the General Plan as well as potential development in the surrounding areas (based on Sacramento County General Plan land use projections) would result in cumulative utility service impacts. The General Plan 's contribution would be less than cumulatively considerable.
- **Alteration of Visual Character.** Impact 4.13.3: Implementation of the General Plan will encourage new development and redevelopment activities that could degrade the existing

visual character or quality of the Planning Area. This is considered a potentially significant impact.

- **Cumulative Visual Resources.** Impact 4.13.5: Implementation of the General Plan will encourage new development and redevelopment activities that would contribute to the cumulative alteration of existing landscape characteristics of the region. This impact is cumulatively considerable.

Because the Project does not have any peculiar or unique components that would result in a contribution to cumulative impacts that would be greater than those analyzed for the Project site as part of the General Plan EIR, and because the Project proposes fewer residential units and comparable developed acreage when compared to the assumptions for the Project site evaluated in the General Plan EIR, the Project would not result in increased impacts to the above-listed cumulative topics.

Cumulative Impacts not Addressed by the General Plan EIR

As discussed throughout this EIR, the Project is consistent with the City's General Plan vision for the Project site. The impacts of development of the City's Planning Area, which includes the Project site, are analyzed in the City's General Plan EIR. There is no substantial new information that would indicate that the Project's impacts would be more severe or more adverse. As such, this chapter focuses on cumulative impacts related to the topics that were not analyzed in the Rancho Cordova General Plan EIR, including: greenhouse gases, climate change, and energy; and tribal cultural resources.

METHOD OF ANALYSIS

Although the environmental effects of an individual project may not be significant when that project is considered separately, the combined effects of several projects may be significant when considered collectively. State CEQA Guidelines Section 15130 requires a reasonable analysis of a project's cumulative impacts, which are defined as "two or more individual effects which, when considered together are considerable or which compound or increase other environmental impacts." The cumulative impact that results from several closely related projects is: the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (State CEQA Guidelines Section 15355[b]). Consistent with State CEQA Guidelines Section 15130(a), the discussion of cumulative impacts in this Draft EIR focuses on significant and potentially significant cumulative impacts. According to Section 15130(b) of the State CEQA Guidelines, in part, "The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact."

The goal of analysis of cumulative impacts is twofold: first, to determine whether the overall long-term impacts of all such projects would be cumulatively significant; and second, to determine whether the Project itself would cause a "cumulatively considerable" (and thus significant) incremental contribution to any such cumulatively significant impacts. (See State CEQA Guidelines Sections 15130[a]-[b], 15355[b], 15064[h], and 15065[c]; Communities for a Better Environment v. California Resources Agency [2002] 103 Cal.App.4th 98, 120.) In other words, the required analysis first creates a broad context in which to assess the project's incremental contribution to anticipated cumulative impacts, viewed on a geographic scale well beyond the project site itself, and then determines whether the Project's incremental contribution to any significant cumulative impacts from all projects is itself significant (i.e., "cumulatively considerable").

There are two approaches to identifying cumulative projects and the associated impacts. The list approach identifies individual projects known to be occurring or proposed in the surrounding area in order to potential cumulative impacts. The projection approach uses a summary of projections in adopted General Plans or related planning documents to identify potential cumulative impacts. This EIR uses the projection approach for the cumulative analysis and considers the development anticipated to occur in the region, including growth associated with the buildout of the Rancho Cordova General Plan, as discussed above under the cumulative setting.

PROJECT ASSUMPTIONS

The Project's contribution to environmental impacts under cumulative conditions is based on full buildout of the Project. See Chapter 2.0, Project Description, for a complete description of the Project.

CUMULATIVE IMPACTS

Cumulative impacts for tribal cultural resources are not quantifiable and are therefore discussed in qualitative terms as they pertain to development patterns in the surrounding region. As discussed below, the analysis of GHGs and climate change provided in Section 3.9 is within the cumulative context. In consideration of the cumulative scenario described above, the Project may result in the following cumulative impacts.

CULTURAL AND TRIBAL RESOURCES

Impact 4.1: The Project may contribute to cumulative impacts on known and undiscovered tribal cultural resources (Less than Cumulatively Considerable)

The cumulative setting for cultural resources includes the City of Rancho Cordova Planning Area and the surrounding areas of Sacramento County. Cumulative development anticipated in Rancho Cordova and the greater Sacramento County area, including growth projected by adopted general plans, may result in the discovery and removal of cultural resources, including archaeological, historical, and Native American resources and human remains. As discussed in Section 3.4, Cultural and Tribal Resources, the Project site is located in an area known to have historical, archaeological, and tribal cultural resources. However, field surveys of the site have not identified any tribal cultural resources, as described in Section 3.4. As discussed in Section 3.4, tribal representatives were contacted regarding the Project and no resources were identified on the Project site.

However, the potential remains for the discovery of tribal cultural resources as discussed in Section 3.4. Mitigation measures provided in Section 3.4 would require the Project to evaluate any resources discovered during construction activities and ensure that in the event of an unanticipated discovery of tribal cultural resources, the discovered resources would be evaluated, affected tribes would be provided the opportunity to consult on the significance and recommended methods for conservation and preservation, and that adequate measures would be taken to document and address the find. Any significant finds would be required to be preserved, either through relocation or documentation, and the Project is not anticipated to considerably contribute to a significant reduction in tribal cultural resources. Therefore, the Project would have a ***less than cumulatively considerable*** contribution to impacts to cultural resources and no further mitigation is required.

GREENHOUSE GASES, CLIMATE CHANGE, AND ENERGY

Impact 4.2: The Project may contribute to cumulative impacts on greenhouse gases and climate change (Less than Cumulatively Considerable)

The cumulative setting for this issue comprises anthropogenic (i.e., human-made) GHG emissions sources across the globe and no project alone would reasonably be expected to contribute to a noticeable incremental change to the global climate. However, legislation and executive orders on the subject of climate change in California have established a statewide context and process for developing an enforceable statewide cap on GHG emissions. Given the nature of environmental consequences from GHGs and global climate change, CEQA requires that lead agencies consider evaluating the cumulative impacts of GHGs. Small contributions to this cumulative impact (from which significant effects are occurring and are expected to worsen over time) may be potentially considerable and, therefore, significant.

Emissions of GHGs have the potential to adversely affect the environment in a cumulative context. The emissions from a single project will not cause global climate change, however, GHG emissions from multiple projects throughout the world could result in a cumulative impact with respect to global climate change. Therefore, the analysis of GHGs and climate change presented in Section 3.6 is presented in terms of the Project's contribution to cumulative impacts and potential to result in cumulatively considerable impacts related to GHGs and climate change.

The analysis of GHGs and climate change included in Section 3.6 was conducted at the cumulative level, as described in greater detail in that EIR section. As described in Section 3.6, the Project is consistent with statewide, regional, and local planning efforts to reduce GHG emissions. The Project is consistent with the State of California GHG reduction targets (as identified by Assembly Bill 32, Senate Bill 32, and the Scoping Plan), Sacramento Area Council of Governments Metropolitan Transportation Plan/Sustainable Communities Strategy, Executive Order B-30-15 and the Sacramento Metropolitan Air Quality Management District CEQA Guide. Additionally, the Project would ensure that all residential uses either have on-site renewable energy systems or are served through purchased renewable energy, provide energy efficient appliances and lighting, and include comprehensive measures to promote use of electric vehicles. As discussed in Section 3.6, the Project would have a less than significant impact related to the use of inefficient, wasteful, or

unnecessary use of energy, and would not cause a considerable contribution to cumulative impacts associated with the use of energy. Due to the Project's consistency with State and regional plans to address greenhouse gas emissions with implementation of Mitigation Measures 3.2-1 and 3.6-1 as discussed in Section 3.6 of this Draft EIR, the Project would have a ***less than cumulatively considerable*** impact, and no further mitigation is required.

4.2 GROWTH-INDUCING EFFECTS

INTRODUCTION

Section 15126.2(d) of the CEQA Guidelines requires that an EIR evaluate the growth-inducing impacts of a proposed action. A growth-inducing impact is defined by the CEQA Guidelines as:

> *The way in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth…It is not assumed that growth in an area is necessarily beneficial, detrimental, or of little significance to the environment.*

Section 15126 of the CEQA Guidelines identifies criteria for evaluating the extent to which growth could be induced, accelerated, intensified, or shifted as a result of the Project. Subsection (d) provides the framework for a discussion of these potential growth-inducing impacts, as follows:

- Would the project foster economic or population growth or the construction of additional housing?
- Would the project remove obstacles to population growth?
- Would the project tax existing community facilities?
- Would the project encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively?

The Project would result in the construction of additional housing within the City of Rancho Cordova. As discussed in Section 3.11, Population and Housing, the Project would not result in direct or indirect population growth beyond the City's planned capacity. The Project would not remove any barriers to growth. Growth within the Project area has been anticipated by the City since its incorporation in 2003 and adoption of the General Plan in 2006. The Project site is bound by the Sunridge Specific Plan to the north, east, and west, and by the SunCreek Specific Plan to the south and east. Much of the utilities infrastructure that would be extended to serve the Project site is currently developed and stubbed adjacent to the Project site. Additionally, public service providers have anticipated development of the site and adjacent areas. Existing school facilities are located in the vicinity of the site, and a fire station was also constructed west of the site in order to serve the existing and future uses within the Project vicinity. As discussed in Section 3.14, the Project would include sewer improvements that accommodate other approved development projects. This increase in sewer capacity is consistent with the Sacramento Area Sewer District's

service plans and would implement master infrastructure improvements to accommodate planned and approved development.

By providing additional age-restricted housing, non-age restricted housing, commercial uses, and parks uses within the City of Rancho Cordova, the Project would provide areas for seniors and other members of the community to live, shop, and recreate and would accommodate population and employment growth consistent with the vision of the General Plan.

Additionally, as discussed in Section 3.12, Public Services and Recreation, the Project would increase demand for other public facilities within the City of Rancho Cordova, such as libraries and community buildings. However, given that the additional population increase associated with the Project is a small percentage of the population of the City as a whole, significant impacts due to increased demand on libraries and community facilities are not expected and the demand on such services and facilities associated with the Project is consistent with planned growth for the Project area. In addition to the 19.24 acres of park and recreation facilities, the Project includes a 27,000 square-foot community clubhouse in the age-restricted portion of the Project.

As demonstrated throughout this Draft EIR, the Project would not encourage or facilitate other growth-inducing activities, beyond the activities and growth addressed in this Draft EIR, that could significantly affect the environment, either individually or cumulatively.

4.3 SIGNIFICANT IRREVERSIBLE EFFECTS

Legal Considerations

CEQA Guidelines Section 15126.2() and Public Resources Code Sections 21100(b)(2) and 21100.1(a), require that the EIR include a discussion of significant irreversible environmental changes which would be involved in the proposed action should it be implemented. Irreversible environmental effects are described as:

- The project would involve a large commitment of nonrenewable resources;
- The primary and secondary impacts of a project would generally commit future generations to similar uses (e.g., a highway provides access to previously remote area);
- The project involves uses in which irreversible damage could result from any potential environmental accidents associated with the project; or
- The phasing of the proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

Determining whether the Project would result in significant irreversible effects requires a determination of whether key resources would be degraded or destroyed such that there would be little possibility of restoring them. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

Analysis

Implementation of the Project would result in the development of a residential mixed use Project on 530 acres of unoccupied land that is currently designated Urban Development Area (UDA) by the Rancho Cordova General Plan. This property was previously used for agricultural purposes (cattle grazing). Development of the Project would constitute a long-term commitment to residential uses. It is unlikely that circumstances would arise that would justify the return of the land to its prior condition.

A variety of resources, including land, energy, water, construction materials, and human resources would be irretrievably committed for the Project's initial construction, infrastructure installation, and its continued maintenance. Construction of the Project would require the commitment of a variety of other non-renewable or slowly renewable natural resources such as lumber and other forest products, sand and gravel, asphalt, petrochemicals, and metals.

Additionally, a variety of resources would be committed to the ongoing operation and life of the Project. The introduction of new residential uses to the site will result in an increase in area traffic over existing conditions. Fossil fuels are the principal source of energy and the Project will increase consumption of available supplies, including gasoline and diesel fuel, and natural gas. These energy resource demands relate to initial Project construction, Project operation and site maintenance and the transport of people and goods to and from the Project site. Additional information the estimated energy usage of the Project can be found under Impact 3.6-4 of Section 3.6, Greenhouse Gases, Climate Change, and Energy, of this EIR. This impact concluded that Project implementation would not result in the inefficient, wasteful, or unnecessary use of energy resources as outlined in Section 15126.2 of the CEQA Guidelines.

4.4 SIGNIFICANT AND UNAVOIDABLE IMPACTS

CEQA Guidelines Section 15126.2(c) requires an EIR to discuss unavoidable significant environmental effects, including those that can be mitigated but not reduced to a level of insignificance. The following significant and unavoidable impacts of the Project are discussed in Chapters 3.1 through 3.14 (Project-level) and Chapter 4.0.

- Impact 3.1-1: Project implementation would result in substantial adverse effects on scenic vistas and resources or substantial degradation of visual character
- Impact 3.13-1: Under Existing (2017) Plus Project conditions, Project may conflict with an applicable program, plan, ordinance or policy addressing the circulation system – Roadway Segments and Intersections
- Impact 3.13-2: Under Cumulative (2040) Plus Project conditions, Project may conflict with an applicable program, plan, ordinance or policy addressing the circulation system – Roadway Segments and Intersections

This page left intentionally blank.

5.1 CEQA REQUIREMENTS

The California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) analyze a reasonable range of feasible alternatives that meet most or all Project objectives while reducing or avoiding one or more significant environmental effects of the Project. The range of alternatives required in an EIR is governed by a "rule of reason" that requires an EIR to set forth only those alternatives necessary to permit a reasoned choice (CEQA Guidelines Section 15126.6[f]). Where a potential alternative was examined but not chosen as one of the alternatives, the CEQA Guidelines require that the EIR briefly discuss the reasons the alternative was dismissed.

Alternatives that are evaluated in the EIR must be potentially feasible alternatives. However, not all possible alternatives need to be analyzed. An EIR must "set forth only those alternatives necessary to permit a reasoned choice." (CEQA Guidelines, Section 15126.6(f).) The CEQA Guidelines provide a definition for a "range of reasonable alternatives" and, thus limit the number and type of alternatives that need to be evaluated in an EIR.

First and foremost, alternatives in an EIR must be potentially feasible. In the context of CEQA, "feasible" is defined as:

> *… capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors.* (CEQA Guidelines 15364)

The inclusion of an alternative in an EIR is not evidence that it is feasible as a matter of law, but rather reflects the judgment of lead agency staff that the alternative is potentially feasible. The final determination of feasibility will be made by the lead agency decision-making body through the adoption of CEQA Findings at the time of action on the Project. (Mira Mar Mobile Community v. City of Oceanside (2004) 119 Cal.App.4th 477, 489 see also CEQA Guidelines Section 15091(a)(3) findings requirement, where alternatives can be rejected as infeasible); Section 15126.6 ([an EIR] must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation"). The following factors may be taken into consideration in the assessment of the feasibility of alternatives: site suitability, economic viability, availability of infrastructure, general plan consistency, other plan or regulatory limitations, jurisdictional boundaries, and the ability of the proponent to attain site control (Section 15126.6 (f) (1)).

Equally important to attaining the Project objectives is the reduction of some or all significant impacts, particularly those that could not be mitigated to a less than significant level. The following significant and unavoidable impacts of the Project are discussed in Chapters 3.1 through 3.14:

- Impact 3.1-1: Project implementation would result in substantial adverse effects on scenic vistas and resources or substantial degradation of visual character;
- Impact 3.13-1: Under Existing (2017) Plus Project conditions, the Project may conflict with an applicable program, plan, ordinance or policy addressing the circulation system – Roadway Segments and Intersections; and
- Impact 3.13-2: Under Cumulative (2040) Plus Project conditions, the Project may conflict with an applicable program, plan, ordinance or policy addressing the circulation system – Roadway Segments and Intersections.

The following analysis of alternatives focuses on significant impacts, including both those that can be mitigated to a less than significant level and those that would remain significant even if mitigation is applied or for which no feasible mitigation is available.

A Notice of Preparation was circulated to the public to solicit recommendations for a reasonable range of alternatives to the Project. Additionally, a public scoping meeting was held during the public review period to solicit recommendations for a reasonable range of alternatives to the Project. No comments related to potential alternatives to the Project were received.

PROJECT OBJECTIVES

The alternatives to the Project selected for analysis in the EIR were developed to minimize significant environmental impacts while fulfilling the basic objectives of the Project. As described in Chapter 2.0, Project Description, the following objectives have been identified for The Ranch Project:

- Create a high-quality development that implements the vision of the General Plan, which designates the Project site for development with a local town center, a mix of residential densities, and a natural resources preserve;
- Respect the Project site's existing natural features through preservation of 199.5 acres of wetlands, vernal pools, and open space;
- Provide a residential development that would assist the City in meeting its housing needs, including a range of housing types to serve the senior population;
- Provide a residential development that would assist the City in meeting its affordability goals providing housing at many price points and attract residents from different areas;
- Create a unique age-restricted community that provides a mix of housing types and amenities, including a club house and recreation facility;
- Accommodate neighborhood-serving commercial uses as part of the town center;
- Implement the City's Bicycle and Pedestrian Master Plans through providing an on-site bicycle and pedestrian network that is accessible by the general public and provides opportunities for connectivity with bicycle and pedestrian facilities on adjacent properties; and
- Implement the City's Transit Master Plan through providing a Signature Transit Station and accommodating the Signature Transit Route along Rancho Cordova Parkway.

ALTERNATIVES NOT SELECTED FOR FURTHER ANALYSIS

Alternatives to the Project were considered, but rejected from further analysis. These alternatives included an alternative site location and a Project redesign alternative. The alternatives that were rejected from further analysis are discussed below.

Alternative Site Location

The City of Rancho Cordova considered alternative locations early in the public scoping process. The City's key considerations in identifying an alternative location were as follows:

- Is there an alternative location where significant effects of the project would be avoided or substantially lessened?
- Is there a site available within the City's Sphere of Influence with the appropriate size and characteristics such that it would meet the basic project objectives?

A hypothetical off-site alternative was considered but dismissed from further analysis. The Project applicant has not been able to identify a potential site for acquisition that meets the Project objectives. There are no alternative sites in the City suited for development that the Project applicant could reasonably acquire which would replace the proposed site (in size and physical characteristics) and also avoid significant impacts that would result from Project implementation. It is anticipated that a project of comparable size would result in similar transportation/circulation and aesthetic impacts in an alternative location. An off-site location could result in additional environmental impacts compared to the Project because of increased construction impacts (noise, air quality, water runoff, etc.) stemming from the extension of the basic infrastructure if the site is not proximate to existing infrastructure. Additionally, development of the Project site for residential mixed uses is identified by the City's General Plan and the Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS). Further, development of an off-site location would not result in preservation of the Project site in the long-term as it would likely develop with residential, commercial, and other uses as envisioned by the General Plan and the MTP/SCS. Therefore, the Off-Site Location Alternative is dismissed from further analysis.

In addition, as discussed in *Citizens of Goleta Valley v. Board of Supervisors (1990) 52 Cal.3d 553 (Goleta II*), where a project is consistent with an approved general plan, no off-site alternative need be analyzed in the EIR. The EIR "is not ordinarily an occasion for the reconsideration or overhaul of fundamental land-use policy." (Goleta II, supra, 52 Cal.3d at p. 573.) In approving a general plan, the local agency has already identified and analyzed suitable alternative sites for particular types of development and has selected a feasible land use plan. "Informed and enlightened regional planning does not demand a project EIR dedicated to defining alternative sites without regard to feasibility. Such ad hoc reconsideration of basic planning policy is not only unnecessary, but would be in contravention of the legislative goal of long-term, comprehensive planning." (Goleta II, supra, 52 Cal.3d at pp. 572-573.) Here, the Project is generally consistent with the types of uses considered in the General Plan and associated EIR. As discussed in Section 3.9, Land Use, of this EIR, the Rancho Cordova General Plan currently designates the Project site as the SunCreek/Preserve Planning Area. The Project is consistent

with the City's General Plan. Thus, in addition to the reasons discussed above, an off-site alternative need not be further discussed in this EIR.

Project Redesign

Under the Project Redesign Alternative, the number of residential and non-residential uses would remain the same and would be constructed at the Project site, but with a revised design and layout. For example, the preserve area could be relocated or redesigned. The Project has been designed to avoid impacts to natural resources present on the Project site and has been proposed with less development than was anticipated under the Rancho Cordova General Plan and General Plan EIR in order to preserve natural features on the Project site. Due to the extensive wetland and vernal pool features present on the Project site, a significant redesign may avoid some of the existing impacts to wetlands and other waters of the U.S. and State, but would create new impacts to wetlands and other waters of the U.S. in other locations on the Project site, resulting in potential impacts associated with biological resources and water quality. This alternative would not result in a significant reduction in impacts associated with re-arranging uses on the Project site. Therefore, the Project Redesign Alternative is dismissed from further analysis.

5.2 ALTERNATIVES CONSIDERED IN THIS EIR

Three alternatives to the Project were developed based on City of Rancho Cordova staff input and the technical analysis performed to identify the environmental effects of the Project. The alternatives analyzed in this EIR include the following three alternatives in addition to the Project:

- No Project Alternative
- Reduced Project Alternative #1
- Reduced Project Alternative #2

NO PROJECT ALTERNATIVE

The CEQA Guidelines (Section 15126.6[e]) require consideration of a No Project Alternative that represents the existing conditions, as well as what would reasonably be expected to occur in the foreseeable future if the Project were not approved. For purposes of this analysis, the No Project Alternative assumes that the Project site remains in its existing state and no additional development would occur in the short-term. However, it is anticipated that a new development Project would be submitted and that the Project site would be developed with uses consistent with the General Plan, as described for the SunCreek/Preserve Planning Area. The current condition of the site is largely undeveloped and has accommodated agricultural uses (cattle grazing) in the past.

As noted above, the Rancho Cordova General Plan currently designates the Project site as the SunCreek/Preserve Planning Area. While the No Project Alternative may delay the development of the Project site, in the mid- to long-term, the Project site is anticipated to be developed as envisioned by the General Plan. The No Project Alternative would allow the Project site to be

converted from agricultural to a development with a mix of residential densities, town center uses, and parks/recreation uses as envisioned by the General Plan. The assumed maximum buildout of the project site as envisioned in the General Plan EIR includes 2,624 residential units on 303.5 acres, as well as a village center with commercial uses, park areas and wetland preserve. This maximum buildout for the Project site is identified in Table 4.0-1 of the General Plan Draft EIR in "The Preserve at Sunridge" row on page 4.0-6. The development scenario envisioned under the General Plan would be more intense than anticipated for the Project under the No Project Alternative. The preserve would be smaller than the area preserved by the Project and additional impacts to wetlands and other waters of the U.S. and state are anticipated under this alternative.

REDUCED PROJECT ALTERNATIVE #1

Under Reduced Project Alternative #1, the Project site would be developed with the same amount of non-residential uses as the Project, but with a reduction in the amount of residential development (age-restricted and non-age-restricted). This alternative would result in:

- 59,000 sf of non-residential uses (32,000 sf of commercial and a 27,000-sf clubhouse),
- 637 single-family non-age-restricted units,
- 643 single-family active adult age-restricted units,
- 50 active adult multifamily units, and
- 268 multifamily non-age-restricted units (or the same amount as the Project).

Under the Reduced Project Alternative #1, 100 single family non-age-restricted units and 50 active adult single family units would be eliminated. This alternative would avoid impacts to an additional 0.025 acres of seasonal wetlands and 0.668 acres of vernal pools. This alternative would also include increased setbacks from Rancho Cordova Parkway aimed to reduce impacts related to aesthetics. The proposed amenities, bicycle and pedestrian improvements, and landscaping would be the same as the Project. The development footprint would be decreased compared to the Project.

REDUCED PROJECT ALTERNATIVE #2

Under Reduced Project Alternative #2, the Project site would be developed with the same amount of non-residential uses as the Project, but with a reduction in the amount of residential development (non-age-restricted only). This alternative would result in:

- 59,000 sf of non-residential uses (32,000 sf of commercial and a 27,000-sf clubhouse),
- 477 single-family non-age-restricted units,
- 693 single-family age-restricted units,
- 50 multifamily age-restricted units, and
- 268 multifamily non-age-restricted units.

This alternative would result in a reduction in 260 single family non-age-restricted units. This alternative would also include increased setbacks, landscaped areas, and parks aimed to reduce impacts related to aesthetics. This alternative would avoid impacts to an additional 0.025 acres

of seasonal wetlands and 0.668 acres of vernal pools. The proposed amenities, bicycle and pedestrian improvements, and landscaping would be the same as the Project. The development footprint would be decreased compared to the Project.

Table 5.0-1 compares the characteristics of the Project to each of the three alternatives analyzed below. Table 5.0-2 compares trips generated by the Project to each of the three alternatives analyzed below.

TABLE 5.0-1: COMPARISON OF PROJECT CHARACTERISTICS TO THE ALTERNATIVES

COMPONENT	*PROJECT*	*NO PROJECT ALTERNATIVE*	*REDUCED PROJECT ALTERNATIVE #1*	*REDUCED PROJECT ALTERNATIVE #2*
Single Family, Non-Age-Restricted (Units)	735	1,124	637	477
Single Family Units, Senior Age-Restricted (Units)	737	1,000	643	693
Multifamily, Non-Age-Restricted (Units)	215	400	268	268
Multifamily Units, Senior Age-Restricted (Units)	38	100	50	50
Subtotal Dwelling Units	*1,725*	*2,624*	*1,598*	*1,488*
Senior Community Clubhouse (square feet)	27,000	27,000	27,000	27,000
Commercial Parcel (acres)	5.16	5.08	5.08	5.08
Parks and Recreation (acres)	19.24	19.24	19.24	19.24
Nature Preserve (acres)	199.5	136.8	212.0	221.1

TABLE 5.0-2: COMPARISON OF PROJECT TRIPS TO THE ALTERNATIVES

LAND USE	*THE RANCH PROJECT*			*ALTERNATIVE 1*		*ALTERNATIVE 2*		*ALTERNATIVE 3*	
	UNITS	*TOTAL TRIPS*	*TRIP RATE*[1]	*UNITS*	*TRIPS*	*UNITS*	*TOTAL TRIPS*	*UNITS*	*TOTAL TRIPS*
Single Family, Non-restricted (units)	735	6,796	9.246	1,124	10,393	637	5,890	477	4,410
Multifamily, Non-restricted (units)	215	1225	5.698	1,000	5,698	268	1,527	268	1,527
Senior Single Family (units)	737	2519	3.418	400	1,367	643	2,198	693	2,369
Senior Multifamily (units)	38	112	2.947	100	295	50	147	40	118
Shopping Center (thousand square feet)	32	954	29.813	32	954	32	954	32	954
TOTAL	**-**	**11,606**		**-**	**18,707**	**-**	**10,716**	**-**	**9,378**

[1]*TRIP RATES CALCULATED BASED ON KIMLEY HORN JAEGER RANCH SUPPLEMENTAL TRAFFIC ANALYSIS, TRIP GENERATION MEMORANDUM, JUNE 12, 2019*

5.3 ENVIRONMENTAL ANALYSIS

The alternatives analysis provides a summary of the relative impact level of significance associated with each alternative for each of the environmental issue areas analyzed in this EIR. Following the analysis of each alternative, Table 5.0-3 summarizes the comparative effects of each alternative.

NO PROJECT ALTERNATIVE

Aesthetics and Visual Resources

The No Project Alternative would result in the long-term development of the Project site with up to 2,624 residential units, a village center, and park uses. Similar to the Project, this alternative would result in increases in daytime glare and nighttime lighting. The visual character of the Project site would change under this alternative compared to existing conditions.

As described in Chapter 3.1, the visual character of the Project site would be significantly altered as a result of Project implementation. Compliance with the City's design guidelines and the proposed Architectural + Site Design Guidelines for multi-family parcels and commercial parcels would ensure that impacts are reduced to the greatest extent possible. Nevertheless, impacts related to degradation of the visual character of the site would be significant and unavoidable.

Implementation of Mitigation Measure 3.1-1 would ensure that lighting features do not result in light spillage onto adjacent properties and do not significantly impact views of the night sky. Adherence to the requirements in this mitigation would ensure that excessively reflective building materials are not used, and that the Project would not result in significant impacts related to daytime glare. As such, impacts related to nighttime lighting and daytime glare would be less than significant.

In summary, the Project would result in new sources of light and glare and would also result in impacts to the existing visual character or quality of the Project site and its surroundings. The No Project Alternative would result in construction of 2,624 units on 303.5 acres, a village center, and park uses throughout the Project site. In order to avoid the on-site aquatic habitats, the No Project Alternative would also cluster development to maintain large open space characteristic of the Project. However, because this alternative would result in up to 876 more units than the Project, the development footprint would be required to increase, densities may increase, there would be additional potential sources of light and glare, and less preservation of open space and natural resources would occur. Therefore, aesthetic impacts would not be reduced by this alternative and would be worse than the Project.

Air Quality

As described in Section 3.2, implementation of the Project would generate emissions during both the construction phase and the operational phase. The projected emissions would be reduced to a level that does not exceed the project-level operational thresholds of significance with implementation of the mitigation measures in Section 3.2.

Construction related impacts would be greater under this alternative when compared to the Project, as the extent of development would be increased and duration of construction would be increased. Under this alternative, mobile source emissions and emissions associated with residential operations would increase. Mobile source (vehicle emissions) are directly related to the number of vehicle trips generated by a project. Under this alternative, a greater number of people and residential units would be located on the Project site due to the substantial increase in units, which would generate approximately 7,101 more daily vehicle trips when compared to the Project, as shown in Table 5.0-2. As a result, this alternative would generate higher levels of pollutants from mobile sources. Therefore, this alternative would have increased impacts related to air quality when compared to the Project.

Biological Resources

As described in Section 3.3, while Project implementation is not anticipated to result in significant impacts to biological resources, construction activities associated with the Project would result in impacts to wetlands and ground disturbing activities associated with the potential to impact or harm biological resources, including special-status species. Under the No Project Alternative, the Project site would be developed with up to 2,624 units, a village center, and park areas. Due to the increased development intensities, this alternative would dedicate a lesser amount of the Project site for open space and wetland preserve uses compared to the Project. Due to the on-site aquatic resources, any future project on the Project site that is consistent with the General Plan would likely be designed to minimize and avoid impacts to wetlands and other waters of the U.S. Because this alternative would result in a decrease in the amount of open space preserved, including a decrease in the preservation of sensitive aquatic resources, impacts to biological resources would be worse than the Project, although such impacts would be reduced to less than significant with implementation of mitigation. Overall, this impact would have greater impacts on biological resources when compared to the Project.

Cultural and Tribal Resources

The No Project Alternative would result in ground disturbing activities throughout much of the Project site. The Project is not anticipated to result in significant impacts to cultural or historical resources, and the No Project Alternative would result in similar risks related to the unintentionally discovery of such resources by developing much of the Project site with residential and commercial uses. As such, this impact would be equal when compared to the Project.

Geology and Soils

The No Project Alternative would result in development of 876 more units than the Project. The future development allowed under this alternative would be exposed to the same level of risk from geologic hazards as the Project. This alternative is not anticipated to result in a significant change in any risks associated with geology and soils. Therefore, the impact under this alternative would be comparable to the Project.

Greenhouse Gases, Climate Change, and Energy

Under the No Project Alternative, more housing units would be constructed on the Project site. Implementation of the Project would generate GHG emissions during construction and operation. Short-term construction GHG emissions are a one-time release of GHGs and are not expected to significantly contribute to global climate change over the lifetime of a project. As noted previously, construction related impacts would be similar under this alternative when compared to the Project, as the duration of construction would be comparable.

Under the No Project Alternative, because more people would likely reside within the Project site under this alternative, amount of emissions associated with residential activities would increase and the number of vehicle trips generated would also increase by approximately 7,101 daily trips, as shown in Table 5.0-2. As such, the operational, including mobile, greenhouse gas emissions would also increase when compared to the Project. While there would be additional development under this alternative, it is anticipated that energy-saving measures would be similar to the Project and there would not be a significant change in the potential for wasteful, inefficient, or excessive consumption of energy under this alternative.

Hazards and Hazardous Materials

The No Project Alternative is similar to the Project in that both the Project and this alternative would result in development of the Project site with residential, commercial, and park uses. However, this alternative would increase the number of people residing within the Project site. As described in Chapter 3.7, construction activities may result in the use and transport of common hazardous materials, including oils, fuels, paints and solvents. This potential impact would still occur under the No Project Alternative. Additionally, the operational phases of both the Project and the No Project Alternative would not pose a significant hazard to the public or the environment. Future development under the No Project Alternative would be subject to the City's General Plan policies, and other local, state, and federal regulations pertaining to hazardous materials and no significant increase in the potential for release of or exposure to hazardous materials is anticipated under this alternative. This impact would be similar under this alternative when compared to the Project.

Hydrology and Water Quality

The No Project Alternative would result in development of the Project site with up to 2,624 units, a village center, and park uses. This alternative would result in a similar amount of land covered with impervious surfaces compared to the Project. Similar to the Project, stormwater would be directed to on-site detention basin(s) and landscaped areas, and the storm drainage system would be designed to ensure that post-construction runoff volumes do not exceed pre-development conditions. Because the alternative would be required to implement improvements in order to manage and treat stormwater flows from the site, impacts related to water quality would be similar.

As described in Chapter 3.8, when the Project is developed, the on-site impervious area would increase, leading to faster runoff rates. The No Project Alternative would provide a greater amount of impervious surface on-site as compared to the Project, which would also result in

greater impacts related to rainfall infiltration and runoff during storm events as compared to the Project. This is largely due to the fact that this alternative would result in 876 more units than the Project.

The No Project Alternative would provide a similar amount of impervious surface on-site as compared to the Project, which would also result in similar impacts related to rainfall infiltration and runoff during storm events as compared to the Project.

As described in Chapter 3.8, Project implementation has the potential to result in the discharge of pollutants into detention basins, and would change the existing drainage pattern on the site, although these impacts are less than significant as a result of compliance with local, state, and federal regulations. Under the No Project Alternative, these impacts would be similar to the Project. Overall, potential impacts related to hydrology and water quality would not be improved under the No Project Alternative when compared to the Project.

Land Use

The No Project Alternative would also require a change of the Project site's General Plan Land Use designation from Planning Area to Low Density Residential (LDR), Medium Density Residential (MDR), High Density Residential (HDR), Commercial (C), Parks and Open Space (P/OS), and Natural Resources (NR). Under this alternative, the Project site would be developed with uses consistent with the General Plan land use designation and the identified net density associated with the SACOG MTP/SCS for the site. The analysis in Section 3.9 concluded that the Project would not result in any significant land use impacts; the No Project Alternative would also not result in significant land use impacts. Therefore, this alternative would have similar impacts compared to the Project.

Noise and Vibration

As described in Section 3.10, the primary sources of noise associated with implementation of the Project are from increased vehicle trips on study area roadways in the Project vicinity from on-site uses, and increased noise from future operation within the Project site. Under this alternative, noise associated with vehicle trips is expected to increase due to the increase in vehicle trips, while other on-site noise sources would likely be comparable to those generated by the Project. The Project is estimated to generate approximately 11,606 new external vehicle trips on a daily basis. When compared to the Project, this alternative would result in an increase in the number of daily vehicle trips by 7,101. This alternative would generate more daily vehicle trips and peak hour trips associated with the increase in residential units, which would generate increased noise levels on area roadways. Similar to the Project, this alternative would expose future residential uses to noise sources. Overall, due to the increase in anticipated vehicle trips, this impact would be increased under this alternative when compared to the Project.

Population and Housing

This alternative would result in the construction of more housing units over a comparable area as the Project. As discussed in Section 3.11, the Project would be a residential and commercial mixed use development, resulting in the addition of up to 1,748 residential units (up to 1,430

single family units and up to 328 multifamily units) in total. This would allow for a maximum population of approximately 4,410 residents, based on the number of units planned for development.

Under the No Project Alternative, the Project site would be developed with up to 2,642 units, a village center, and park uses. Because this alternative would substantially increase the amount of units, the associated population would also increase. However, this increase is consistent with the General Plan and does not conflict with regional plans for growth. Therefore, impacts related to population and housing would be comparable to the Project.

Public Services and Recreation

This alternative would result in an increase in the number of housing units by 876 units. As described in Section 3.12, implementation of the Project would result in an increase in demand for police and fire protection services, as well as increased demand for schools, parks, and other public facilities. As discussed previously, there would be a larger change in the population generated under this alternative when compared to the Project. However, while this alternative would have an increased demand for public services compared to the Project, this increase is not anticipated to require construction, expansion, or relocation of public service facilities. The 876 additional units under this alternative could, however, require the construction of additional park and/or recreation facilities on- or off-site. Overall, impacts associated with environmental effects associated with the construction, expansion, or relocation of physical facilities associated with the provision of public services and recreation would be slightly greater than the Project.

Transportation and Circulation

As described above, this alternative would result in an increase in total daily vehicle trips when compared to the Project, which would in turn increase the peak hour AM and PM vehicle trips. The Project is estimated to generate up to 11,606 new daily trips, with 841 and 1,102 trips occurring during the AM and PM peak hours, respectively. Under this alternative, the increased development would generate an increase of approximately 7,101 daily trips compared to the Project, as shown in Table 5.0-2. The increase in traffic would result in increased AM and PM peak hour trips under this alternative when compared to the Project. This has the potential to increase impacts to area roadways and intersections. Impacts related to traffic and circulation would be increased under this alternative when compared to the Project.

Utilities

Both the Project and this alternative would be served by the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (Regional San). The Project would have a less-than-significant impact on public wastewater service, including disposal or treatment systems. Development under the No Project Alternative would also result in an increase in solid waste generation within the Project site due to the increase in residential units. Because the No Project Alternative would result in an increased population compared to the Project, water demand would also increase. There is the potential for development under this alternative to exceed the growth anticipated in the infrastructure planning to serve the Project

area and to require additional water and wastewater facilities to serve the Project. Overall, this alternative would have worse impacts to utilities when compared to the Project.

REDUCED PROJECT ALTERNATIVE #1

Aesthetics and Visual Resources

Under Reduced Project Alternative #1, the Project site would be developed with the same amount of non-residential uses as the Project, but with a reduction in the amount of residential development (50 fewer single-family age-restricted units and 100 fewer single-family non-age-restricted units). When compared to the Project, the area of the Project site developed with residential uses would be decreased and there would be an increase in the area preserved as a nature preserve. Developing the entire Project site with 127 fewer residential units would likely result in buildings with equal stories as the Project. The building setbacks and landscaped areas adjacent to existing and future roadways under this alternative would likely be greater than the Project, which may increase the visual and aesthetic appeal of the site compared to the Project. Overall, this alternative would have reduced impacts to aesthetics when compared to the Project, but the conversion of the Project site to a residential community with a commercial center and parks and recreation uses would still result in a significant and unavoidable impact associated with changes in visual character.

Air Quality

As described in Section 3.2, implementation of the Project would generate emissions during both the construction phase and the operational phase. Construction related impacts would be reduced under this alternative when compared to the Project, as the area of ground disturbance would be less, and the duration of construction may be slightly reduced. Under this alternative, mobile source emissions would also slightly decrease. Mobile source (vehicle emissions) are directly related to the number of vehicle trips generated by a project. Under this alternative, the residential uses developed on the Project site would generate approximately 890 fewer daily vehicle trips when compared to the Project, as shown in Table 5.0-2, which would generate lower levels of pollutants from mobile sources. Therefore, this alternative would have reduced impacts related to air quality when compared to the Project.

Biological Resources

As described in Section 3.3, while Project implementation is not anticipated to result in significant impacts to biological resources, construction activities associated with the Project would result in impacts to wetlands and ground disturbing activities that may impact or harm biological resources, including special-status species. Under Reduced Project Alternative #1, the Project site would be developed with the same amount of non-residential uses as the Project, but with a reduction in the amount of residential development of 127 units. This alternative would increase the area of the site for permanent open space uses compared to the Project. Due to the on-site aquatic resources, this alternative would also be designed to minimize and avoid impacts to wetlands and other waters of the U.S. Because this alternative would require fill of wetlands and waters of the U.S. and conversion of much of the Project site to urban uses,

impacts to biological resources would require mitigation similar to the Project to be reduced to less than significant. However, overall, this alternative would have a reduction in impacts to biological resources compared to the Project.

Cultural and Tribal Resources

Reduced Project Alternative #1 would result in ground disturbing activities throughout much of the Project site. The Project is not anticipated to result in significant impacts to cultural or historical resources, and Reduced Project Alternative #1 would result in similar risks related to the unintentional discovery of such resources by developing much of the Project site with residential and commercial uses. As such, this impact would be comparable to the Project.

Geology and Soils

Reduced Project Alternative #1 would result in development of 127 fewer residential units than the Project. The future development allowed under this alternative would be exposed to the same level of risk from geologic hazards as the Project. Therefore, this impact under this alternative would be comparable to the Project.

Greenhouse Gases, Climate Change, and Energy

Under Reduced Project Alternative #1, fewer housing units would be constructed on the Project site. Implementation of the Project would generate GHG emissions during construction and operation. Short-term construction GHG emissions are a one-time release of GHGs and are not expected to significantly contribute to global climate change over the lifetime of a Project. As noted previously, construction related impacts would be reduced under this alternative when compared to the Project, as the extent of the development footprint and duration of construction activities would be reduced slightly.

Under Reduced Project Alternative #1, because fewer people would likely reside within the Project site under this alternative due to the reduction of 127 units, the number of vehicle trips generated would also decrease by approximately 890 daily vehicle trips. Emissions associated with area sources and the mobile greenhouse gas emissions associated with vehicle trips would decrease when compared to the Project. As such, the greenhouse gas emissions impact would be decreased when compared to the Project.

While there would be reduced development under this alternative, it is anticipated that energy-saving measures would be similar to the Project and there would not be a significant change in the potential for wasteful, inefficient, or excessive consumption of energy under this alternative.

Hazards and Hazardous Materials

Reduced Project Alternative #1 is similar to the Project in that both the Project and this alternative would result in development of the Project site with residential, commercial, and park uses. As described in Chapter 3.7, construction activities may result in the use and transport of common hazardous materials, including oils, fuels, paints and solvents. This potential impact would still occur under Reduced Project Alternative #1. Additionally, the operational phases of both the Project and Reduced Project Alternative #1 would not pose a

significant hazard to the public or the environment. Future development under Reduced Project Alternative #1 would be subject to the City's General Plan policies, and other local, state, and federal regulations pertaining to hazardous materials. This impact would be similar under this alternative when compared to the Project.

Hydrology and Water Quality

Reduced Project Alternative #1 would reduce development by 127 single family units compared to the Project and result in an increase in permanent open space. While this alternative would result in a reduced amount of land covered with impervious surfaces compared to the Project, stormwater would be directed to on-site detention basin(s) and landscaped areas, and the storm drainage system would be designed to ensure that post-construction runoff volumes do not exceed pre-development conditions similar to the Project. Because the alternative would be required to implement improvements in order to manage and treat stormwater flows from the site, impacts related to water quality would be similar.

As described in Chapter 3.8, Project implementation has the potential to result in the discharge of pollutants into detention basins, and would change the existing drainage pattern on the site, although these impacts are less than significant as a result of compliance with local, state, and federal regulations. Under Reduced Project Alternative #1, these impacts would be similar to the Project. Overall, potential impacts related to hydrology and water quality would not be significantly improved under Reduced Project Alternative #1 when compared to the Project.

Land Use

Reduced Project Alternative #1 would also require a change of the Project site's General Plan Land Use designation from Planning Area to LDR, MDR, HDR, C, P/OS, and NR designations. Under this alternative, the Project site would be developed with similar uses as the Project. The analysis in Section 3.9 concluded that the Project would not result in any significant land use impacts. Similarly, this alternative could be designed to be consistent with the General Plan. The decrease in units and decreased development footprint associated with this alternative would not conflict with the adopted MTP/SCS as this alternative would result in comparable residential net densities on the Project site when compared to the Developing Community assumptions for the Project site. Therefore, this alternative would have similar impacts compared to the Project.

Noise and Vibration

As described in Section 3.10, the primary sources of noise associated with implementation of the Project are from increased vehicle trips on study area roadways in the Project vicinity from on-site uses, and increased noise from future operation within the Project site. The Project is estimated to generate approximately 11,606 new external vehicle trips on a daily basis. Under this alternative, noise associated with vehicle trips is expected to decrease by approximately 890 daily trips due to the decrease in residential units, while other on-site noise sources would likely be comparable to those generated by the Project. This alternative would generate fewer daily vehicle trips and peak hour trips, which would generate decreased noise levels on area roadways. Similar to the Project, this alternative would expose future residential uses to noise

sources. Overall, due to the decrease in anticipated vehicle trips, this impact would be decreased under this alternative when compared to the Project.

Population and Housing

This alternative would result in the construction of fewer housing units over a smaller area than the Project. As discussed in Section 3.11, the Project would be a residential and commercial mixed use development, resulting in the addition of up to 1,725 residential units (up to 1,472 single family units and up to 253 multifamily units) in total. This would allow for a maximum population of approximately 4,319 residents, based on the number of units planned for development.

Under Reduced Project Alternative #1, the Project site would be developed with up to 1,598 units. While this alternative would add fewer residents as compared with the Project, impacts related to population and housing would be comparable to the Project as neither this alternative nor the Project would conflict with applicable population forecasts.

Public Services and Recreation

This alternative would result in a decrease in the number of housing units by 127 units. As described in Section 3.12, implementation of the Project would result in an increase in demand for police and fire protection services, as well as increased demand for schools, parks, and other public facilities. As discussed previously, there would be a reduction in the population generated under this alternative when compared to the Project. As such, this alternative would have a decreased demand for public services compared to the Project and a decrease in the amount of park area required to serve the Project. Similar to the Project, this alternative would not result in need for construction, relocation, or expansion of facilities for public services and recreation, other than the park and recreation uses proposed as part of the alternative. Because this alternative would decrease demand for public services and would require less parkland than the Project, physical environmental impacts related to public services and recreation would be slightly less than the Project.

Transportation and Circulation

As described above, this alternative would result in a decrease in total daily vehicle trips when compared to the Project, which would in turn decrease the peak hour AM and PM vehicle trips. The Project is estimated to generate up to 11,606 new daily trips, with 841 and 1,102 trips occurring during the AM and PM peak hours, respectively. Under this alternative, the decrease in residential units would result in a reduction of 890 daily trips. The trip generation for this alternative was calculated using the same trip generation rates as the Project that were provided by Kimley-Horn (June 12, 2019, as shown in Table 5.0-2). The related decrease in AM and PM peak hour trips under this alternative would generate decreased traffic levels on area roadways when compared to the Project. This has the potential to decrease impacts to area roadways and intersections, in particular, the impact at Intersection #21, Sunrise Boulevard/White Rock Road is anticipated to be reduced to less than significant resulting from a decrease in delay compared to the Project. The remaining potentially significant impacts would not be avoided under this alternative, but the level of delay would be reduced compared to the

Project. Overall, impacts related to traffic and circulation associated with roadway operations would be decreased under this alternative when compared to the Project.

Utilities

Both the Project and this alternative would be served by the SASD and Regional San. The Project would have a less-than-significant impact on public wastewater service, including disposal or treatment systems. It is noted, however, that the decrease in residential units under this alternative would decrease the wastewater treatment demand compared to the Project. Development under Reduced Project Alternative #1 would also result in a decrease in solid waste generation within the Project site due to the decrease in residential units. Because Reduced Project Alternative #1 would result in a decreased amount of development compared to the Project, water demand would also decrease. Overall, this alternative would have less impacts to utilities when compared to the Project.

REDUCED PROJECT ALTERNATIVE #2

Aesthetics and Visual Resources

Under Reduced Project Alternative #2, the Project site would be developed with the same amount of non-residential uses as the Project, but with a reduction in the amount of residential development (non-age-restricted only). When compared to the Project, the area of the Project developed with residential uses would be decreased and there would be an increase in the area preserved as a nature preserve. Developing the entire Project site with 247 fewer residential units would likely result in buildings with a comparable number of stories as the Project. The building setbacks and landscaped areas adjacent to existing and future roadways under this alternative would likely be greater to the Project, which may increase the visual and aesthetic appeal of the site compared to the Project. Overall, this alternative would have reduced impacts to aesthetics when compared to the Project, but the conversion of the Project site to a residential community with a commercial center and parks and recreation uses would still result in a significant and unavoidable impact associated with changes in visual character.

Air Quality

As described in Section 3.2, implementation of the Project would generate emissions during both the construction phase and the operational phase Construction related impacts would be reduced under this alternative when compared to the Project, as the area of ground disturbance would be less, and the duration of construction may be slightly reduced. Under this alternative, mobile source emissions would also slightly decrease. Mobile source (vehicle emissions) are directly related to the number of vehicle trips generated by a project. Under this alternative, the residential uses developed on the Project site would generate approximately 2,228 fewer daily vehicle trips when compared to the Project, as shown in Table 5.0-2, which would generate lower levels of pollutants from mobile sources. Therefore, this alternative would have reduced impacts related to air quality when compared to the Project.

Biological Resources

As described in Section 3.3, while Project implementation is not anticipated to result in significant impacts to biological resources, construction activities associated with the Project would result in impacts to wetlands and ground disturbing activities that may impact or harm biological resources, including special-status species. Under Reduced Project Alternative #2, the Project site would be developed with the same amount of non-residential uses as the Project, but with a reduction in the amount of residential development (247 fewer units). This alternative would increase the area of the site for permanent open space uses compared to the Project. Due to the on-site aquatic resources, this alternative would also be designed to minimize and avoid impacts to wetlands and other waters of the U.S. Because this alternative would require fill of wetlands and waters of the U.S. and conversion of much of the Project site to urban uses, impacts to biological resources would require mitigation similar to the Project to be reduced to less than significant. However, overall, this alternative would have a reduction in impacts to biological resources compared to the Project.

Cultural and Tribal Resources

Reduced Project Alternative #2 would result in ground disturbing activities throughout much of the Project site. The Project is not anticipated to result in significant impacts to cultural or historical resources, and Reduced Project Alternative #2 would result in similar risks related to the unintentional discovery of such resources by developing much of the Project site with residential and commercial uses. As such, this impact would be comparable to the Project.

Geology and Soils

Reduced Project Alternative #2 would result in development of 247 fewer residential units than the Project. The future development allowed under this alternative would be exposed to the same level of risk from geologic hazards as the Project. Therefore, this impact under this alternative would be comparable to the Project.

Greenhouse Gases, Climate Change, and Energy

Under Reduced Project Alternative #2, fewer housing units would be constructed on the Project site. Implementation of the Project would generate GHG emissions during construction and operation. Short-term construction GHG emissions are a one-time release of GHGs and are not expected to significantly contribute to global climate change over the lifetime of a project. As noted previously, construction related impacts would be reduced under this alternative when compared to the Project, as the extent of the development footprint and duration of construction activities would be reduced slightly.

Under Reduced Project Alternative #2, there would be less residential development, resulting in a reduced population and a reduction in the number of vehicle trips generated. As such, the mobile greenhouse gas emissions would decrease when compared to the Project and the greenhouse gas emissions impact would be decreased when compared to the Project.

While there would be reduced development under this alternative, it is anticipated that energy-saving measures would be similar to the Project and there would not be a significant change in the potential for wasteful, inefficient, or excessive consumption of energy under this alternative.

Hazards and Hazardous Materials

Reduced Project Alternative #2 is similar to the Project in that both the Project and this alternative would result in development of the Project site with residential, commercial, and park uses. As described in Chapter 3.7, construction activities may result in the use and transport of common hazardous materials, including oils, fuels, paints and solvents. This potential impact would still occur under Reduced Project Alternative #2. Additionally, the operational phases of both the Project and Reduced Project Alternative #2 would not pose a significant hazard to the public or the environment. Future development under Reduced Project Alternative #2 would be subject to the City's General Plan policies, and other local, state, and federal regulations pertaining to hazardous materials. This impact would be similar under this alternative when compared to the Project.

Hydrology and Water Quality

Reduced Project Alternative #2 would reduce development by 260 single family units compared to the Project and result in an increase in permanent open space. While this alternative would result in a reduced amount of land covered with impervious surfaces compared to the Project, stormwater would be directed to on-site detention basin(s) and landscaped areas, and the storm drainage system would be designed to ensure that post-construction runoff volumes do not exceed pre-development conditions similar to the Project. Because the alternative would be required to implement improvements in order to manage and treat stormwater flows from the site, impacts related to water quality would be similar.

As described in Chapter 3.8, Project implementation has the potential to result in the discharge of pollutants into detention basins, and would change the existing drainage pattern on the site, although these impacts are less than significant as a result of compliance with local, state, and federal regulations. Under Reduced Project Alternative #2, these impacts would be similar to the Project. Overall, potential impacts related to hydrology and water quality would not be significantly improved under Reduced Project Alternative #2 when compared to the Project.

Land Use

Reduced Project Alternative #2 would also require a change of the Project site's General Plan Land Use designation from Planning Area to LDR, MDR, HDR, C, P/OS, and NR designations. Under this alternative, the Project site would be developed with similar uses as the Project. The analysis in Section 3.9 concluded that the Project would not result in any significant land use impacts. The decrease in units and decreased development footprint associated with this alternative would not conflict with the adopted MTP/SCS and would result in comparable residential net densities on the Project site when compared to the Developing Community assumptions for the Project site. Reduced Project Alternative #2 would also not result in

significant land use impacts. Therefore, this alternative would have similar impacts to the Project.

Noise and Vibration

As described in Section 3.10, the primary sources of noise associated with implementation of the Project are from increased vehicle trips on study area roadways in the Project vicinity from on-site uses, and increased noise from future operation within the Project site. The Project is estimated to generate approximately 11,606 new external vehicle trips on a daily basis. Under this alternative, noise associated with vehicle trips is expected to decrease due to approximately 2,228 fewer daily vehicle trips due to the decrease in residential units, while other on-site noise sources would likely be comparable to those generated by the Project. This alternative would generate fewer daily vehicle trips and peak hour trips, which would generate decreased noise levels on area roadways. Similar to the Project, this alternative would expose future residential uses to noise sources. Overall, due to the decrease in anticipated vehicle trips, this impact would be decreased under this alternative when compared to the Project.

Population and Housing

This alternative would result in the construction of fewer housing units over a comparable area as the Project. As discussed in Section 3.11, the Project would be a residential and commercial mixed use development, resulting in the addition of up to 1,725 residential units in total. This would allow for a maximum population of approximately 4,4319 residents, based on the number of units planned for development.

Under Reduced Project Alternative #2, the Project site would be developed with 247 fewer single-family units than the Project and would have similar commercial uses, recreation, park uses, and a preserve. While this alternative would add fewer residents as compared with the Project, impacts related to population and housing would be comparable to the Project as neither this alternative nor the Project would conflict with applicable population forecasts.

Public Services and Recreation

This alternative would result in a decrease in the number of housing units by 247 units compared to the Project. As described in Section 3.12, implementation of the Project would result in an increase in demand for police and fire protection services, as well as increased demand for schools, parks, and other public facilities. As discussed previously, there would be a reduction in the population generated under this alternative when compared to the Project. As such, this alternative would have a decreased demand for public services compared to the Project and, similar to the Project, not result in need for construction, relocation, or expansion of facilities for public services and recreation, other than the park and recreation uses proposed as part of the alternative. Therefore, physical environmental impacts related to public services and recreation would be comparable to the Project.

Transportation and Circulation

As described above, this alternative would result in a decrease in total daily vehicle trips when compared to the Project, which would in turn decrease the peak hour AM and PM vehicle trips.

The Project is estimated to generate up to 11,606 new daily trips, with 841 and 1,102 trips occurring during the AM and PM peak hours, respectively. Under this alternative, the decrease in residential units would result in a reduction of 2,228 daily trips, as shown in Table 5.0-2. The trip generation for this alternative was calculated using the same trip generation rates as the Project that were provided by Kimley-Horn (June 12, 2019). The related decrease in AM and PM peak hour trips under this alternative would generate decreased traffic levels on area roadways when compared to the Project. This has the potential to decrease impacts to area roadways and intersections, in particular, the impact at Intersection #21, Sunrise Boulevard/White Rock Road is anticipated to be reduced to less than significant resulting from a decrease in delay compared to the Project. The remaining potentially significant impacts would not be avoided under this alternative, but the level of delay would be reduced compared to the Project. Overall, impacts related to traffic and circulation associated with roadway operations would be decreased under this alternative when compared to the Project.

Utilities

Both the Project and this alternative would be served by the SASD and Regional San. The Project would have a less-than-significant impact on public wastewater service, including disposal or treatment systems. It is noted, however, that the decrease in residential units under this alternative would decrease the wastewater treatment demand compared to the Project. Development under Reduced Project Alternative #2 would also result in a decrease in solid waste generation within the Project site due to the decrease in residential units. Because Reduced Project Alternative #2 would result in a decreased amount of development compared to the Project, water demand would also decrease. Overall, this alternative would have less impacts to utilities when compared to the Project.

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires that an environmentally superior alternative be identified among the alternatives that are analyzed in the EIR. If the No Project Alternative is the environmentally superior alternative, an EIR must also identify an environmentally superior alternative among the other alternatives (CEQA Guidelines Section 15126.6(e)(2)). The environmentally superior alternative is that alternative with the least adverse environmental impacts when compared to the Project.

A comparative analysis of the Project and each of the Project alternatives is provided in Table 5.0-3 below. The table includes a numerical scoring system, which assigns a score of "2," "3," or "4" to the Project and each of the alternatives with respect to how each alternative compares to the Project in terms of the severity of the environmental topics addressed in this EIR. A score of "2" indicates that the alternative would have a better (or lessened) impact when compared to the Project. A score of "3" indicates that the alternative would have the same (or equal) level of impact when compared to the Project. A score of "4" indicates that the alternative would have a worse (or greater) impact when compared to the Project. The Project alternative with the lowest total score is considered the environmentally superior alternative.

TABLE 5.0-3: COMPARISON OF ALTERNATIVE PROJECT IMPACTS TO THE PROJECT

ENVIRONMENTAL ISSUE	*PROJECT*	*NO PROJECT ALTERNATIVE*	*REDUCED PROJECT ALTERNATIVE #1*	*REDUCED PROJECT ALTERNATIVE #2*
Aesthetics and Visual Resources	3 – Same	4 - Greater	2 – Less	2 – Less
Air Quality	3 – Same	4 – Greater	2 – Less	2 – Less
Biological Resources	3 – Same	4 - Greater	2 – Less	2 - Less
Cultural and Tribal Resources	3 – Same	3 – Same	3 – Same	3 – Same
Geology and Soils	3 – Same	3 - Same	3 - Same	3 - Same
Greenhouse Gas, Climate Change, and Energy	3 – Same	4 – Greater	4 – Greater	4 - Worse
Hazards and Hazardous Materials	3 – Same	3 – Same	3 – Same	3 – Same
Hydrology and Water Quality	3 – Same	3 – Same	3 – Same	3 – Same
Land Use	3 – Same	3 – Same	3 – Same	3 – Same
Noise and Vibration	3 – Same	4 – Greater	2 – Less	2 – Less
Population and Housing	3 – Same	3 - Same	2 – Less	2 – Less
Public Services and Recreation	3 – Same	4 - Greater	2 – Less	3 - Same
Transportation and Circulation	3 – Same	4 – Greater	2 – Less	2 – Less
Utilities	3 – Same	3 - Same	2 – Less	2 – Less
Summary	**42**	**49**	**35**	**36**

As shown in Table 5.0-3, the No Project Alternative would result in 49 points, Reduced Project Alternative #1 would result in 35 points, and Reduced Project Alternative #2 would result in 36 points. However, because Reduced Project Alternative #2 would reduce the extent of development, including the acreage and number of residential units and associated population, more than Reduced Project Alternative #1, impacts of Reduced Project Alternative #2 associated with air quality, noise, and traffic would be reduced more than Reduced Project Alternative #1. Therefore, Reduced Project Alternative #2 is the next environmentally superior alternative to the Project. It is noted that the superior alternative would depend on the City's local priorities (i.e., traffic impacts to the regional roadway system, maintenance of public services and utilities services, etc.), as well as the ability to meet the Project's objectives. It is noted, however, that this alternative would not eliminate the significant and unavoidable impact related to aesthetics that would occur under the Project. Each alternative's ability to satisfy the Project objectives is discussed in the following section.

5.4 COMPARATIVE EVALUATION OF THE PROJECT AND ALTERNATIVES TO SATISFY PROJECT OBJECTIVES

This section examines how each of the alternatives selected for more detailed analysis meets the Project objectives.

1. *Create a high-quality development that implements the vision of the General Plan, which designates the Project site for development with a local town center, a mix of residential densities, and a natural resources preserve.*

The No Project Alternative would satisfy this Project objective because under this alternative, the project site would be developed consistent with the General Plan land use designation and the SACOG MTP/SCS vision for the site. Under Reduced Project Alternative #1, the Project site would be developed with the same amount of non-residential uses as the Project, but with a reduction in the amount of residential development (age-restricted and non-age-restricted). Under Reduced Project Alternative #2, the Project site would be developed with the same amount of non-residential uses as the Project, but with a reduction in the amount of residential development (non-age-restricted only). Therefore, Reduced Project Alternatives #1 and #2 would achieve this objective.

2. *Respect the Project site's existing natural features through preservation of 199.5 acres of wetlands, vernal pools, and open space.*

The No Project Alternative would satisfy this Project objective because under this alternative, a wetland preserve area would be provided; however, the preserve would be smaller than that associated with the Project. Similarly, Reduced Project Alternatives #1 and #2 would also provide preserve areas comparable to or larger than the Project. Therefore, Reduced Project Alternatives #1 and #2 would achieve this objective.

3. *Provide a residential development that would assist the City in meeting its housing needs, including a range of housing types to serve the senior population.*

The No Project Alternative would satisfy this Project objective because this alternative would include a range of housing types, although the ultimate types (including single family versus multifamily and age-restricted versus non-age-restricted) of units is unknown at this time but has been estimated for the purpose of this analysis. Reduced Project Alternative #1 also meets this objective because the alternative would provide a range of housing types for various age groups. However, because this alternative would reduce the amount of total housing by 127 units, this objective would be met to a lesser extent than the Project. Similarly, Reduced Project Alternative #2 meets this objective because the alternative would provide a range of housing types for various age groups. However, because this alternative would reduce the amount of total housing by 247 units, this objective would be met to a lesser extent than the Project.

4. *Provide a residential development that would assist the City in meeting its affordability goals providing housing at many price points and attract residents from different areas.*

Similar to objective number three above, the No Project Alternative would satisfy this Project objective because this alternative would include ample residential housing at many price points, although the ultimate types (including single family versus multifamily and age-restricted versus non-age-restricted) of units is unknown at this time. Reduced Project Alternative #1 also meets

this objective because the alternative would provide a range of housing types for various income groups. However, because this alternative would reduce the amount of total housing by 127 units, this objective would be met to a lesser extent than the Project. Similarly, Reduced Project Alternative #2 meets this objective because the alternative would provide a range of housing types for various income groups. However, because this alternative would reduce the amount of total housing by 247 units, this objective would be met to a lesser extent than the Project.

5. *Create of a unique age-restricted community that provides a mix of housing types and amenities, including a club house and recreation facility.*

Depending on the ultimate housing types, the No Project Alternative would satisfy this Project objective because under this alternative, a mix of housing types and amenities would be provided. However, uncertainty regarding the level of amenities and number of age-restricted units could prevent the No Project Alternative from fully satisfying this objective. Reduced Project Alternative #1 would meet this objective to a lesser extent than the Project because the alternative would reduce the number of age-restricted units by 82. Reduced Project Alternative #2 would meet this objective by a lesser extent as well because the alternative would provide 42 fewer age-restricted units than the Project.

6. *Accommodate neighborhood-serving commercial uses as part of the town center.*

All three alternatives would achieve this object because all of the alternatives would include a town center area with neighborhood-serving commercial uses.

7. *Implement the City's Bicycle and Pedestrian Master Plans through providing an on-site bicycle and pedestrian network that is accessible by the general public and provides opportunities for connectivity with bicycle and pedestrian facilities on adjacent properties.*

The No Project Alternative would satisfy this Project objective because under this alternative, the site would be developed consistent with the General Plan land use designation for the site, and the General Plan incorporates the provisions of the City's Bicycle and Pedestrian Master Plans. Both Reduced Project Alternative #1 and Reduced Project Alternative #2 would also achieve this objective by providing ample pedestrian and bicycle facilities throughout the Project site, which would connect to adjacent properties.

This page is intentionally left blank.

REPORT PREPARERS

City of Rancho Cordova

Darcy Goulart ..... Planning Manager

June Cowles ..... Principal Planner

De Novo Planning Group

Beth Thompson ..... Principal Planner/Project Manager

Steve McMurtry ..... Principal Planner/Biologist

Elise Carroll ..... Senior Planner

William Crenshaw ..... Senior Planner

Joshua Smith ..... Associate Planner

Saxelby Acoustics – Noise Consultant

Luke Saxelby ..... Principal

6.0 REPORT PREPARERS

This page left intentionally blank.

REFERENCES

Bay Area Air Quality Management District. 2017. Spare the Air: Cool the Climate. April. San Francisco, CA. Available: http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en. Accessed: July 12, 2019.

C Donald Ahrens. 2006. Meteorology Today: An Introduction to Weather, Climate, & the Environment.

California Air Pollution Control Officers Association (CAPCOA). 2017. Appendix A, Calculation Details for CalEEMod. October 2017.

California Air Resources Board. 2005. Air Quality and Land Use Handbook: A Community Health Perspective.

California Air Resources Board. 2014. 2020 Statewide Greenhouse Gas Emissions and the 2020 Target (base years for forecasting: 2009-2011 emissions). Available at: <https://www.arb.ca.gov/cc/inventory/data/misc/2020_forecast_base0911_2015-01-22.pdf>

California Air Resources Board. 2014. Background Material: Almanac of Emissions and Air Quality 2013 Edition - Chapter 4 Regional Trends and Forecasts. Page last reviewed on February 7, 2014. Available: <https://ww3.arb.ca.gov/aqd/almanac/almanac13/chap413.htm>.

California Air Resources Board. 2015. ARB Databases: Aerometric Data Analysis and Management System (ADAM). Available at: <http://www.arb.ca.gov/adam/trends/trends1.php>.

California Air Resources Board. 2015. CalEEMod Model v.2013.2.2. Available at: <http://www.caleemod.com/>.

California Air Resources Board. 2015. EMFAC2014 Web Database. Available at: <https://www.arb.ca.gov/emfac/2014/>.

California Air Resources Board. 2015. State and National Attainment Status for Criteria Pollutants. Available at: <http://www.arb.ca.gov/desig/adm/adm.htm>.

California Air Resources Board. 2015a. 2030 Target Scoping Plan Workshop Slides. (October 1, 2015). Available at: <http://www.arb.ca.gov/cc/scopingplan/meetings/10_1_15slides/2015slides.pdf>.

California Air Resources Board. 2016. California Climate Strategy. January 29, 2016. Available at: <http://docketpublic.energy.ca.gov/PublicDocuments/15-RETI-02/TN210091_20160129T154626_California_Climate_Strategy_CARB_for_RETI_20_Plenary_Meeting_on.pdf>.

California Air Resources Board. 2016a. Ambient Air Quality Standards. Available at: <https://www.arb.ca.gov/research/aaqs/aaqs2.pdf >.

California Air Resources Board. 2016b. ARB Databases: Aerometric Data Analysis and Management System (ADAM). Available at: <https://arb.ca.gov/adam>.

California Air Resources Board. 2017. California's 2017 Climate Change Scoping Plan. Available at: <https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf>.

California Air Resources Board. 2018. Area Designations Maps/State and National. This page last reviewed December 28, 2018. Available at: <https://www.arb.ca.gov/desig/adm/adm.htm>.

California Air Resources Board. 2019a. 2016 SIP Emission Projection Data. Statewide. Available at: <>https://www.arb.ca.gov/app/emsinv/2017/emssumcat_query.php?F_YR=2012&F_DIV=-4&F_SEASON=A&SP=SIP105ADJ&F_AREA=CA#5.

California Air Resources Board. 2019b. AQMIS 2. Air Quality Data (PST) Query Tool. Accessed on July 11, 2019. Available: <https://www.arb.ca.gov/aqmis2/aqdselect.php>.

California Air Resources Board. 2019bc. ARB Databases: Aerometric Data Analysis and Management System (ADAM). Accessed July 11, 2019. Available at: <https://www.arb.ca.gov/adam/trends/trends1.php>.

California Air Resources Board. 2019d. California Ambient Air Quality Standards (CAAQS). Available at: <http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm>.

California Air Resources Board. 2019e. Carbon Monoxide and Health. Available: <https://ww3.arb.ca.gov/research/aaqs/caaqs/co/co.htm>.

California Air Resources Board. 2019f. What is Carbon Monoxide? Accessed on: July 11, 2019. Available: https://ww2.arb.ca.gov/resources/carbon-monoxide-and-health.

California Department of Conservation. Fault Activity Map of California. Available at: <http://maps.conservation.ca.gov/cgs/fam/>.

California Department of Education. School Accountability Report Card Reported Using Data from the 2016-2017 School Year For: Elk Grove Charter School. Published During 2017-2018.

California Department of Education. School Accountability Report Card Reported Using Data from the 2016-2017 School Year For: Katherine L. Albiani Middle School. Published During 2017-2018.

California Department of Education. School Accountability Report Card Reported Using Data from the 2016-2017 School Year For: Las Flores High School. Published During 2017-2018.

California Department of Education. School Accountability Report Card Reported Using Data from the 2016-2017 School Year For: Pleasant Grove High School. Published During 2017-2018.

California Department of Education. School Accountability Report Card Reported Using Data from the 2016-2017 School Year For: T.R. Smedberg Middle School. Published During 2017-2018.

California Department of Education. School Accountability Report Card Reported Using Data from the 2016-2017 School Year For: Sheldon High School. Published During 2017-2018.

California Department of Education. School Accountability Report Card Reported Using Data from the 2016-2017 School Year For: Sunrise Elementary. Published During 2017-2018.

California Department of Finance. 2017. Population and Housing Estimates (E-5 Reports). Available at: <http://www.dof.ca.gov/research/demographic/reports/>.

California Department of Finance, Demographics Research Unit. 2018. E-5 City/County Population and Housing Estimates, 1/1/2018. Published May 2018.

California Department of Fish and Wildlife. 2016. California Natural Diversity Database (CNDDB). Accessed in August 2018.

California Department of Fish and Game. "Special Plants List." Natural Diversity Database.

California Department of Fish and Game. "Special Animals List." Natural Diversity Database.

California Department of Fish and Game. "Special Vascular Plants, Bryophytes, and Lichens List." Natural Diversity Database.

California Department of Forestry & Fire Protection. Very High Fire Hazard Severity Zones in LRA – Sacramento County. July 30, 2008.

California Department of Forestry & Fire Protection. Fire Hazard Severity Zones in SRA – Sacramento County. Adopted by CAL FIRE on November 7, 2007.

California Department of Toxic Substances Control. 2016. Envirostar database search (DTSC, 2016). Available online at: Envirostar.dtsc.ca.gov. Accessed on August 2018.

California Department of Transportation. 2002. Guide for the Preparation of Traffic Impact Studies. December 2002.

California Department of Transportation. 2002. Transportation Related Earthborne Vibrations. TAV-02-01-R9601. February 20, 2002.

California Department of Transportation. 2009. Technical Noise Supplement, Traffic Analysis Protocol. November 2009.

California Department of Transportation. 2012. California Manual on Uniform Traffic Control Devices for Streets and Highways.

California Department of Transportation. 2013. Officially Designated State Scenic Highways. Available at: <http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm>.

California Department of Water Resources. 2003. Bulletin 118, California's Groundwater, 2003 Update.

California Department of Water Resources. 2012. State of California Watershed Hierarchy Naming Convention.

California Energy Commission. 2006. Refining Estimates of Water-Related Energy Use in California.

California Energy Commission. 2012. Energy Almanac. Retrieved August 2018. Available at: <http://energyalmanac.ca.gov/overview/index.html>.

California Energy Commission. 2012a. Building Energy Efficiency Standards Frequently Asked Questions. May 2012.

California Energy Commission. 2012b. Energy Almanac. Retrieved August 2018. Available at: <http://energyalmanac.ca.gov/overview/index.html>.

California Energy Commission. 2014. California Greenhouse Gas Emission Inventory. Available at: <http://www.arb.ca.gov/cc/inventory/inventory_current.htm>.

California Energy Commission. 2015. 2016 Building Energy Efficiency Standards. Adoption Hearing. June 10, 2015. Available at: <http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2015-06-10_hearing/2015-06-10_Adoption_Hearing_Presentation.pdf>.

California Energy Commission. 2016. California Energy Consumption Database. Available at: <http://ecdms.energy.ca.gov/>.

California Energy Commission. 2016. Electricity Consumption by County. Available at: <http://ecdms.energy.ca.gov/elecbycounty.aspx>.

California Energy Commission. 2016a. 2016 Building Energy Efficiency Standards. Adoption Hearing. June 10, 2015.

California Energy Commission. 2016b. California Greenhouse Gas Emission Inventory – 2016 Edition. Available at: <https://www.arb.ca.gov/cc/inventory/data/data.htm>.

California Energy Commission. 2018a. California Greenhouse Gas Emission Inventory – 2018 Edition. Available at: <https://www.arb.ca.gov/cc/inventory/data/data.htm>.

California Energy Commission. 2018b. Tracking Overview. Renewable Energy – Overview. Available at: <http://www.energy.ca.gov/renewables/tracking_progress/documents/renewable.pdf>.

California Energy Commission. 2019. Energy Almanac. Retrieved August 2012, from <http://energyalmanac.ca.gov/overview/index.html>.

California Environmental Protection Agency. 2010. Climate Action Team Report to Governor Schwarzenegger and the Legislature. December 2010. Available at: <http://www.climatechange.ca.gov/climate_action_team/reports/>.

Central Intelligence Agency. 2009. The World Factbook 2009. Available at: <https://www.cia.gov/library/publications/download/download-2009/>.

California Regional Water Quality Control Board, Central Valley Region. Order R5-2016-0020, NPDES No. CA0077682: Waste Discharge Requirements for the Sacramento Regional County Sanitation District Sacramento Reginal Wastewater Treatment Plan, Sacramento County.

CalRecycle. Estimated Solid Waste Generation Rates. Available at: <https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates>.

CalRecycle. Jurisdiction Diversion/Disposal Rate Summary (2007 - Current). Accessed June August 2018. Available at: <https://www2.calrecycle.ca.gov/LGCentral/AnnualReporting/ReviewReports>.

CalRecycle. Solid Waste Information System (SWIS). Available at: <http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx> and <http://www.calrecycle.ca.gov/LGCentral/Reports/DRS/Destination/JurDspFa.aspx>.

CAPCOA. 2017. CalEEMod (v.2016.3.2). Modelled in April 2019.

City of Citrus Heights, City of Elk Grove, City of Folsom, City of Galt, City of Rancho Cordova, City of Sacramento, and County of Sacramento. Sacramento Region Stormwater Quality Design Manual. July 2018.

City of Rancho Cordova. Draft Environmental Impact Report/Environmental Impact Statement – SunCreek Specific Plan Project. October 2012.

City of Rancho Cordova. Final Environmental Impact Report – Sunrise Douglas Community Plan/Sun Ridge Specific Plan Long-Term Water Supply Plan. October 2011.

City of Rancho Cordova. Rancho Cordova General Plan. Adopted June 26, 2006.

City of Rancho Cordova. Rancho Cordova General Plan Draft Environmental Impact Report Vol. 1. March 2006.

Cordova Recreation and Park District. 2014. Cordova Recreation and Park District Park Impact Fee Nexus Study. April 8, 2014.

Cordova Recreation and Park District. 2014. Master Plan for New Development in Incorporated Areas 2014.

CTA Engineering & Surveying. The Ranch Level 1 Sewer Study. September 2018.

CTA Engineering & Surveying. The Ranch Level 2 Sewer Study. July 2019.

Elk Grove Unified School District. Development Fee Justification Study/School Facilities Needs Analysis. March 2018.

Elk Grove Unified School District. Facilities Master Plan 3015-2025 Master Plan. February 2016.

Elk Grove Unified School District. Local Control Accountability Plan 2017-2020. Approved by the Board of Education on June 27, 2017.

ENVIRON. 2013. Appendix A: Calculation Details for CalEEMod. Available at: <http://www.aqmd.gov/docs/default-source/caleemod/caleemod-appendixa.pdf?sfvrsn=2>.

Environmental Protection Agency. 2013. Toxics Release Inventory (TRI) Program. Accessed August 2018. Available at: <https://www.epa.gov/toxics-release-inventory-tri-program/2013-tri-national-analysis-introduction>.

Federal Railroad Administration. Federal Railroad Administration website. Accessed September 2018. Available at: <http://safetydata.fra.dot.gov/officeofsafety/publicsite/crossing/xingqryloc.aspx>.

Federal Transit Administration. 2006. Transit Noise and Vibration Impact Assessment Guidelines. May 2006.

Foothill Associates. Aquatic Resources Delineation Report, The Ranch 530-Acre Study Area, City of Rancho Cordova, California. October 13, 2017.

Foothill Associates. Biological Resources Assessment, The Ranch 530-Acre Study Area, City of Rancho Cordova, California. October 13, 2017.

Foothill Associates. Determination of Eligibility and Effect for the Jaeger 530 Project Area, Sacramento County, California. January 2005.

Foothill Associates. RE: Special-Status Plant Survey for The Ranch (Jaeger 530) Project located in the City of Rancho Cordova, Sacramento County, California. October 20, 2017.

Institute of Transportation Engineers. 2012. Trip Generation Manual, 9th Edition.

Intergovernmental Panel on Climate Change. 2013. Climate Change 2013: The Physical Science Basis. Available at: <http://www.climatechange2013.org/images/report/WG1AR5_SPM_FINAL.pdf>.

Kimley-Horn. Memorandum RE: Jaeger Ranch Supplemental Traffic Analyses, Draft Traffic Impact Analysis Services. December 3, 2018.

Kimley-Horn. Memorandum RE: Jaeger Ranch Supplemental Traffic Analyses, Draft Trip Generation Memorandum. June 12, 2019.

Kimley-Horn. Memorandum RE: Jaeger Ranch Traffic Impact Study, Draft Other Considerations. August 28, 2018.

Kimley-Horn. Memorandum RE: Jaeger Ranch Traffic Impact Study, Draft VMT Analysis Results. April 16, 2018.

Kimley-Horn. Traffic Impact Analysis, Jaeger Ranch, City of Rancho Cordova, California. August 28, 2018.

International Energy Agency. 2018. FAQs: Oil. Available at: <https://www.iea.org/about/faqs/oil/>.

National Aeronautics and Space Administration. Jet Propulsion Laboratory. 2015. NASA: Background Ozone is a Major Issue in U.S. West. Available: <https://www.jpl.nasa.gov/news/news.php?feature=4723>.

National Resources Defense Council. 2014. NRDC Fact Sheet: California Snowpack and the Drought. April 2014. Available at: <https://www.nrdc.org/sites/default/files/ca-snowpack-and-drought-FS.pdf>.

Pacific Gas & Electric. Electric & Gas Service Requirements 2017-2018. 2017-2018 Edition.

Peak & Associates. Cultural Resources section for The Ranch Project. June 2018.

Personal Communication with Jeff Schelldorf, Lieutenant, Rancho Cordova Police Department. March 7, 2019.

Personal communication with Mollie Meyer, Administrative Specialist, Operations Division, Sacramento Metropolitan Fire District. October 10, 2018.

Sacramento Area Council of Governments (SACOG). 1997. Mather Airport Comprehensive Land Use Plan. May 1997.

Sacramento Area Council of Governments (SACOG). 2008. SACOG Regional Growth Blueprint 2035 Growth Projections. Available at: <http://www.sacog.org/growth-projections-2035>.

Sacramento Area Council of Governments (SACOG). 2011. SACOG MTP/SCS 2035 Draft EIR.

Sacramento Area Council of Governments (SACOG). 2012. Metropolitan Transportation Plan/Sustainable Communities Strategy. Adopted April 19, 2012.

Sacramento Area Council of Governments (SACOG). 2016. 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy. Adopted February 18, 2016.

Sacramento Area Council of Governments (SACOG). 2016. SACOG MTP/SCS 2035 Final EIR. Available at: <https://www.sacog.org/general-information/final-2016-mtpscs-environmental-impact-report>.

Sacramento Area Council of Governments (SACOG). 2016. Draft Environmental Impact Report for the 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy. September 2015. Available at: <https://www.sacog.org/general-information/2016-mtpscs-draft-environmental-impact-report>.

Sacramento Area Sewer District. Sewer System Capacity Plan – 2010 Update. November 2011.

Sacramento Area Sewer District. Sewer System Management Plan. March 2019.

Sacramento County. 2016 Sacramento Countywide Local Hazard Mitigation Plan Update. December 2016.

Sacramento County Water Agency. 2015 Urban Water Management Plan. June 2016.

Sacramento County Water Agency. Groundwater Management Plan. October 26, 2004.

Sacramento County Water Agency. Water Supply Assessment for The Ranch at Sunridge. September 2011.

Sacramento County Water Agency. Zone 40 Water Supply Master Plan. February 2005.

Sacramento Metropolitan Air Quality Management District. 2009. Guide to Air Quality Assessment in Sacramento County. December 2009.

South Coast Air Quality Management District. 2015. Applicable of the South Coast Air Quality Management District for Leave to File Brief of Amicus Curiae in Support of Neither Party. Filed April.

Sacramento Metropolitan Air Quality Management District. 2015. SMAQMD Thresholds of Significance Table. Available at: <http://www.airquality.org/LandUseTransportation/Documents/CH2ThresholdsTable5-2015.pdf>.

Sacramento Metropolitan Air Quality Management District. 2016. Operational Best Management Practices for Particulate Matter Emissions from Land Use Development Projects. Available at: <http://www.airquality.org/LandUseTransportation/Documents/ch4OperationalBMPS-PMFINAL8-2016.pdf>.

Sacramento Metropolitan Air Quality Management District. 2017. July 13, 2017 Rancho Cordova Community Follow Up Meeting (Presentation). Available at: <http://www.airquality.org/StationarySources/Documents/SMAQMD%20SRC%20Public%20Meeting%202017%20presentation.pdf>.

Sacramento Metropolitan Air Quality Management District. 2018. Guide to Air Quality Assessment in Sacramento County. Last Revised September 2018. Available at: <http://www.airquality.org/businesses/ceqa-land-use-planning/ceqa-guidance-tools>.

Sacramento Metropolitan Air Quality Management District. 2019. Friant Ranch Interim Recommendation. April 25, 2019.

Sacramento Metropolitan Fire District. Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2017.

Sacramento Municipal Utility District. Guide for Transmission Encroachment. January 2013.

Sacramento Regional County Sanitation District. 20-Year Strategic Plan 2016-2026.

Sacramento Regional Transit. 2018. Sacramento Regional Transit website. Available at: http://www.sacrt.com/.

Saxelby Acoustics. Environmental Noise Assessment: The Ranch – Environmental Impact Report, City of Rancho Cordova, California. March 6, 2019.

South Sacramento Habitat Conservation Plan. Final South Sacramento Habitat Conservation Plan, Volume I. February 2018.

State of California. 2019. California's Fourth Climate Change Assessment. Published January 16, 2019. Available at: <http://climateassessment.ca.gov/>.

State Water Resources Control Board. 2010. State Water Resources Control Board 2010 Integrated Report Clean Water Act Sections 303(d) and 305(b) (SWRCB, 2010). April 19, 2010. Available at: <http://www.waterboards.ca.gov/water_issues/programs/tmdl/2010state_ir_reports/docs/2010ir0419.pdf>.

State Water Resources Control Board (GeoTracker) Information System and Geographic Environmental Information Management System (GEIMS) 2015. Available at: <http://geotracker.waterboards.ca.gov/>.

Transportation Research Board. Highway Capacity Manual 2010.

United States Census Bureau. 2017. American Factfinder.

United States Census Bureau. 2017. American Factfinder, Table S0102, Population 60 Years and Over in the United States – Rancho Cordova city, California.

United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2016. USDA NRCS Web Soil Survey, Sacramento County, California. Accessed August 2018.

United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2013b. Web Soil Survey. Accessed August 2018. Available at: <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>.

United States Energy Information Administration (U.S. EIA). 2017. California State Energy Profile. Last updated October 19, 2017. Available at: <https://www.eia.gov/state/print.cfm?sid=CA>.

United States Energy Information Administration (U.S. EIA). 2019a. Analysis and Projections. Short-term Energy Outlook. Release date: July 9, 2019. Available at: <https://www.eia.gov/outlooks/steo/report/global_oil.php>.

United States Energy Information Administration (U.S. EIA). 2019b. Independent Statistics and Analysis. Frequently Asked Questions. Last updated March 14, 2019. Available at: <https://www.eia.gov/tools/faqs/faq.php?id=33&t=6>.

United Stated Environmental Protection Agency (U.S. EPA). Water Quality Progress Report – Sacramento County Urban Creeks – Diazinon and Chlorpyrifos. Approved 2004.

United States Energy Information Administration (U.S. EIA). 2019a. Analysis and Projections. Short-term Energy Outlook. Release date: July 9, 2019. Available at: <https://www.eia.gov/outlooks/steo/report/global_oil.php>.

United States Energy Information Administration (U.S. EIA). 2019b. Independent Statistics and Analysis. Frequently Asked Questions. Last updated March 14, 2019. Available at: <https://www.eia.gov/tools/faqs/faq.php?id=33&t=6>.

United States Environmental Protection Agency. 2019a. Health Effects of Ozone Pollution. Accessed: July 11, 2019. Available at: <https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution>.

United States Environmental Protection Agency. 2016. Basic Information about Carbon Monoxide (CO) Outdoor Air Pollution. Accessed: July 11, 2019.Available: <https://www.epa.gov/co-pollution/basic-information-about-carbon-monoxide-co-outdoor-air-pollution#Effects>.

United States Environmental Protection Agency. 2017. Sulfur Dioxide Concentrations – EPA. Accessed: July 11, 2019. Available at: <https://cfpub.epa.gov/roe/indicator_pdf.cfm?i=91>.

United States Environmental Protection Agency. 2018. National Air Quality: Status and Trends of Key Air Pollutants. Accessed: July 11, 2019Available: <https://www.epa.gov/air-trends>.

United States Environmental Protection Agency. 2019b. Health Effects of Ozone In the General Population. Accessed: July 11, 2019.Available: <https://www.epa.gov/ozone-pollution-and-your-patients-health/health-effects-ozone-general-population>.

United States Environmental Protection Agency. 2019c. Health and Environmental Effects of Particulate Matter (PM). Available: https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm. Accessed: July 12, 2019.

United States Environmental Protection Agency. 2019d. Basic Information About Lead Pollution. Accessed: July 12, 2019. Available: <https://www.epa.gov/lead-air-pollution/basic-information-about-lead-air-pollution#how>.

United States Geological Survey. 2018. Magnitude/Intensity Comparison. Available at: <https://earthquake.usgs.gov/learn/topics/mag_vs_int.php>.

University of California, Davis. 1997. Transportation Project-Level Carbon Monoxide Protocol. Revised December, 1997.

United States Energy Information Administration (U.S. EIA). 2017. California State Energy Profile. Last updated October 19, 2017. Available at: <https://www.eia.gov/state/print.php?sid=CA>.

Wallace-Kuhl & Associates. Phase I Environmental Site Assessment – Jaeger Ranch Property, Southeast of the Intersection of Douglas Road and Jaeger Road Rancho Cordova, California. September 22, 2016.

Wallace-Kuhl & Associates. Preliminary Geotechnical Engineering Report – Jaeger Ranch Property. September 26, 2016.

Watermark Engineering, Inc. The Ranch Master Drainage Study, Third Submittal. April 30, 2019.

This page left intentionally blank.

APPENDIX A

Initial Study, Notice of Preparation, and Comments

INITIAL STUDY

PROJECT TITLE

The Ranch

LEAD AGENCY NAME AND ADDRESS

City of Rancho Cordova
2729 Prospect Park Drive
Rancho Cordova, CA 95670

CONTACT PERSON AND PHONE NUMBER

June Cowles, Senior Planner
City of Rancho Cordova Planning Department
(916) 851-8756

PROJECT SPONSOR'S NAME AND ADDRESS

Olga Sciorelli
K. Hovnanian Homes
3721 Douglas Blvd. # 150
Roseville, CA 95661
(916) 945-5362

PURPOSE OF THE INITIAL STUDY

An Initial Study (IS) is a preliminary analysis which is prepared to determine the relative environmental impacts associated with a proposed project. It is designed as a measuring mechanism to determine if a project will have a significant adverse effect on the environment, thereby triggering the need to prepare an Environmental Impact Report (EIR). It also functions as an evidentiary document containing information which supports conclusions that the project will not have a significant environmental impact or that the impacts can be mitigated to a "Less Than Significant" or "No Impact" level.

This Initial Study has been prepared consistent with the California Environmental Quality Act (CEQA) Guidelines Section 15063, to determine if the proposed Ranch Project (project) may have a significant effect upon the environment. Based upon the findings and mitigation measures contained within this report, environmental impacts are significant enough to warrant the preparation of an EIR.

PROJECT DESCRIPTION

See the Notice of Preparation for a description of the proposed project, including the project location, General Plan designation, zoning, project background, project characteristics, and required approvals.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

X	Aesthetics		Agriculture and Forest Resources	X	Air Quality
X	Biological Resources	X	Cultural Resources	X	Geology and Soils
X	Greenhouse Gasses	X	Hazards and Hazardous Materials	X	Hydrology and Water Quality
X	Land Use and Planning		Mineral Resources	X	Noise
X	Population and Housing	X	Public Services	X	Recreation
X	Transportation and Traffic	X	Tribal Cultural Resources	X	Utilities and Service Systems
X	Mandatory Findings of Significance				

DETERMINATION

On the basis of this initial evaluation:

	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
X	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature _____ Date _____

EVALUATION OF ENVIRONMENTAL IMPACTS

In each area of potential impact listed in this section, there are one or more questions which assess the degree of potential environmental effect. A response is provided to each question using one of the four impact evaluation criteria described below. A discussion of the response is also included.

- Potentially Significant Impact. This response is appropriate when there is substantial evidence that an effect is significant. If there are one or more "Potentially Significant Impact" entries, upon completion of the Initial Study, an EIR is required.
- Less than Significant With Mitigation Incorporated. This response applies when the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact". The Lead Agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level.
- Less than Significant Impact. A less than significant impact is one which is deemed to have little or no adverse effect on the environment. Mitigation measures are, therefore, not necessary, although they may be recommended to further reduce a minor impact.
- No Impact. These issues were either identified as having no impact on the environment, or they are not relevant to the project.

ENVIRONMENTAL CHECKLIST

This section of the Initial Study incorporates the most current Appendix "G" Environmental Checklist Form, contained in the CEQA Guidelines. Impact questions and responses are included in both tabular and narrative formats for each of the 19 environmental topic areas.

I. AESTHETICS -- WOULD THE PROJECT:

	Potentially Significant Impact	***Less Than Significant with Mitigation Incorporated***	***Less Than Significant Impact***	***No Impact***
a) Have a substantial adverse effect on a scenic vista?	X			
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?			X	
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	X			
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	X			

RESPONSES TO CHECKLIST QUESTIONS

Responses a, c, d): It has been determined that the potential impacts on aesthetics caused by the proposed project will require a more detailed analysis in the EIR. As such, the lead agency will examine each of the three potentially significant environmental issues listed in the checklist above in the EIR and will determine whether the proposed project will have a potentially significant impact on scenic vistas, the visual character of the site, and light and glare. At this point, a definitive impact conclusion for each of these environmental topics will not be made; rather, these three issues are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will provide a discussion of viewsheds, proximity to scenic vistas, existing lighting standards, thresholds of significance, a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented to reduce impacts on aesthetics. The EIR will identify applicable General Plan policies that protect the visual values located along public roadways and surrounding land uses, and will also address the potential for the project to substantially impair the visual character of the project vicinity. The analysis will address any proposed design and landscaping plans developed by the applicant and provide a narrative description of the anticipated changes to the visual characteristics of the project site as a result of project implementation and the conversion of the existing on-site land uses. The analysis will also address potential impacts associated with light spillage onto adjacent properties during nighttime activities.

Response b): The project site is not located adjacent to or in the vicinity of a state scenic highway. The project would have no impact related to the potential to substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, within a state scenic

highway. Therefore, this impact would be ***less than significant***. This issue will not be addressed further.

II. AGRICULTURE AND FOREST RESOURCES -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?			X	
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?			X	
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined in Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?			X	
d) Result in the loss of forest land or conversion of forest land to non-forest use?			X	
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?			X	

RESPONSES TO CHECKLIST QUESTIONS

Responses a-e) The majority of the project site is depicted on the California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) as Grazing Land, with some portions of the site depicted as Urban and Built-Up Land. Grazing Land is suitable for the grazing of livestock and does not qualify as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

As discussed previously, the project site is currently zoned AG-80 by the City. As part of the proposed project, the entire project site would be rezoned from AG-80 to SPA. According to the most recent (2015/2016) Sacramento County Williamson Act Map, the project site is not under a Williamson Act contract. Potential conflicts for future development to conflict with existing zoning for agricultural use were addressed in the Rancho Cordova General Plan EIR under Impact 4.2.2, which identified potential conflicts between urban uses and agricultural uses, as a significant and unavoidable impact and Impact 4.2.4, which identified cumulative impacts associated with conversion of agricultural lands and agricultural/urban interface conflicts as a cumulatively considerable contribution to a significant and unavoidable impact (City of Rancho Cordova General Plan Draft EIR, pages 4.2-20 -4.2-26). The project will be required to implement all applicable mitigation measures, General Plan policies, and General Plan actions identified as measures to reduce environmental effect of Impacts 4.2.2 and 4.2.4.

The project site is not forest land (as defined in Public Resources Code section 1222(g)) or timberland (as defined in Public Resources Code section 4526), and the site is not zoned for forest land. The proposed project would not conflict with existing zoning for, or cause rezoning of, forest land or

timberland. The proposed project would not result in the loss of forest land or conversion of forest land to non-forest use. The proposed project does not involve changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use.

Therefore, impacts associated with agricultural and forest resources would be ***less than significant***. These issues will not be addressed further.

III. AIR QUALITY -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Conflict with or obstruct implementation of the applicable air quality plan?	X			
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	X			
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	X			
d) Expose sensitive receptors to substantial pollutant concentrations?	X			
e) Create objectionable odors affecting a substantial number of people?	X			

RESPONSES TO CHECKLIST QUESTIONS

Responses a-e): It has been determined that the potential impacts on air quality caused by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine each of the five potentially significant environmental issues listed in the checklist above in the EIR and will determine whether the proposed project has the potential to have a significant impact on air quality. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will include an air quality analysis that presents the methodology, thresholds of significance, an impact analysis, and a discussion of feasible mitigation measures that should be implemented to reduce impacts on air quality. The air quality analysis will address air quality impacts, including the potential for the project to:

- conflict with or obstruct implementation of the applicable air quality plan;
- violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- expose sensitive receptors to substantial pollutant concentrations; and/or
- create objectionable odors affecting a substantial number of people.

IV. BIOLOGICAL RESOURCES -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	X			
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	X			
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	X			
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	X			
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	X			
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	X			

RESPONSES TO CHECKLIST QUESTIONS

Responses a-f): Based on the documented special status species, sensitive natural communities, wetlands, and other biological resources in the region, it has been determined that the potential impacts on biological resources resulting from the proposed project will require a detailed analysis. As such, the lead agency will examine each of the environmental issues listed in the checklist above in the EIR and will determine whether the proposed project has the potential to have a significant impact on biological resources. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will provide a summary of local biological resources, including descriptions and mapping of plant communities, the associated plant and wildlife species, and sensitive biological resources known to occur, or with the potential to occur in the project vicinity. The analysis will will identify applicable thresholds of significance, provide an impact analysis, and, if necessary, discuss feasible mitigation

measures that should be implemented to reduce impacts on biological resources and to ensure compliance with federal and state regulations.

V. CULTURAL RESOURCES -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5?	X			
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5?	X			
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	X			
d) Disturb any human remains, including those interred outside of formal cemeteries?	X			

RESPONSES TO CHECKLIST QUESTIONS

Responses a-d): Based on known historical and archaeological resources in the region, and the potential for undocumented underground cultural resources in the region, it has been determined that the potential impacts on cultural resources caused by the proposed project will require analysis in the EIR. As such, the lead agency will examine each of the four environmental issues listed in the checklist above in the EIR and will determine whether the proposed project has the potential to have a significant impact on cultural resources. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will include an overview of the prehistory and history of the area, the potential for surface and subsurface cultural resources to be found in the area, the types of cultural resources that may be expected to be found, a review of existing regulations and policies that protect cultural resources, an impact analysis, and mitigation that should be implemented in order to reduce potential impacts to cultural resources.

VI. GEOLOGY AND SOILS -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	X			
ii) Strong seismic ground shaking?	X			
iii) Seismic-related ground failure, including liquefaction?	X			
iv) Landslides?	X			
b) Result in substantial soil erosion or the loss of topsoil?	X			
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	X			
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	X			
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X

RESPONSES TO CHECKLIST QUESTIONS

Responses a)i, a)ii, a)iii, a)iv, b, c, d): It has been determined that the potential impacts from geology and soils will require a detailed analysis in the EIR. As such, the lead agency will examine each of the seven potentially significant environmental issues listed in the checklist above in the EIR and will determine whether the proposed project has the potential to have a significant impact associated with geology and soils. At this point, a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will include a review of existing geotechnical reports, published documents, aerial photos, geologic maps and other geological and geotechnical literature pertaining to the site and surrounding area to aid in evaluating geologic resources and geologic hazards that may be present. The EIR will include a description of the applicable regulatory setting, a description of the existing geologic and soils

conditions on and around the project site, an evaluation of geologic hazards, a description of the nature and general engineering characteristics of the subsurface conditions within the project site. This section of the EIR will identify applicable thresholds of significance, provide an impact analysis, and, if necessary, discuss feasible mitigation measures that should be implemented to reduce impacts associated with geology and soils.

Response e): The proposed project would connect to the municipal sewer system for wastewater disposal. Septic tanks or septic systems are not proposed as part of the project. As such, ***no impact*** would occur. This CEQA topic is not relevant to the proposed project and does not require further analysis.

VII. GREENHOUSE GAS EMISSIONS -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	X			
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses?	X			

RESPONSES TO CHECKLIST QUESTIONS

Responses a), b): Implementation of the proposed project could generate greenhouse gases (GHGs) from a variety of sources, including but not limited to vehicle trips, vehicle idling, electricity consumption, water use, and solid waste generation. It has been determined that the potential impacts from GHG emissions by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine each of the environmental issues listed in the checklist above in the EIR and will determine whether the proposed project has the potential to have a significant impact from GHG emissions. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

VIII. HAZARDS AND HAZARDOUS MATERIALS -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	X			
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	X			
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	X			
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	X			
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?			X	
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?			X	
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	X			
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	X			

RESPONSES TO CHECKLIST QUESTIONS

Responses a-d, g-h): It has been determined that the potential impacts from hazards and/or hazardous materials by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine each of the six potentially significant environmental issues listed in the checklist above in the EIR and will determine whether the proposed project has the potential to have a significant impact from hazards and/or hazardous materials. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will include a review of existing environmental site assessments and any other relevant studies for the project site to obtain a historical record of environmental conditions. The analysis will also include a review of recent records and aerial photographs. A site reconnaissance will be performed to

observe the site and potential areas of interest. Information on the current and historical use of the properties will be gathered, and the potential for project implementation to introduce hazardous materials to and from the area during construction and operation. This section will identify applicable thresholds of significance, provide an impact analysis, and, if necessary, discuss feasible mitigation measures that should be implemented to reduce impacts associated with hazards and hazardous materials.

Responses e-f): The project site is not located within an airport land use plan, nor within two miles of a public airport or private airstrip. The project site is located approximately four miles from the center of Mather Airport, a major, county-owned facility. Mather Airport is primarily used by air cargo carriers and general aviation (small, private aircraft). Mather Airport is also a major maintenance facility and houses the California Department of Forestry administrative and maintenance facilities. All air traffic arriving and departing Mather Airport is generally routed along a path more than 2.5 miles north of the project area. The proposed project is outside the airport's clear zone, approach-departure zone, and overflight zone, as indicated on the current Comprehensive Land Use Plan (CLUP) for Mather Airport (Airport Land Use Commission, 1997). Therefore, the proposed project would not result in a safety hazard for people residing or working in the area.

Given that the project site is located outside the existing and proposed CLUP boundaries, implementation would not conflict with operations of this airport facility. Therefore, impacts associated with airports and private air strips would be ***less than significant***. As such, these CEQA topics are not relevant to the proposed project and do not require further analysis. These issues will not be addressed further.

IX. HYDROLOGY AND WATER QUALITY -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Violate any water quality standards or waste discharge requirements?	X			
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	X			
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	X			
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	X			
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	X			
f) Otherwise substantially degrade water quality?	X			
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?			X	
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?			X	
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?			X	
j) Inundation by seiche, tsunami, or mudflow?			X	

RESPONSES TO CHECKLIST QUESTIONS

Responses a-f): It has been determined that the potential impacts on water quality, groundwater supplies, drainage, and runoff caused by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine each of the six potentially significant environmental issues listed in the checklist above in the EIR and will determine whether the proposed project has the potential to have a significant impact on hydrology and water quality. At this point a definitive impact conclusion

for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will evaluate the potential construction and operational impacts of the proposed project on water quality. This section will describe the surface drainage patterns of the project site and adjoining areas, and identify surface water quality in the project site based on existing and available data. This section will identify impaired water bodies, listed pursuant to Section 303(d) of the federal Clean Water Act, in the vicinity of the project site. Conformity of the proposed project to water quality regulations will also be discussed. Mitigation measures will be developed to incorporate best management practices (BMPs), consistent with the requirements of the Central Valley Regional Water Quality Control Board to reduce the potential for site runoff.

This EIR will identify applicable thresholds of significance, provide an impact analysis, and, if necessary, discuss feasible mitigation measures that should be implemented to reduce impacts associated with hydrology and water quality.

Responses g-j): The project site is not located within a 100-year flood hazard area. The project site is located within Flood Zone X, which is not within the 100-year flood zone as shown on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) number 06067C0240H.

The project site is not located within a dam inundation area. The proposed project would not expose people or structures to a significant risk of loss, injury or death involving flooding as a result of the failure of a levee or dam. The project site is not anticipated to be inundated by a tsunami because it is located elevations ranging between 170 and 210 feet above MSL and is approximately 70 miles away from the Pacific Ocean which is the closest ocean waterbody. The project site is not anticipated to be inundated by a seiche because it is not located in close proximity to a water body capable of creating a seiche.

A mudflow is a category of landslide that is associated with heavy saturation of soils and sometimes is associated with seismicity. Factors such as the geological conditions, drainage, slope, vegetation, and others directly affect the potential for mudflow. The City's General Plan EIR does not identify mudslides as a topic of concern. Additionally, no steep areas that would have the potential to generate mudflows during operation would be created.

Therefore, impacts associated with flooding, dam inundation, and inundation by seiche, tsunami, or mudflow would be ***less than significant***. These issues will not be addressed further.

X. LAND USE AND PLANNING -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Physically divide an established community?			X	
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	X			
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	X			

RESPONSES TO CHECKLIST QUESTIONS

Response a): The proposed project includes development of residential, commercial, parks, and open space uses, including a natural resource preserve. The site is currently undeveloped and surrounded by existing and planned residential and other urban uses. The proposed project is consistent with the surrounding uses and would not physically divide an established community. Therefore, impacts associated with division of an established community would be ***less than significant***. This issue will not be addressed further.

Responses b-c): It has been determined that the potential land use and planning impacts caused by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine each of the two potentially significant environmental issues in the EIR and will determine whether the proposed project has the potential to have a significant impact. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will include a detailed discussion of the project as it relates to the existing General Plan, Zoning Code, and other local regulations. The local, regional, state, and federal jurisdictions potentially affected by the project will be identified, as well as their respective plans, policies, laws, and regulations, and potentially sensitive land uses. The proposed project will be evaluated for consistency with the City of Rancho Cordova General Plan, the Zoning Ordinance, and other local planning documents. This section of the EIR will identify thresholds of significance, provide an impact analysis, and, if necessary, discuss of feasible mitigation measures that should be implemented to ensure consistency applicable land use plans, policies, and regulations and to address potential conflicts with any applicable habitat conservation plan or natural community conservation plan.

XI. MINERAL RESOURCES -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

RESPONSES TO CHECKLIST QUESTIONS

Responses a-b): The California Division of Mines and Geology does not designate the project site or surrounding vicinity as a high quality resource area or a mineral resources zone. The project site is not designated as a locally-important mineral resource recovery site by the City. Given that no known mineral resources are located in the vicinity of the project site, implementation of the proposed project would not result in the loss of availability of a known mineral resource or of a locally-important mineral resource recovery site. Therefore, there would be ***no impact*** regarding mineral resources. These issues will not be addressed further.

XII. NOISE -- WOULD THE PROJECT RESULT IN:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	X			
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	X			
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	X			
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	X			
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			X	
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?			X	

RESPONSES TO CHECKLIST QUESTIONS

Responses a-d): Based on existing and projected noise levels along roadways, and the potential for noise generated during project construction and operational activities, it has been determined that the potential impacts from noise caused by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine each of the four potentially significant environmental issues listed in the checklist above in the EIR and will determine whether the proposed project has the potential to have a significant impact from noise. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will identify the noise level standards contained in the City of Rancho Cordova General Plan Noise Element which are applicable to this project, as well as any germane state and federal standards. A noise study will be conducted and will include continuous (24-hour) and short-term noise measurements on the project site and in the project vicinity in order to quantify existing ambient noise levels from existing noise sources. The noise study will provide an estimate of existing traffic noise levels adjacent to the project-area roadways through application of accepted traffic noise prediction methodologies. Any significant noise sources other than local traffic within the project site will be identified and quantified through noise level measurements. The noise study will identify all significant noise impacts due to and upon development of the proposed project. The noise study will determine the land use compatibility of proposed uses as it may affect existing noise sensitive receptors in the project

site. An assessment of construction noise impacts and potential mitigation measures will also be provided. The study will present appropriate and practical recommendations for noise control aimed at reducing any noise impacts. The EIR will identify applicable thresholds of significance, provide an impact analysis, and, if necessary, discuss feasible mitigation measures that should be implemented to reduce impacts associated with noise.

Responses e-f): As discussed previously, the project site is located approximately four miles from the center of Mather Airport. The proposed project is outside all measured noise contours as indicated on the current CLUP for Mather Airport (Airport Land Use Commission, 1997). Additionally, there are no private airstrips within the vicinity of the project site. Therefore, impacts associated with airports and private air strips would be ***less than significant***. These issues will not be addressed further.

XIII. POPULATION AND HOUSING -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	X			
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

RESPONSES TO CHECKLIST QUESTIONS

Response a): It has been determined that the potential population and housing impacts caused by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine this environmental issue in the EIR and will determine whether the proposed project has the potential to have a significant impact. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will include a detailed discussion of the project characteristics as they relate to the existing General Plan Housing Element, and other local regulations. The local, regional, state, and federal jurisdictions potentially affected by the project will be identified, as well as their respective plans, policies, laws, and regulations, and potentially sensitive land uses. The proposed project will be evaluated for consistency the City of Rancho Cordova General Plan, the Zoning Ordinance, and other local planning documents. Planned development and housing and population trends in the region will be identified based on currently available plans. The EIR will provide an analysis of the project's potential to induce substantial population growth including the thresholds of significance, an impact analysis, and, if necessary, feasible mitigation measures that should be implemented.

Responses b-c): The project site is currently undeveloped and does not contain housing. The proposed project would not displace housing or people. There is ***no impact***, and these topics will not be further addressed in the EIR.

XIV. PUBLIC SERVICES

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	X			
Police protection?	X			
Schools?	X			
Parks?	X			

RESPONSES TO CHECKLIST QUESTIONS

Response a): Implementation of the proposed project would result in increased demand for police, fire protection, schools, parks, and other public facilities in the area. It has been determined that the potential impacts from increased demands on public services caused by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine each of these environmental issues listed in the checklist above in the EIR and will determine whether the proposed project has the potential to have a substantial adverse physical impact associated with public services. At this point, a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

During the preparation of the EIR, the public service providers will be consulted in order to determine existing service levels in the project area. This would include documentation regarding existing staff levels, equipment and facilities, current service capacity, existing service boundaries, and planned service expansions. Master plans from such public service providers and City policies, programs, and standards associated with the provision of public services will be described in the EIR. The EIR analysis will identify the thresholds of significance, provide an impact analysis, and, if necessary, discuss feasible mitigation measures that should be implemented reduce environmental impacts associated with public services.

XV. RECREATION

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	X			
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	X			

RESPONSES TO CHECKLIST QUESTIONS

Responses a-b): Implementation of the proposed project would result in increased demand for parks, and other recreational facilities in the area. It has been determined that the potential impacts from increased demands to recreation facilities caused by the proposed project will require a detailed analysis in the EIR. As such, the lead agency will examine each of these environmental issues listed in the checklist above in the EIR, and will determine whether the proposed project has the potential to have a significant impact on recreational facilities. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

During the preparation of the EIR, the recreational facilities and services will be analyzed to determine existing service levels in the project area. This would include documentation regarding existing and future facility needs, current service capacity, and planned service expansions. City policies, programs, and standards associated with the provision of public services will be presented in the EIR.

The EIR will identify thresholds of significance, provide an impact analysis, and discuss of feasible mitigation measures that should be implemented reduce impacts associated with recreation.

XVI. TRANSPORTATION AND TRAFFIC -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	X			
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	X			
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?			X	
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	X			
e) Result in inadequate emergency access?	X			
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	X			

RESPONSES TO CHECKLIST QUESTIONS

Responses a-b, d-f): The proposed project includes the development of uses that will increase traffic on existing and planned roadways. The circulation design includes roadway improvements intended to accommodate traffic patterns in the area. Based on existing and projected traffic volume levels along roadways, it has been determined that the potential traffic impacts caused by the proposed project will require a detailed analysis in the EIR. As such, the EIR will examine each of the five potentially significant environmental issues listed in the checklist above and will determine whether the proposed project has the potential to have a significant impact from traffic. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is conducted in the EIR.

The EIR will describe existing and future traffic conditions and will identify the trips that will be generated by the project and the projected distribution of those trips on the roadway system. The EIR will analyze traffic impacts associated with the project under existing and cumulative conditions. Potential impacts associated with site access and on-site circulation will also be addressed in the EIR. The EIR will identify applicable thresholds of significance, provide an impact analysis, and discuss feasible mitigation measures that should be implemented reduce impacts associated with transportation/traffic.

Responses b-c): The proposed project does not include airport or airstrip facilities and is not located adjacent to an airport or airstrip. As noted previously, the proposed project is outside the airport's clear zone, approach-departure zone, and overflight zone, as indicated on the current CLUP for Mather Airport (Airport Land Use Commission, 1997). The proposed project does not include towers or other elevated structures. The proposed project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. This impact would be ***less than significant***. This issue will not be addressed further.

XVII. TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?	X			
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resources to a California Native American tribe.	X			

RESPONSES TO CHECKLIST QUESTIONS

Responses a-b): Based on known historical, cultural, tribal, and archaeological resources in the region, and the potential for undocumented underground cultural resources in the region, it has been determined that the potential impacts on tribal cultural resources will require analysis in the EIR. As such, the lead agency will examine the two environmental issues listed in the checklist above in the EIR and will determine whether the proposed project has the potential to have a significant impact on tribal cultural resources. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will include an overview of the prehistory and history of the area, the potential for surface and subsurface tribal cultural resources to be found in the area, the types of tribal cultural resources that may be expected to be found, the results of consultation with Native American tribes, a review of existing regulations and policies that protect tribal cultural resources, an impact analysis, and, if necessary, identification of mitigation that should be implemented in order to reduce potential impacts to tribal cultural resources.

XVIII. UTILITIES AND SERVICE SYSTEMS -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	X			
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	X			
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	X			
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	X			
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments?	X			
f) Be served by a landfill with sufficient permitted capacity to accommodate the projects solid waste disposal needs?	X			
g) Comply with federal, state, and local statutes and regulations related to solid waste?	X			

RESPONSES TO CHECKLIST QUESTIONS

Responses a-g): Implementation of the proposed project would result in increased demands for utilities to serve the project. As such, the EIR will examine each of the seven environmental issues listed in the checklist above and will determine whether the proposed project has the potential to have a significant impact to utilities and service systems. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

The EIR will analyze wastewater, water, and storm drainage infrastructure, as well as other utilities (i.e. solid waste, gas, electric, etc.), that are needed to serve the proposed project. The wastewater assessment will include a discussion of the proposed collection and conveyance system, treatment methods and capacity at the treatment plants, disposal location(s) and methods, and the potential for recycled water use for irrigation. The EIR will analyze the impacts associated with on-site construction of the conveyance system, including temporary impacts associated with the construction phase. The proposed infrastructure will be presented. The EIR will provide a discussion of the wastewater treatment plant that will serve the project, including current demand and capacity at the plant. The

analysis will discuss the proposed wastewater infrastructure, disposal methods and location, including environmental impacts and permit requirements associated with disposal of treated wastewater.

The storm drainage analysis will include a discussion of the proposed drainage collection system including impacts associated with on-site construction of the storm drainage system. The EIR will identify permit requirements and, if necessary, mitigation needed to minimize and/or avoid significant impacts will be described.

The EIR will identify the proposed water supply infrastructure and water demand, identify applicable thresholds of significance and permit requirements, analyze the impacts associated with construction and operation of the water system, and, if necessary, mitigation needed to minimize and/or avoid significant impacts will be described.

The EIR will also address solid waste collection and disposal services for the proposed project. This will include an assessment of the existing landfill capacity, the project's solid waste generation, and whether there is sufficient capacity to meet the project demands. The project's potential to result in impacts associated with solid waste will be analyzed and, if necessary, mitigation needed to minimize and/or avoid significant impacts will be described.

XVIV. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	X			
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	X			
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	X			

RESPONSES TO CHECKLIST QUESTIONS

Responses a, c): It has been determined that the potential for the proposed project to: degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; reduce the number or restrict the range of a rare or endangered plant or animal; eliminate important examples of the major periods of California history or prehistory; or adversely affect human beings will require more detailed analysis in an EIR. As such, the EIR will examine each of these environmental issues and will determine whether the proposed project has the potential to have a significant impact on these environmental issues. At this point a definitive impact conclusion for each of these environmental topics will not be made, rather all are considered ***potentially significant*** until a detailed analysis is prepared in the EIR.

Response b): The Draft EIR will address cumulative impacts, including ***potentially significant*** cumulative impacts associated with the following:

- aesthetics;
- air quality;
- biological resources;
- cultural resources;
- geology and soils;
- greenhouse gas emissions;
- hazards and hazardous materials;
- hydrology and water quality;

- land use and planning;
- noise;
- population and housing;
- public services;
- recreation;
- transportation and traffic;
- tribal cultural resources; and
- utilities and service systems.

As discussed previously, implementation of the proposed project would not result in conversion Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, and would not conflict with a Williamson Act contract. The project site is not forest land or timberland. Potential cumulative impacts associated with agricultural and forestry resources were adequately addressed in the Rancho Cordova General Plan EIR as previously described. Cumulative impacts associated with agricultural and forestry resources will not be addressed further.

As discussed previously, implementation of the proposed project would not result in the loss of a high quality resource area or a mineral resources zone and would thus not have a considerable contribution to cumulative impacts associated with mineral resources. Cumulative impacts associated with mineral resources will not be addressed further.

REFERENCES

- City of Rancho Cordova. Rancho Cordova General Plan. Adopted June 26, 2006.
- City of Rancho Cordova. Rancho Cordova General Plan Draft Environmental Impact Report. March 2006.
- Sacramento Area Council of Governments, Airport Land Use Commission. Mather Airport Comprehensive Land Use Plan. May 1997.

NOTICE OF PREPARATION

DATE: **July 6, 2018**

TO: **Responsible Agencies, Organizations and Interested Parties**

LEAD AGENCY: **City of Rancho Cordova**
Contact: June Cowles
2729 Prospect Park Drive
Rancho Cordova, CA 95670

SUBJECT: **Environmental Impact Report for The Ranch Project.**

In discharging its duties under Section 15021 of the California Environmental Quality Act (CEQA) Guidelines, the City of Rancho Cordova (as Lead Agency) intends to prepare an Environmental Impact Report (EIR) for The Ranch Project. The City will be the lead agency for compliance with the California Environmental Quality Act ("CEQA").

In accordance with Section 15082 of the CEQA Guidelines, the City of Rancho Cordova has prepared this Notice of Preparation to provide Responsible Agencies and other interested parties with sufficient information describing the proposal and its potential environmental effects.

The determination to prepare an Environmental Impact Report was made by the City of Rancho Cordova. An Initial Study, attached hereto, has been prepared pursuant to CEQA Guidelines Section 15063, which identifies the anticipated environmental effects of the project. The Initial Study satisfies the City's obligation under CEQA Guidelines Section 15082, subdivision (a)(1)(C), to identify the "probable environmental effects of the project."

As specified by the CEQA Guidelines, the Notice of Preparation will be circulated for a 30-day review period. The City of Rancho Cordova welcomes public input during this review. In the event that no response or request for additional time is received by any Responsible Agency by the end of the review period, the Lead Agency may presume that the Responsible Agency has no response.

PUBLIC MEETING
A Public Scoping Meeting will be held on July 26, 2018 at 5:30 p.m.
in the Rancho Cordova City Hall, American River South Room
2729 Prospect Park Drive, Rancho Cordova

Comments may be submitted in writing during the review period and addressed to:

June Cowles, Senior Planner
City of Rancho Cordova
2729 Prospect Park Drive
Rancho Cordova, CA 95670

The comment period closes on August 6, 2018.

A. PROJECT LOCATION, CURRENT USE, AND SURROUNDING USES

The project site consists of approximately 530 acres located in the City of Rancho Cordova city limits. The project site is bound by existing single-family residential uses and Douglas Road to the north, vacant land and Grant Line Road to the east, vacant land and Kiefer Boulevard to the south, and Rancho Cordova Parkway, single family residential, and vacant land on the west. (See **Figure 1** and **Figure 2**). The project parcel is Sacramento County Assessor's Parcel Number (APN) 067-004-0008.

The project site is currently vacant and has been previously used for agricultural uses (cattle grazing). The topography of the site exhibits low relief topography with elevations ranging between 170 and 210 feet above mean sea level (MSL). The slopes throughout the site range from approximately zero to eight percent. The site is characterized by moderate rolling hills and areas of extensive flatlands, with wetlands, vernal pools, and seasonal drainage courses scattered throughout the site. A headwater tributary of Morrison Creek traverses the project site, entering at the northeast corner and flowing generally to the southwest. A total of 21.53 acres of jurisdictional aquatic resources have been mapped with the project site, including: 2.92 acres of depressional seasonal wetlands, 15.04 acres of vernal pools, 1.66 acres of riverine seasonal wetlands, 0.06 acres of riverine seasonal wet swales, 1.54 acres of intermittent drainages, and 0.30 acres of drainage basin outfalls.

The property is traversed by a 275-foot-wide utility easement occupied by a 230-kV Pacific Gas and Electric (PG&E) transmission line, one 230-kV Sacramento Municipal Utility District (SMUD) transmission line, and one 69-kV SMUD sub-transmission line. No other public utilities (water, sewer, drainage) are located on site.

The project site is bound by the Sunridge Specific Plan to the north, east, and west, and by the SunCreek Specific Plan to the south and east. Land uses anticipated to the east and south of the project site by the Sunridge Specific Plan and the SunCreek Specific Plan include low, medium, and high density residential uses, commercial mixed uses (retail, office, and retail professional), and neighborhood parks. Other land uses located nearby include new elementary, junior and senior high schools. See **Figure 2** and **Figure 3**.

B. PROJECT OBJECTIVES

Consistent with CEQA Guidelines Section 15124(b), a clear statement of objectives and the underlying purpose of the proposed project shall be discussed. The principal objective of the proposed project is the approval and subsequent implementation of The Ranch Project (the proposed project). The quantifiable objectives of the proposed project include development of the approximately 530-acre site with: 1,375 single family residential units, including 689 age restricted single-family units with a club house and other recreational opportunities; dedication of approximately six acres for commercial use; and dedication of approximately five acres for multi-family residential uses in accordance with the City of Rancho Cordova's Affordable Housing Plan.

The proposed project identifies the following objectives:

- Respect the project site's existing natural features through preservation of 198 acres of wetlands, vernal pools, and open space;

- Create a high-quality development that implements the vision of the General Plan, which designates the project site for development with a local town center, a mix of residential densities, and a natural resources preserve;

- Provide a residential development that would assist the City in meeting its housing needs, including a range of housing types to serve the senior population;

- Provide a residential development that would assist the City in meeting its affordability goals providing housing at many price points and attract residents from different areas;

- Create of a unique age-restricted community that provides a mix of housing types and amenities, including a club house and recreation facility,

- Accommodate neighborhood-serving commercial uses as part of the town center; and

- Implement the City's Bicycle and Pedestrian Master Plans through providing an on-site bicycle and pedestrian network that is accessible by the general public and provides opportunities for connectivity with bicycle and pedestrian facilities on adjacent properties.

C. PROJECT CHARACTERISTICS

The project proposes an approximately 530-acre residential community. Development would include approximately 1,375 single family residential units (including 689 age restricted single-family units), up to 120 multifamily units, a six-acre commercial parcel, a community clubhouse, a park and trail system, open space, and supporting infrastructure. **Figure 4** depicts the project characteristics and **Table 1** summarizes the proposed uses.

Table 1: Land Use Summary

PROPOSED USE	GROSS ACRES	NET ACRES	DWELLING UNITS	NON-RESIDENTIAL SQUARE FEET	GROSS DENSITY (UNITS/ACRE)	NET ACREAGE AS PERCENTAGE OF TOTAL
Single Family Residential						
Village 1 (60x105)	18.9	14.87	91	-	4.81	2.8%
Villages 2,11 (50x105)	32.43	24.74	178	-	5.49	4.7%
Villages 3,4 (45x105)	24.11	17.03	137	-	5.68	3.2%
Villages 5,9,10 (45x85)	16.71	10.84	114	-	6.82	2.0%
Villages 6,7,8 (36x70)	17.65	11.86	166	-	9.41	2.2%
	109.8	*79.34*	*686*	-	*6.25*	*15.0%*
Single Family Residential – Age Restricted						
Villages 12,21 (60x105)	29.52	20.78	123	-	4.17	3.9%
Villages 17,19 (50x105)	24.78	18.64	140	-	5.65	3.5%
Villages 14,15,16 (45x105)	42.94	32.01	265	-	6.17	6.0%

Proposed Use	Gross Acres	Net Acres	Dwelling Units	Non-Residential Square Feet	Gross Density (Units/Acre)	Net Acreage as Percentage of Total
Villages 13,20 (52x64)	21.48	14.22	148	-	6.89	2.7%
Village 18 (varying size)	2.29	1.67	13	-	5.68	0.3%
	121.01	*87.32*	*689*	-	*5.69*	*16.2%*
Mixed Use (Residential and Commercial)						
Village 22	13.56	12.7	120	46,000	8.85	2.4%
Subtotal	*13.56*	*12.7*	*120*	*46,000*	*8.85*	*2.4%*
Parks and Community Facilities						
Recreation Center (Lot A)	5.49	5.03	-	20,000 to 27,000	-	1.0%
Park (Lot B)	1.69	1.40	-		-	0.3%
Park (Lot C)	10.42	10.18	-			1.9%
Subtotal	*17.6*	*16.61*	-		-	*3.1%*
Open Space						
Protected Areas (Lots D, E)	225.66	199.76	-	-	-	37.8%
Protected Area / Landscape (Lots F-J)	-	25.11	-	-	-	4.8%
Water Quality / Detention	12.62	9.64	-	-	-	1.8%
Open Space	14.47	13.75	-	-	-	2.6%
Public Landscape Lot (Lots R-MM)	-	6.69	-	-	-	1.3%
Private Landscape Lot (Lots NN-FFF)	-	2.96	-	-	-	0.6%
Subtotal	*252.75*	*257.91*	-	-	-	*48.8%*
Roads						
Private Drive (Lots 1-26)	-	1.01	-	-		0.2%
Private Right-of-Way (Lots 27 & 28)	-	28.16	-	-		5.3%
Minor Right-of-Way	-	31.67	-	-		6.0%
Major Right-of-Way	15.34	15.34	-	-		2.9%
Subtotal	*15.34*	*76.18*	-	-	-	*14.4%*
TOTAL	**530.06**	**530.06**	**1,375 single family and up to 120 multifamily**	**66,000 to 73,000**	**2.82**	**100.0%**

Residential

The project includes three primary residential components: an unrestricted single family community, an age-restricted single family community, and a mixed use development.

Single Family (Unrestricted)

The single family community, comprised of Villages 1 through 11, is located in the northwest area of the project site, abutting residential neighborhoods to the north and Rancho Cordova Parkway to the west. This area would include 686 single family residences within 11 residential neighborhoods. Village 1 would have 91 residential lots with a typical dimension of 60' by 105'

and a typical size of 6,300 square feet (s.f.). Villages 2 and 11 would have 178 residential lots with a typical dimension of 50' by 105' and a typical size of 5,250 s.f. Villages 3 and 4 would have 137 residential lots with a typical dimension of 45' by 105' and a typical size of 4,725 s.f. Villages 5, 9, and 10 would have 114 residential lots with a typical dimension of 45' by 85' and a typical size of 3,910 s.f. Villages 6, 7, and 8 would have 166 residential lots with a typical dimension of 36' by 70' and a typical size of 2,520 s.f.

Single Family – Four Seasons Age-Restricted

The Four Seasons age-restricted single family community is located in the southeast portion of the project site, and borders the approved Sunridge Specific Plan to the south and east. The Four Seasons community is separated from the unrestricted single family community by the wetlands preserve that traverses the project site from the northeast to the southwest. Villages 12 and 21 would have 123 residential lots with a typical dimension of 60' by 105' and a typical size of 6,300 s.f. Villages 17 and 19 would have 140 residential lots with a typical dimension of 50' by 105' and a typical size of 5,250 s.f. Villages 14, 15, and 16 would have 265 residential lots with a typical dimension of 45' by 105' and a typical size of 4,725 s.f. Villages 13 and 20 would have 148 residential lots with a typical dimension of 52' by 64' and and a typical size of 3,328 s.f. Village 18 would have 13 residential lots with a typical lot size of 5,595 s.f. and varying lot dimensions. Additionally, a 20,000 s.f. to 27,000 s.f. community clubhouse would be developed in this area.

Residential and Commercial Mixed Use

A 13.56-acre residential mixed use parcel is located in the northwest portion of the site, near the entrances to the unrestricted single family community from Rancho Cordova Parkway. This parcel would accommodate approximately 46,000 s.f. of commercial uses and up to 120 multifamily units.

Open Space

The project would preserve approximately 199.76 acres as a nature preserve that would be deeded to a third-party conservation entity. The project includes approximately 14.8 acres of existing aquatic resources, including 1.85 acres of depressional seasonal wetlands, 9.97 acres of vernal pools, 1.15 acres of riverine seasonal wetlands, 1.53 acres of intermittent drainages, and 0.30 acres of drainage basin outfalls. The project applicant would incorporate protections for the preservation of wetland resources within the preserve, including preserve fencing, long-term funding and management of the preserve in perpetuity, and protection of the preserve from drainage and runoff generated from development areas through the construction of several detention basins throughout the site.

Recreation

Park and recreation facilities totaling 16.61 acres would be provided by the project. The project would use a combination of land dedication and in-lieu fees to comply with the requirements of Chapter 22.40 of the City of Rancho Zoning Ordinance.

Approximately 2.14 miles of public trails would be developed throughout the project site, as described below under Pedestrian and Bicycle Connectivity. See **Figure 4**. Trails along the

preserve boundaries would be designed in accordance with the South Sacramento Habitat Conservation Plan (SSHCP) standards.

As part of the 16.61 acres of recreational facilities, a public park (10.18 net acres) would be provided within the single family (unrestricted) community. The utility corridor would be located along the eastern boundary of the park.

Within the age-restricted portion of the project, approximately 6.43 acres would be dedicated for recreational purposes. The recreation center (5.03 acres) would include a clubhouse serving as a recreation, community gathering, activity, and information hub for residents. A separate 1.4-acre community garden would be provided within the age-restricted community. In addition, multiple paseos would be provided throughout the age-restricted community to provide connectivity and off-road walkability.

Circulation

Vehicle Circulation
On-site infrastructure associated with the project would include the construction of internal and external access roads and a network of bicycle and pedestrian trails as shown in **Figure 4**. Primary access would be from Rancho Cordova Parkway. The project would provide for future connections to an extension of Chrysanthy Boulevard east of the project site.

Rancho Cordova Parkway would be constructed as a minor arterial roadway with an exception along existing and proposed nature preserves. Portions of the roadway along existing and proposed nature preserves would be constructed with an attached sidewalk, as is currently constructed at the western side of the road, and an eight-foot-wide divided median landscaped with trees and shrubs. The primary entrance to the project site at the intersection of Chrysanthy Boulevard and Rancho Cordova Parkway would be controlled by a four-way stop or traffic signal. A second right-in, right-out entrance from Rancho Cordova Parkway would be located to the south of the primary entrance.

Chrysanthy Boulevard would be constructed as a minor arterial with 74-foot right-of-way and a 15-foot landscape corridor for landscaping and sidewalks.

North Campus Road, located along the southern boundary of the age-restricted community, would include one travel lane and frontage improvements along the residential portion of the project site.

Interior streets serving the residential communities would have attached sidewalks and rolled curbs along residential frontages.

Two emergency vehicle access points would be located at the southern ends of Streets MM and GG. Access at these locations would provide full access for emergency vehicles, but would be limited to right-out only for residents

Pedestrian and Bicycle Connectivity
A bicycle/pedestrian trail located along the existing utility corridor would connect to an existing trail located north of the site and would provide connections to the two trails located along the preserve. On the northern side of Chrysanthy Boulevard, a preserve trail would extend from the bike/pedestrian trail located within the utility corridor along Chrysanthy Boulevard, then would follow the northern boundary of the age-restricted community to the eastern border of the project site. A southern preserve trail would extend along Rancho Cordova Parkway, south of the entrances to the project site, and would cross the project site south of the unrestricted community, connecting with Chrysanthy Boulevard in two locations, then following the western edge of the age-restricted community to the south.

In addition, the project will include sidewalks, stop signs, standard pedestrian crossing warning signs, lane striping to provide a bicycle lane along applicable roadways, bicycle parking, signs to identify pedestrian and bicycle paths, and pedestrian signal heads. Sidewalks will be constructed as part of the frontage improvements along all new roadway construction for Jaeger Road/Rancho Cordova Parkway and Chrysanthy Boulevard in conformance with applicable design standards.

Infrastructure and Public Services
Water
The project is located within the Sacramento County Water Agency (SCWA) Zone 40 water service area. The project would connect to SCWA existing water supply infrastructure located at the intersection of Rancho Cordova Parkway and Chrysanthy Boulevard. New water distribution pipelines and valves would be provided within the project site, primarily within the roadway right-of-ways, to serve the proposed development.

Sewer
The project is located within the Sacramento Area Sewer District (SASD) and Sacramento Regional County Sanitation District (RegionalSan) service areas. New sewer conveyance pipelines would be provided within the project site, primarily within the roadway right-of-ways, to serve the proposed development. The project would connect to existing SASD sewer infrastructure located at the intersection of Rancho Cordova Parkway and Chrysanthy Boulevard. Sewer flows from the project would be conveyed by SASD facilities to RegionalSan interceptor, collector, and trunk facilities and would then be conveyed to the Sacramento Regional Wastewater Treatment Plant for treatment.

Off-site improvements may include upgrades to the existing sewer lift station that serves the eastern part of Rancho Cordova.

Drainage
The project would include development of on-site drainage and water quality basins to accommodate post-construction peak stormwater flows and provide for water quality treatment. The on-site system would connect to the City's stormwater drainage system.

Electric, Natural Gas, and Solid Waste
Electricity would be provided by SMUD. Natural gas would be provided by PG&E. Solid waste collection would be provided by Republic Services.

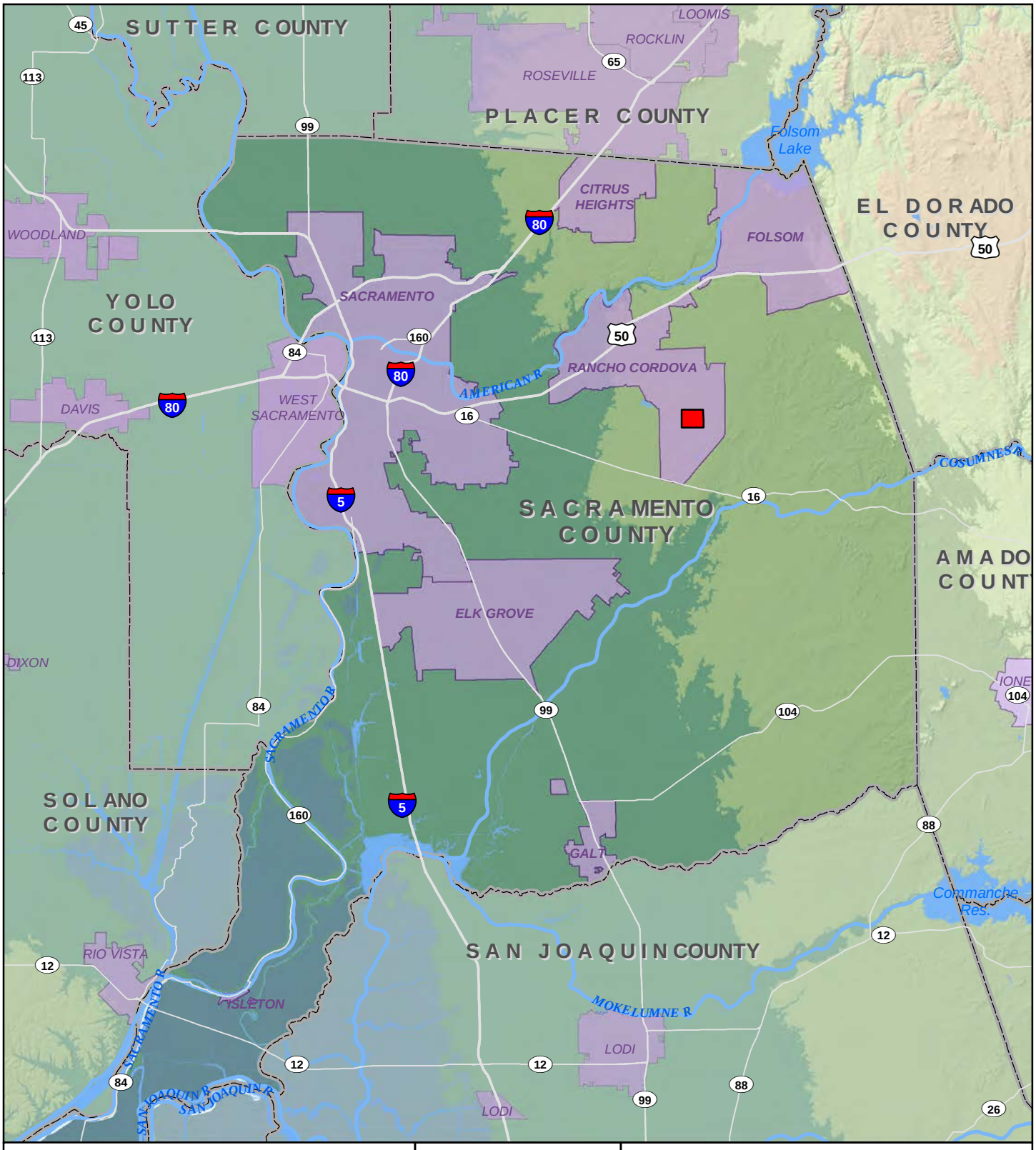
Public Services
Police services would be provided by the City of Rancho Cordova. Fire protection would be provided by Sacramento Metropolitan Fire District. Public school services would be provided by Elk Grove Unified School District.

General Plan Amendment and Rezone
The project site is currently designated Urban Development Area (UDA) in the City's General Plan and is currently zoned Agriculture, 80-Acre Minimum (AG-80). The entire project site would be rezoned from AG-80 to Special Planning Area (SPA). Table 2 summarizes the proposed General Plan land use designations:

Table 2: General Plan Land Use Designations

LAND USE DESIGNATION	EXISTING	PROPOSED	DIFFERENCE
Urban Development Area (UDA)	530.1	--	- 530.1
Low Density Residential (LDR)	--	181.9	+ 181.9
Medium Density Residential (MDR)	--	80.9	+ 80.9
Residential Mixed Use (RMU)	--	6.3	+ 6.3
Commercial Mixed Use (CMU)	--	7.2	+ 7.2
Parks and Open Space (P/OS)	--	16.2	+ 16.2
Natural Resources (NR)	--	222.0	+ 222.0
Right-of-Way	--	15.6	+ 15.6

Special Planning Area
The Ranch Special Planning Area (SPA) zoning will establish development standards and design guidelines to ensure quality and consistency in the design and implementation of the project. The SPA document is regulatory in nature and will serve as zoning for the project site. Development plans, subdivision maps, and site plans for the project must be consistent with both the SPA and the City of Rancho Cordova General Plan.



Legend

- Project Location
- City Areas
- County Boundary

Sources: CalAtlas; Yolo County; Sacramento County, Solano County; Placer County; San Joaquin County. Map date: April 23, 2018.

N

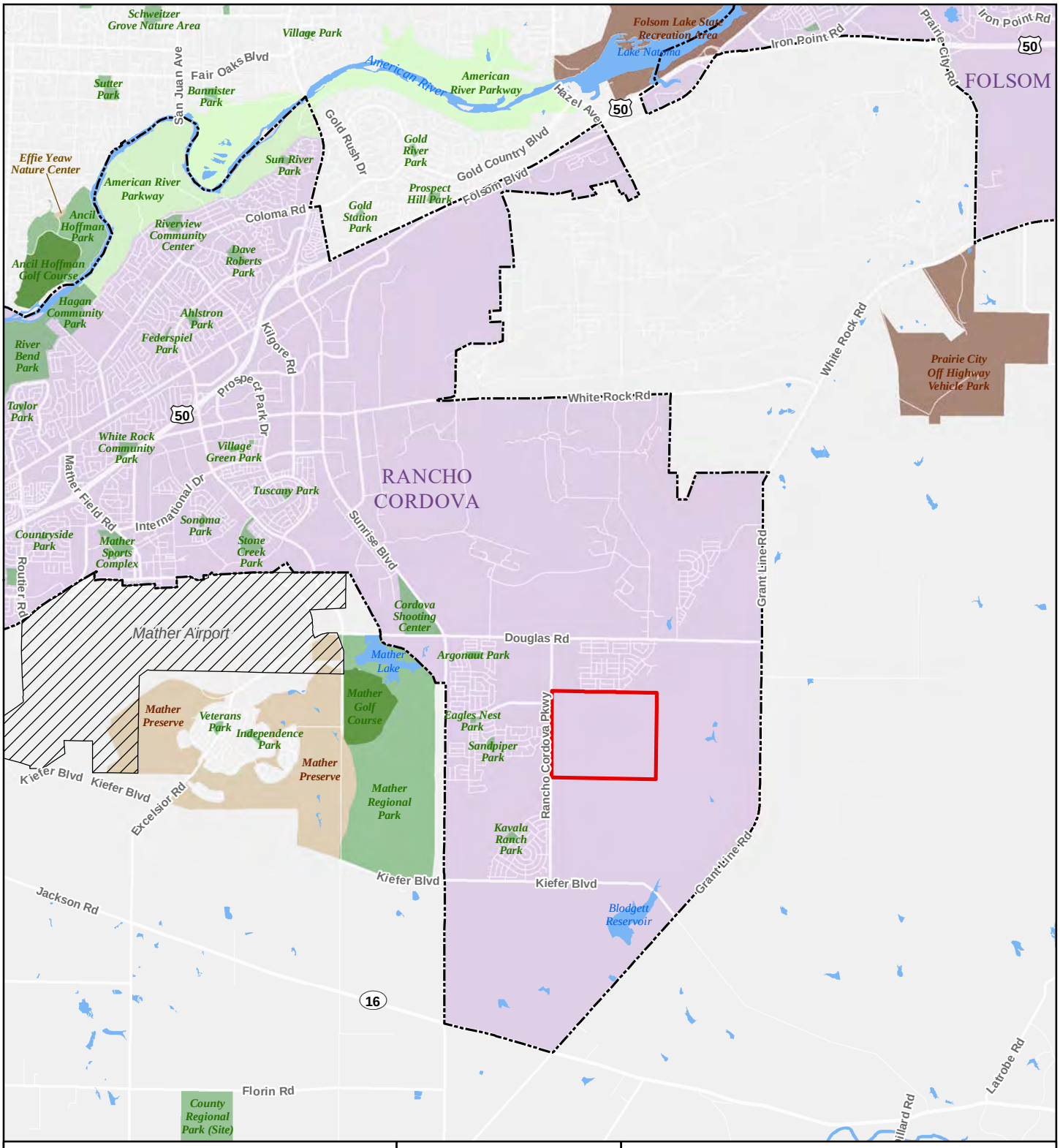
0 2½ 5

Miles

THE RANCH
SACRAMENTO COUNTY, CALIFORNIA

Figure 1. Regional Location Map

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm



Legend

- Project Location (APN 067-004-0008)
- City Area
- Airport
- Park
- Parkway
- Golf Course
- Ecological Preserve/Nature Area
- State Recreation Area

Data sources: Sacramento County GIS; Map date: April 25, 2018.

N

0 ½ 1

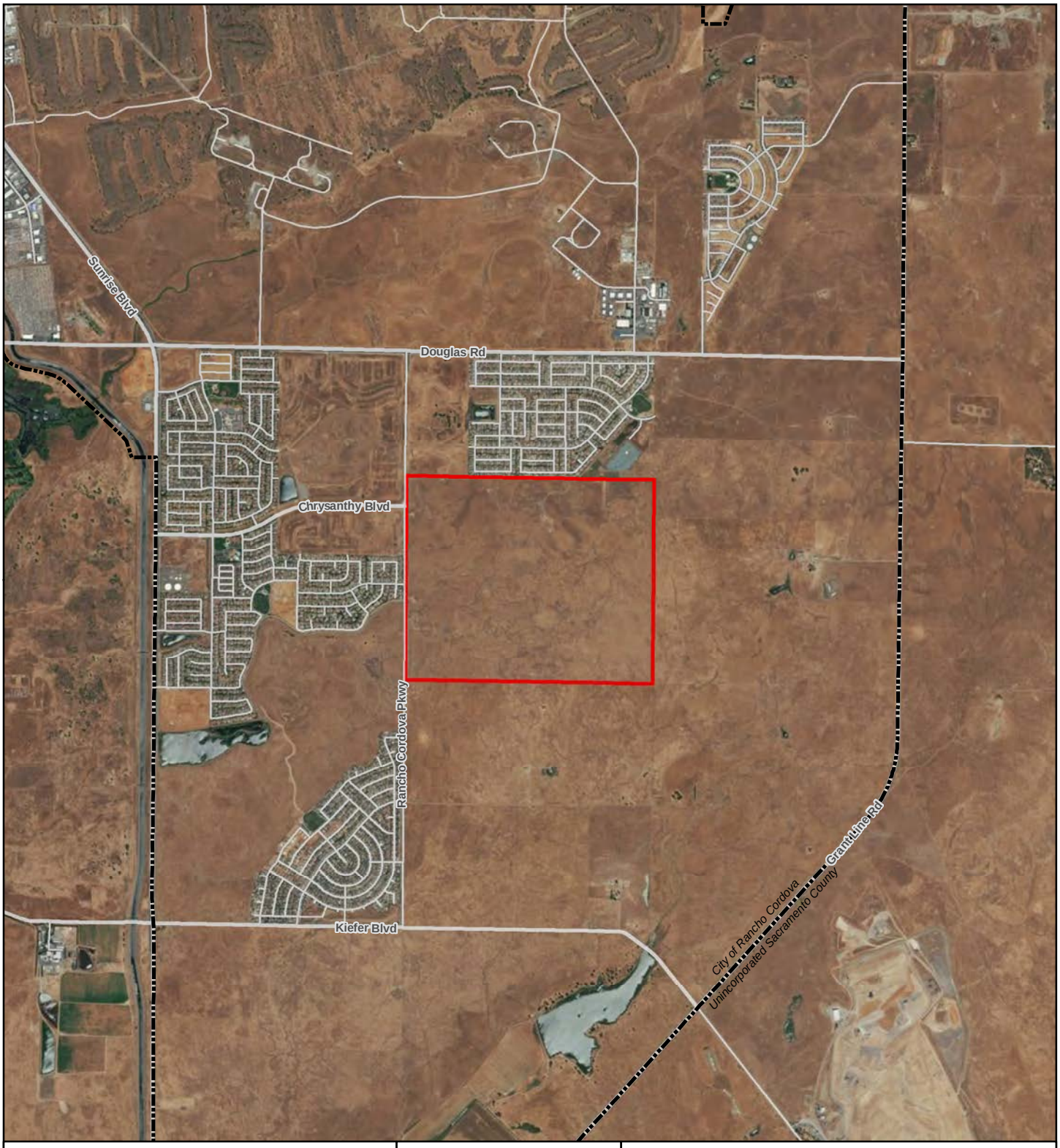
Miles

1:85,000

THE RANCH
SACRAMENTO COUNTY, CALIFORNIA

Figure 2. Project Vicinity Map

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm



Legend

- Project Location (APN 067-004-0008)
- Rancho Cordova City Boundary

N

0 750 1,500
Feet

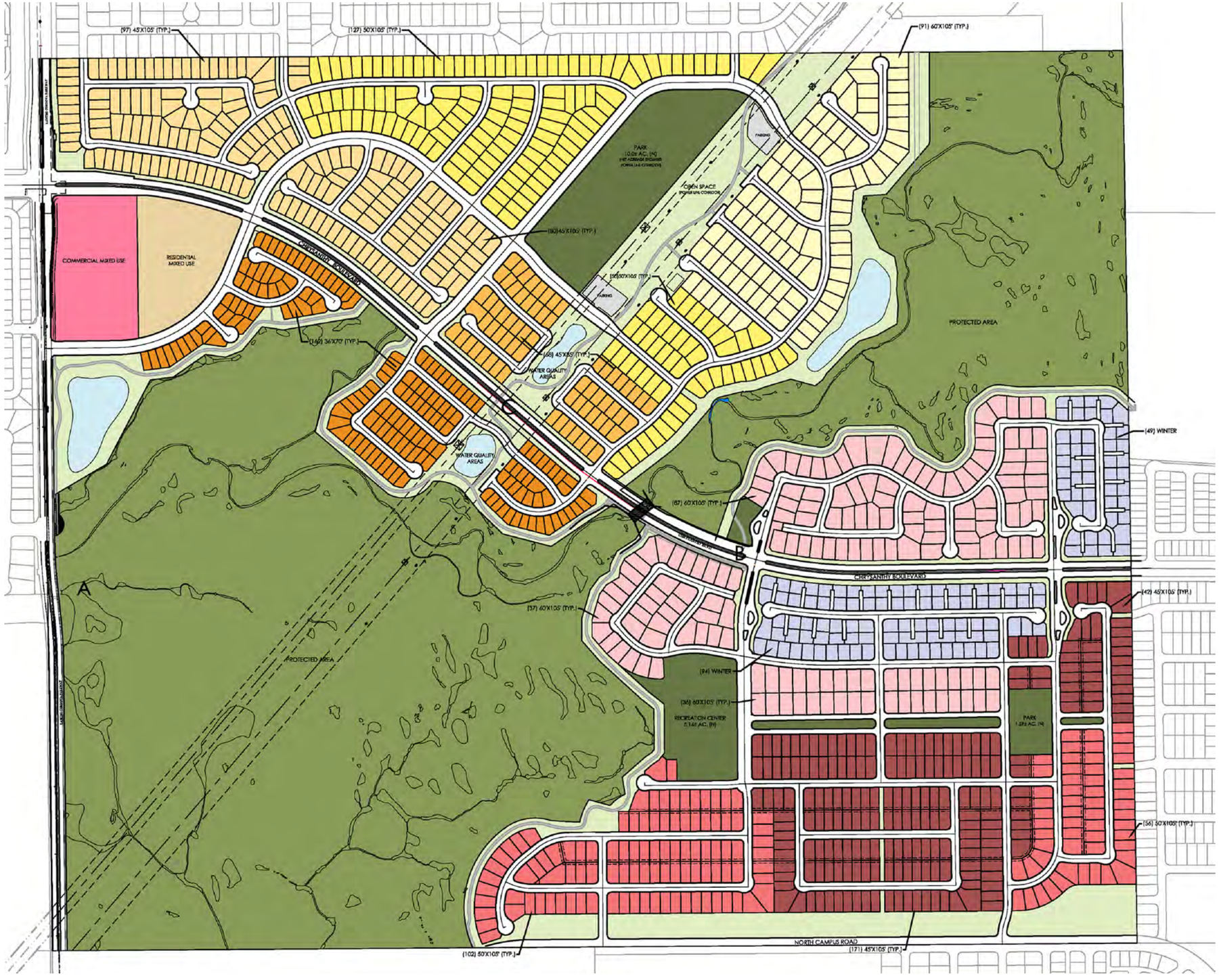
1:36,000

Data sources: Sacramento County GIS; ArcGIS Online World Imagery Map Service. Map date: April 25, 2018.

THE RANCH
SACRAMENTO COUNTY, CALIFORNIA

Figure 3. Aerial View of Project Site

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm



THE RANCH
SACRAMENTO COUNTY, CALIFORNIA

Figure 4. Site Plan

Land Use

- 60' x 105' (TYP.)
- 50' x 105' (TYP.)
- 45' x 105' (TYP.)
- 45' x 85' (TYP.)
- 36' 70' (TYP.)

Active Adult

- 60' x 105' (TYP.)
- 50' x 105' (TYP.)
- 45' x 105' (TYP)
- Winter (4-PACK)

A, B, C refers to Planned Pedestrian Crossings

N

0 250 500
Feet

1:6,000

Data sources: Sacramento County; Wood Rogers, The Ranch, Site Plan, 4/25/2018. Map date: June 27, 2018.

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

D. REQUIRED APPROVALS

City of Rancho Cordova: Actions that would be required from the City Council, Planning Commission, and/or City staff may include, but is not limited to, the following:

- Approval of the General Plan Amendment from UDA to LDR, MDR, RMU, CMU, P/OS, and NR;
- Approval of the Community Plan Amendment from UDA to LDR, MDR, RMU, CMU, P/OS, and NR;
- Approval of the Rezone from AG-80 (County) to SPA (City);
- Approval of the The Ranch Special Planning Area regulatory document;
- Approval of the Tentative Subdivision Map; and
- Approval of design review, improvement plans, and building permits.

Other discretionary approvals that may be required by other governmental agencies may include, but are not limited to, the following:

- Take permits from the U.S., Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) under the Federal and State Endangered Species Acts;
- Water quality permitting (NPDES and water quality certifications) under the Clean Water Act by the Central Valley Regional Water Quality Control Board;
- Wetland fill permits under Section 404 of the Clean Water Act by the U.S. Army Corps of Engineers;
- Approval of infrastructure details for water supply facilities by the Sacramento County Water Agency; and
- Approval of infrastructure details for wastewater collection facilities by Sacramento Area Sanitation District.

E. PROJECT BACKGROUND

The Ranch project site has been the subject of previous environmental review. The project site is located within the Sunrise Douglas Community Plan and Sunridge Specific Plan areas, which were approved by Sacramento County prior to the incorporation of the City.

In 2006, the City certified the Preserve at Sunridge EIR and subsequently approved entitlements for the Preserve at Sunridge project. The Preserve at Sunridge project was proposed on the same site as the currently proposed The Ranch project. The Preserve at Sunridge included 2,703 dwelling units (both single family and multi-family residential) commercial and office, neighborhood parks, an elementary school, detention/water quality basins, an open space/wetland preserve, pedestrian facilities, bikeways, and parkways/drainage corridors. The project included a 92.4-acre wetland preserve located at the southwest corner of the project site.
On September 5, 2006 following the City's approval of the Preserve at Sunridge project, the California Native Plant Society (CNPS) filed a petition for writ of mandate in Sacramento County Superior Court seeking to set aside the City's actions. The case was litigated in Superior

Court and appealed to the Court of Appeal, Third Appellate District. On March 24, 2009, the Third Appellate District filed an opinion upholding the judgment of the Superior Court with respect to the determination of the project's inconsistency with the City's General Plan regarding interconnection of preserved habitat areas that support special-status plant and animal species, and regarding mitigation on such species. The case was sent back to the Sacramento County Superior Court, which entered final judgment issuing a peremptory writ of mandate on September 28, 2009. The writ of mandate nullified all of the City's approvals for the project, including certification of the EIR.

During the course of the court proceedings, ownership of the project site was transferred to K. Hovnanian Communities. The project was redesigned and resubmitted as the Ranch at Sunridge to the City in 2010. In 2011, the City issued a Notice of Preparation for an Environmental Impact Report/Environmental Impact Statement. The EIR/EIS was not completed.

The project Applicant Team has submitted an application to the U.S. Army Corps of Engineers for a Clean Water Act (CWA) Section 404 permit associated with discharges of fill material into waters of the United States for fill of 6.37 acres of waters of the United States and temporary impacts to approximately 0.01 acres of waters of the United States. The permit is being processed by the U.S. Army Corps of Engineers and a determination by the U.S. Army Corps of Engineers is anticipated in 2018.

F. POTENTIAL ENVIRONMENTAL EFFECTS

See the Initial Study for discussion of potential environmental effects of the proposed project, including potential impacts that will be analyzed in the Draft EIR.

From: Wood, Dylan A@Wildlife [mailto:Dylan.A.Wood@wildlife.ca.gov]
Sent: Monday, August 06, 2018 5:09 PM
To: June Cowles
Cc: Wildlife R2 CEQA
Subject: Comments on the Notice of Preparation for The Ranch (SCH# 2018072011)

Mrs. Cowles,

The California Department of Fish and Wildlife (CDFW) received and reviewed the **Notice of Preparation** for **The Ranch** (Project) in Sacramento County pursuant the California Environmental Quality Act (CEQA).

CDFW offers the comments and recommendations below to assist Lead Agency in adequately identifying and, where appropriate, mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources.

The South Sacramento Habitat Conservation Plan (Plan) is nearing implementation. As a participating entity with a proposed project in the Plan area, CDFW recommends the draft Environmental Impact Report prepared by the Lead Agency be consistent with the Plan.

Notification to CDFW is required, pursuant to Fish and Game Code section 1602 if a Project proposes activities that will substantially divert or obstruct the natural flow of water; substantially change or use any material from the bed, channel or bank of any river, stream, or lake; or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. The Project description has proposed activities that may be subject to Notification under Fish and Game Code section 1602. Some of these activities include but are not limited to the grading/filling or crossing of existing hydrologic features at the Project's location. CDFW approval of projects subject to Notification under Fish and Game Code section 1602 is facilitated when the environmental documentation discloses the impacts to and proposes measures to avoid, minimize, and mitigate impacts to perennial, intermittent, and ephemeral rivers, streams, and lakes, other features, and any associated biological resources/habitats present within the Project study area. CDFW relies on the Lead Agency environmental analysis when acting as a responsible agency if it is necessary to issue a Lake or Streambed Alteration Agreement for the Project. Addressing the Department comments ensures that the environmental document appropriately addresses project impacts and facilitating the approval of the Project. Please visit https://www.wildlife.ca.gov/Conservation/LSA for more information about obtaining a Lake or Streambed Alteration Agreement.

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the project that may affect California fish and wildlife. I am available for consultation regarding biological resources and strategies to minimize and/or mitigate impacts.

Sincerely,

Dylan Wood

California Department of Fish and Wildlife

Environmental Scientist

(916) 358-2384

Every Californian should conserve water. Find out how at:

SaveOurWater.com · Drought.CA.gov

Cordova Recreation & Park District

August 3, 2018

June Cowles, Senior Planner
City of Ranch Cordova
2729 Prospect Park Drive
Rancho Cordova, CA 95670

RE: The Ranch Project in the City of Rancho Cordova
Notice of Preparation dated July 6, 2018
Comments by Cordova Recreation and Park District

Dear Ms. Cowles,

Thank you for the opportunity to comment on the Notice of Preparation for The Ranch project. We have taken the opportunity to review the material gathered thus far and offer the following comments.

Aesthetics
Given that the Cordova Recreation and Parks District (the District) has not completed the programming for the community park, shown as Lot C on the tentative subdivision map, please evaluate the potential impacts from lighting potential sports fields at night. In particular, the impacts from the park onto the surrounding residential area.

Hazards and Hazardous Materials
While it is complementary to place the community park adjacent to the easement for the transmission lines to gather further open space, the impact of the transmission lines on park visitors should be evaluated. Please evaluate the impact of the electric and magnetic field radiation (EMF) from the transmission lines onto park users.

Hydrology and Water Quality
Constructed park facilities including programmed sport fields should be above the 100 year flood plain. The District does not accept Quimby park land encumbered with utility and storm drainage basins.

The project technical studies should demonstrate there will be adequate domestic water into the future sufficient to irrigate athletic fields and provide turf in both neighborhood and community parks as a public resource in perpetuity. The District will consider connection to alternative water sources in the future on a case by case basis consistent with new conservation and codes requirements.

Land Use
The District's adopted Level of Service (LOS) states that the required Quimby park land dedication is 5 acres/1000 residents. District Staff has previously indicated that the Quimby park land dedication

required for this project is 17.01 acres. Based upon the District's adopted Quimby park land allocation, The Ranch must provide 8.16 acres for neighborhood parks and 8.85 acres for the community park (with a 15 acre minimum preference).

The Ranch's Land Use Plan (Table 1) contained within the Notice of Preparation, indicates that the proposed project contains a total of 16.61 (net) acres to be parks. The proposed project includes 6.43 acres of neighborhood parkland and 10.18 acres of community park land, for a total of 16.61 acres. This is a deficiency of 0.40 acres to meet the project's Quimby Act requirement. The applicant will have to mitigate for the parkland deficiency. The District Staff have indicated that the neighborhood parkland requirement can be met with the private park facilities within the age-restricted & gated portion of the project, subject to approval by the CRPD board. The remaining acreage will be for a community park and must be dedicated to the Cordova Recreation and Park District.

The District does not accept Quimby park land encumbered with utility easements, storm drainage basins, wetlands and habitat areas that restrict development for recreational purposes. Where adjacencies of encumbered parcels exist the District is open to discussions about joint use agency programming and maintenance of encumbered parcels where adequate funding is provided in perpetuity.

Impacts of proposed parks on surrounding land uses should consider the full range of amenities that could be place on a park site as listed in Tables 3, 4 and 5 in the District's Cordova Recreation and Park District Park Impact Fee Nexus Study adopted April 8, 2014. Community Park facilities and District-wide facilities are eligible for placement in any community park.

Noise

Noise generated by the Park and Recreational Activities should be evaluated. In particular, the noise generated the sports activities in the community park onto the surrounding residential neighborhood and the outdoor activities taking place within the recreational center on Lot A onto those surrounding residences.

Traffic and Transportation

District standards state community parks should have street frontage on two sides where a high school property can substitute for one street and neighborhood parks have street frontage on three sides where elementary school property can be substituted for one street. The proposed project appears to meet this requirement.

Neighborhood park sites require on-street parking. Community park sites typically contain off-street parking but also benefit from the additional capacity provided by on-street parking.

Vehicular, pedestrian and multi-modal traffic impacts generated by park use should be evaluated, particularly for the Community Park. Placement of traffic signals and pedestrian crosswalks should be considered where community park facilities may generate significant volumes of traffic.

Soils

The Draft Environmental Impact Report (DEIR) should address the suitability of soil on proposed park sites to sustain active parks and the need to import fertile soils and/or provide soil amendments to meet District standards. The Geotechnical Engineering Report prepared for the development project should

include borings/test pits for park sites and provide discussion and recommendations relative to park site development.

The District appreciates the County's commitment to planning environmentally responsible and sustainable communities and we look forward to future engagement in this project. Please continue to forward documentation related to this project to the District. Please don't hesitate to contact me if you have any questions.

Sincerely,

Laura L. Taylor, ASLA
Park Planning and Development Manager
Cordova Recreation and Park District

CC: Patrick Larkin, District Administrator for Cordova Recreation and Park District

RECEIVED
AUG 02 2018
BY:

CALIFORNIA
Water Boards

Edmund G. Brown Jr.
Governor

Matthew Rodriquez
Secretary for
Environmental Protection

Central Valley Regional Water Quality Control Board

30 July 2018

June Cowles
City of Rancho Cordova
2729 Prospect Park Drive
Rancho Cordova, CA 95670

CERTIFIED MAIL
91 7199 9991 7039 6992 6496

COMMENTS TO REQUEST FOR REVIEW FOR THE NOTICE OF PREPARATION FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, THE RANCH PROJECT, SCH# 2018072011, SACRAMENTO COUNTY

Pursuant to the State Clearinghouse's 6 July 2018 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Notice of Preparation for the Draft Environment Impact Report* for the Ranch Project, located in Sacramento County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases,

the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues.

For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:
http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/.

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Policy is available on page IV-15.01 at:
http://www.waterboards.ca.gov/centralvalleywater_issues/basin_plans/sacsjr.pdf

In part it states:

> *Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.*
>
> *This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.*

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan

(SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml.

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits[1]

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/.

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water

[1] Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACOE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

Waste Discharge Requirements – Discharges to Waters of the State

If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml.

Dewatering Permit

If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Risk General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Risk Waiver)
R5-2013-0145. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Risk General Order and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Risk Waiver and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2013-0145_res.pdf

Regulatory Compliance for Commercially Irrigated Agriculture

If the property will be used for commercial irrigated agricultural, the discharger will be required to obtain regulatory coverage under the Irrigated Lands Regulatory Program. There are two options to comply:

1. **Obtain Coverage Under a Coalition Group.** Join the local Coalition Group that supports land owners with the implementation of the Irrigated Lands Regulatory Program. The Coalition Group conducts water quality monitoring and reporting to the Central Valley Water Board on behalf of its growers. The Coalition Groups charge an annual membership fee, which varies by Coalition Group. To find the Coalition Group in your area, visit the Central Valley Water Board's website at: http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/for_growers/apply_coalition_group/index.shtml or contact water board staff at (916) 464-4611 or via email at IrrLands@waterboards.ca.gov.

2. **Obtain Coverage Under the General Waste Discharge Requirements for Individual Growers, General Order R5-2013-0100**. Dischargers not participating in a third-party group (Coalition) are regulated individually. Depending on the specific site conditions, growers may be required to monitor runoff from their property, install monitoring wells, and submit a notice of intent, farm plan, and other action plans regarding their actions to comply with their General Order. Yearly costs would include State administrative fees (for example, annual fees for farm sizes from 10-100 acres are currently $1,084 + $6.70/Acre); the cost to prepare annual monitoring reports; and water quality monitoring costs. To enroll as an Individual Discharger under the Irrigated Lands Regulatory Program, call the Central Valley Water Board phone line at (916) 464-4611 or e-mail board staff at IrrLands@waterboards.ca.gov.

Low or Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Dewatering and Other Low Threat Discharges to Surface Waters* (Low Threat General Order) or the General Order for *Limited Threat Discharges of Treated/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and Other Limited Threat Wastewaters to Surface Water* (Limited Threat General Order). A complete application must be submitted to the Central Valley Water Board to obtain coverage under these General NPDES permits.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0074.pdf

For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0073.pdf

NPDES Permit

If the proposed project discharges waste that could affect the quality of surface waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit.

For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit3.shtml

If you have questions regarding these comments, please contact me at (916) 464-4644 or Stephanie.Tadlock@waterboards.ca.gov.

Stephanie Tadlock
Senior Environmental Scientist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

SACRAMENTO AREA SEWER DISTRICT
SERVING YOU 24/7

10060 Goethe Road
Sacramento, CA 95827-3553
Tel 916.876.6000
Fax 916.876.6160
www.sacsewer.com

August 6, 2018

June Cowles
City of Rancho Cordova
2729 Prospect Park Drive
Rancho Cordova, CA 95670

Subject: **Notice of Preparation of an Environmental Impact Report – The Ranch Project**
APN: **067-004-0008**

Dear Ms. Cowles,

The Sacramento Area Sewer District (SASD) and the Sacramento County Regional Sanitation District (Regional San) have reviewed the Notice of Preparation (NOP) of the Environmental Impact Report (EIR) for the subject project.

The project site consists of approximately 530 acres located in the City of Rancho Cordova city limits. The project site is bound by existing single-family residential uses and Douglas Road to the north, vacant land and Grant Line Road to the east, vacant land and Kiefer Boulevard to the south, and Rancho Cordova Parkway, single family residential, and vacant land on the west.

The objectives of the proposed project include development of the approximately 530 acre site with: 230.81 acres of residential units, 13.56 mixed use residential and commercial, 17.6 acres of parks and community facilities, 252.75 acres of open space, and 15.34 acres of roads.

The subject property is within the boundaries of SASD, Regional San, and the Urban Service Boundaries. The ultimate plan for conveyance and treatment of the subject property shall be by SASD's Sewer System Capacity Plan 2010 Update (SCP).

In order for SASD and Regional to more fully evaluate the subject project's impact on their systems, a sewer study will be needed. This study shall demonstrate the permanent connection(s) to SASD's and Regional San's system. The sewer study shall demonstrate the quantity of discharge and any "flow through sewage" along with appropriate pipe sizes and related appurtenances from this subject and other upstream areas and shall be done in accordance with SASDs' most recent "Minimum Sewer Study Requirements". The study shall be done on a no "Shed-Shift" basis unless approved by SASD in advance and in compliance with the SASD's Standards and Specifications.

We expect that if the project is subject to currently established policies, ordinances, fees, and to conditions of approval, then mitigation measures within the EIR will adequately address the sewage aspects of the project. We anticipate a less than significant impact to the sewage facilities due to mitigation as defined by the SCP.

Board of Directors
Representing:
County of Sacramento | City of Citrus Heights
City of Elk Grove | City of Folsom
City of Rancho Cordova | City of Sacramento

Prabhakar Somavarapu
District Engineer
Rosemary Clark
Director of Operations
Christoph Dobson
Director of Policy & Planning
David O'Toole
Director of Internal Services
Joseph Maestretti
Chief Financial Officer
Nicole Coleman
Public Affairs Manager

If you have any questions regarding these comments, please call me at 916-876-6336 or Dillon Miele at 916-876-6480.

Sincerely,

Yadira Lewis

Yadira Lewis
SASD Development Services

Elise Carroll

From: Beth Thompson <bthompson@denovoplanning.com>
Sent: Monday, July 16, 2018 5:13 PM
To: Elise Carroll
Subject: Fwd: FW: Notice of Preparation for The Ranch project
Attachments: NOP DEIR for Ranch at Sunridge.doc; RE: The Ranch GPA, RZ, TSM, DA, Phasing DD9725 (1.11 MB)

The Ranch NOP comment

Beth Thompson | Principal
De Novo Planning Group | www.denovoplanning.com
bthompson@denovoplanning.com | 916.812.7927
Northern California | 1020 Suncast Lane #106 | El Dorado Hills, CA 95762
Southern California | 180 East Main Street #108 | Tustin, CA 92780

---------- Forwarded message ----------
From: **June Cowles** <jcowles@cityofranchocordova.org>
Date: Mon, Jul 16, 2018 at 2:23 PM
Subject: FW: Notice of Preparation for The Ranch project
To: Beth Thompson <bthompson@denovoplanning.com>
Cc: "Patrick Hindmarsh (External)" <phindmarsh@mbakerintl.com>, Rupa Somavarapu <rsomavarapu@cityofranchocordova.org>, Mark Thomas <mthomas@cityofranchocordova.org>

Please see the attachment and below.

Ensuring you received this

From: Darrow. Matthew [mailto:DarrowM@SacCounty.NET]
Sent: Sunday, July 08, 2018 12:47 PM
To: Kelly Whitman; June Cowles
Cc: Darcy Goulart; Elizabeth Sparkman; Blank. Dean
Subject: RE: Notice of Preparation for The Ranch project

This e-mail is from an external source. Please do not open attachments or click links from an unknown or suspicious origin.

Kelly and June,

Thanks for the opportunity to comment. I've reattached our response from February 2018 which included the original NOP comment letter from 2011. These comments still generally apply. Please let me know if you have any questions.

Thanks,

Matt

From: Kelly Whitman [mailto:kwhitman@cityofranchocordova.org]
Sent: Friday, July 06, 2018 9:17 AM
To: 'dwilson@elkgrovecity.org'; Moffitt. Leighann; 'tpace@cityofsacramento.org'; 'rdevore@cityofsacramento.org'; 'rsherman@citrusheights.net'; 'pjohns@folsom.ca.us'; Adam Egbert; Adam Lindgren; agcom@saccounty.net; Albert Stricker; Amanda Norton; Singh. Amandeep; Amy Nygren (nygren.amy@metrofire.ca.gov); Audie.Foster@amwater.com; Benjamin Turner; Beth Tincher (beth.tincher@smud.org); Brian Bailey; Caltrans, District 3, Planning South; cholm@walksacramento.org; Hunley. Christopher; Chris Pace (pacec@saccounty.net); Chrishana Fields ; Christina James; Curt Haven; Abhar, Cyrus (MSA); Darcy Goulart; Darrow. Matthew; Elizabeth Sparkman; 'eric_fredericks@dot.ca.gov' (eric_fredericks@dot.ca.gov); fordc@saccounty.net; gchew@sacog.org; gwickham@fcusd.org; hockerl@saccounty.net; Jason Smalley (smalleyj@saccounty.net); Jenae Callison; Jennifer Hargrove; Jim Brown (jim@sacbike.org); Jim Dobson (jimd@sac-city.k12.ca.us); jlaurain@adamsbroadwell.com; Cuffe. Joe (MSA); John Rogers (rogersjo@saccounty.net); Kacey Lizon (klizon@sacog.org); Kate Cook (External); kenneth_sanchez@fws.gov; Kim Juran; 'larry_brohman@dot.ca.gov' (larry_brohman@dot.ca.gov); Liisa Behrends; Lisa Barsdale (barsdale.lisa@metrofire.ca.gov); Lori Murphy; Leah Pertl (MSA); ltaylor@crpd.com; Marilyn Phelps; Mary Pakenham-Walsh; Matt Buland; Melissa Brockman-Vignau (mbrockman@usbr.gov); Michelle Mingay; mike@cecwest.com; Molly Wright (mwright@airquality.org); Nancy Quaresma ; Patrick Hindmarsh (External); Peck Ha; Rachel Del Rio (rachel.delrio@smud.org); Richard Blackmarr (blackmarr@saccounty.net); Ryan Becker; Sacramento Metro Fire (Front Office Staff) (crrdstaff@metrofire.ca.gov); SASD Development Services; Sean Twilla (seantwilla@gswater.com); Smud ; Stefan Heisler; Steve Harriman; Tameem Samimi; Teresa Tholen in Facilities; Aldama. Tina (SacSheriff); Traci Canfield ; Victor Ramos; whughes@smud.org
Cc: June Cowles; Darcy Goulart; Elizabeth Sparkman
Subject: Notice of Preparation for The Ranch project

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE RANCH PROJECT

LEAD AGENCY: City of Rancho Cordova Planning Department

June Cowles, (916) 851-8756

2729 Prospect Park Drive

Rancho Cordova, CA 95670

The City of Rancho Cordova (as Lead Agency, hereinafter City) intends to prepare an Environmental Impact Report (EIR) for The Ranch project (Project). In accordance with Section 15082 of the CEQA Guidelines, the City has prepared this Notice of Preparation (NOP) to provide responsible agencies and other interested parties with sufficient information describing the Project and its potential environmental effects.

The determination to prepare an EIR was made by the City following preliminary review of the Project. An Initial Study has been prepared, pursuant to CEQA Guidelines Section 15063, which identifies the anticipated environmental effects of the project. The Initial Study may be viewed at the City of Rancho Cordova City Hall, 2729 Prospect Park Drive; or via

the internet at http://www.cityofranchocordova.org/government/planning/environmental-review/environmental-documents.

Project Overview

The project is a 530-acre residential community, including approximately 1,375 single family residential units (including 689 age restricted units, up to 120 multifamily units, a 6 acre commercial parcel, a community clubhouse, a park and trail system, open space and supporting infrastructure.

Public Comment Opportunity

As specified by the CEQA Guidelines, the Notice of Preparation shall be circulated for a 30-day review period. The comment period runs from **Friday, July 6, 2018 to Monday, August 6, 2018**. The City welcomes public input during this review. In the event that no response or request for additional time is received by any responsible agency by the end of the review period, the Lead Agency may presume that the responsible agency has no response [CEQA Guidelines Section 15082(b(2)].

Comments may be submitted in person at the Scoping Meeting or in writing during the review period and addressed to:

City of Rancho Cordova

Planning Department

c/o June Cowles

2729 Prospect Park Drive

Rancho Cordova, CA 95670

A Scoping Meeting will be held on **Thursday, July 26, 2018 at 5:30 p.m.** in the Rancho Cordova City Hall, American River South Room, located at 2729 Prospect Park Drive, Rancho Cordova, CA.

Kelly Whitman
City of Rancho Cordova
Planning Department
2729 Prospect Park Dr.
Rancho Cordova, CA 95670
(916) 851-8759
www.cityofranchocordova.org

County of Sacramento Email Disclaimer: This email and any attachments thereto may contain private, confidential, and privileged material for the sole use of the intended recipient. Any review, copying, or distribution of this email (or any attachments thereto) by other than the County of Sacramento or the intended recipient is strictly prohibited. If you are not the intended recipient, please contact the sender immediately and permanently delete the original and any copies of this email and any attachments thereto.

---------- Forwarded message ----------
From: "Darrow. Matthew" <DarrowM@saccounty.net>
To: Kelly Whitman <kwhitman@cityofranchocordova.org>
Cc: "Atwal. Kamal" <atwalk@saccounty.net>, "Blank. Dean" <blankd@saccounty.net>, "Elizabeth Sparkman (esparkman@cityofranchocordova.org)" <esparkman@cityofranchocordova.org>, "mthomas@cityofranchocordova.org" <mthomas@cityofranchocordova.org>
Bcc:
Date: Thu, 8 Feb 2018 16:48:48 +0000
Subject: RE: The Ranch GPA, RZ, TSM, DA, Phasing DD9725

Kelly,

Thanks for the email. I have a few comments. I see in our files we sent the attached comment letter on the NOP for the DEIR dated April 12, 2011 to the City. That's the last correspondence I see so I'm assuming this might have been on hold for a while. If I read the routing material correctly I see that a Traffic Impact Analysis was completed in 2017 by Kimley Horne and that an EIR will soon be prepared? I want to make sure the comments in the letter were incorporated into the traffic analysis. This project will most likely have impacts to existing and future county facilities along Grant Line Road and Sunrise Boulevard so I want to make sure those facilities were analyzed. Thanks for keeping us in the loop on this!

Thanks,

Matt

From: Kelly Whitman [mailto:kwhitman@cityofranchocordova.org]
Sent: Wednesday, February 07, 2018 4:50 PM
To: Adam Egbert; Adam Lindgren; agcom@saccounty.net; Albert Stricker; Amanda Norton; Singh. Amandeep; Amy Nygren (nygren.amy@metrofire.ca.gov); Audie.Foster@amwater.com; Benjamin Turner; Beth Tincher (beth.tincher@smud.org); Brian Bailey; Caltrans, District 3, Planning South; cholm@walksacramento.org; Hunley. Christopher; Pace. Chris; Chrishana Fields ; Christina James; Curt Haven; Abhar, Cyrus (MSA); Darcy Goulart; Darrow. Matthew; Eileen Cunningham; Elizabeth Sparkman; 'eric_fredericks@dot.ca.gov' (eric_fredericks@dot.ca.gov); fordc@saccounty.net; gchew@sacog.org; gwickham@fcusd.org; hockerl@saccounty.net; Jason Smalley (smalleyj@saccounty.net); Jennifer Hargrove; Jim Brown (jim@sacbike.org); Jim Dobson (jimd@sac-city.k12.ca.us); jlaurain@adamsbroadwell.com; Cuffe. Joe (MSA); John Rogers (rogersjo@saccounty.net); Kacey Lizon (klizon@sacog.org); Kate Cook (External); kenneth_sanchez@fws.gov; Kim Juran; 'larry_brohman@dot.ca.gov' (larry_brohman@dot.ca.gov); Liisa Behrends; Lisa Barsdale (barsdale.lisa@metrofire.ca.gov); Lori Murphy; Leah Pertl (MSA); ltaylor@crpd.com; Maret. Mary; Marilyn Phelps; Mary Pakenham-Walsh; Matt Buland; Melissa Brockman-Vignau (mbrockman@usbr.gov); Michelle Mingay; mike@cecwest.com; Molly Wright (mwright@airquality.org); Patrick Hindmarsh (External); Peck Ha; Rachel Del Rio (rachel.delrio@smud.org); Richard Blackmarr (blackmarr@saccounty.net); Ryan Becker; Sacramento Metro Fire (Front Office Staff) (crrdstaff@metrofire.ca.gov); SASD Development Services; Sean Twilla (seantwilla@gswater.com); Smud ; Stefan Heisler; Steve Harriman; Tameem Samimi; Teresa Tholen in Facilities; Tina Aldama ; Traci Canfield ; Victor Ramos; whughes@smud.org
Cc: June Cowles
Subject: The Ranch GPA, RZ, TSM, DA, Phasing DD9725

Good Afternoon,

Please find the attached project routing for your review. Completeness comments are due to June Cowles (jcowles@cityofranchocordova.org) by 5PM on March 2nd. Comments may be emailed but if we do not receive a response by March 2nd we will presume that your agency does not require any additional items to complete your review (i.e. additional studies, required items on plans, etc.).

Thank you,

Kelly

Kelly Whitman
City of Rancho Cordova
Planning Department
2729 Prospect Park Dr.
Rancho Cordova, CA 95670

(916) 851-8759
www.cityofranchocordova.org

ATTACHMENT 4

Municipal Services Agency

Department of Transportation
Michael J. Penrose, Director

Steven Szalay, County Executive
Robert Leonard, Agency Administrator

County of Sacramento

April 12, 2011

Mr. Bret Sampson
City of Rancho Cordova
2729 Propect Park Drive
Rancho Cordova, CA 95670

SUBJECT: COMMENTS FOR THE NOTICE OF PREPARATION OF THE DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE RANCH AT SUNRIDGE PROJECT

Dear Mr. Sampson:

The Sacramento County Department of Transportation (DOT) has reviewed the Notice of Preparation (NOP) of the Draft Environmental Impact Report (DEIR) for the Ranch at Sunridge project. We appreciate the opportunity to review the NOP and have the following comments to offer:

1. Please coordinate the scope of the traffic study with County DOT staff. Generally, the transportation impact analysis should at least evaluate weekday AM and PM peak hour conditions at intersections and daily roadway traffic conditions for roadway segments that are affected in the County. We would expect these would include facilities along Sunrise Boulevard, Grant Line Road, Kiefer Boulevard, Jackson Highway, Eagles Nest Road, Douglas Road, and White Rock Road at a minimum. In general, the County would like the traffic study to include the same intersections and roadway segments that were included in the original traffic study for the Sunridge Specific Plan.

2. County facilities should be analyzed according to Sacramento County Traffic Impact Analysis (TIA) guidelines dated July 2004. Prior to initiating the traffic impact study, please coordinate the study assumptions and any deviation from the County's TIA guidelines with County DOT staff.

3. Please make sure the land use assumptions that are contained in the transportation model are consistent with Easton, South Mather, and the Cordova Hills Specific Plans at a minimum.

4. Land use assumptions should be consistent with those outlined in the Folsom SOI. Please coordinate with the City of Folsom for project details.

5. Land use assumptions should be consistent with various major Quarry projects in Sacramento County (Teichert, Granite Construction and DeSilva Gates). Please coordinate any additional details regarding these projects with County DOT staff.

6. The DEIR should identify all impacted facilities in the County and provide feasible mitigation measures and identified funding sources. If impacts are found, we would request that the City of Rancho Cordova enter into an agreement with the County of Sacramento to implement these mitigation measures.

Should you have any questions, please feel free to contact me at (916) 874-7052. We look forward to providing any assistance necessary regarding this project.

Sincerely,

Matthew Darrow
Senior Transportation Engineer
Department of Transportation

MGD

c: Mike Penrose – DOT
Dan Shoeman – DOT
Dean Blank – DOT
Kamal Atwal – DOT
Cheryl Lenzie – Planning
Joyce Horizumi – DERA
Bob Davison – County Engineering

July 13, 2018

SENT VIA EMAIL

June Cowles, Senior Planner
City of Rancho Cordova Planning Department
2729 Prospect Park Drive
Rancho Cordova, California 95670

RE: The Ranch Special Planning Area Notice of Preparation of a Draft Environmental Impact Report, and Project Routing for a Rezone, Development Agreement, and Tentative Subdivision Map

Dear Ms. Cowles,

The Sacramento Metropolitan Air Quality Management District (SMAQMD) thanks the City of Rancho Cordova for the opportunity to comment on the revised routing for the Ranch Special Planning Area project, and the Notice of Preparation under the California Environmental Quality Act (CEQA). We offer the following comments.

Because this project's size exceeds sizes specified in SMAQMD's screening tables, full CEQA analysis will be necessary for both construction and operational emissions. These emissions include both criteria pollutants (pollutants covered by state and federal clean air acts) and greenhouse gases (GHGs). SMAQMD's Guide to Air Quality Assessment in Sacramento County (CEQA Guide) provides methods to analyze project air quality and climate change impacts, including screening criteria, thresholds of significance, and more, to assist lead agencies in complying with CEQA.

If operational criteria pollutant emissions are determined to be significant, the City should require an air quality mitigation plan, consistent with General Plan Action AQ.1.2.3, to reduce operational emissions by at least 15%. We would be happy to work with the proponent on appropriate measures for the plan. We recommend SMAQMD verification of the plan prior to environmental document certification or tentative subdivision map approval, whichever occurs first.

If operational GHG emissions are determined to be significant, the City should apply all feasible mitigation, as described in SMAQMD's CEQA Guide. CEQA Guidelines Section 15183.5 includes the provision for tiering and streamlining the analysis of GHG emissions in CEQA documents. Under this provision, lead agencies may analyze and mitigate the effects of GHG emissions at a programmatic level, for example for a long range development plan such as the current Ranch Special Planning Area. Later project-specific CEQA documents may tier and/or incorporate by reference that existing programmatic review. SMAQMD's CEQA Guide includes guidance on programmatic CEQA review.

If the construction emissions of criteria pollutants and / or GHGs are determined to be significant, the City should require SMAQMD's standard construction mitigation. This mitigation is available in SMAQMD's CEQA Guide.

We look forward to receiving more project information through the environmental review process, so we can more fully evaluate this project for its effects on air quality. Please note that all projects are subject to SMAQMD rules and regulations in effect at the time of construction. The attached document describes SMAQMD rules which may apply to this project whether the air quality impacts are determined to be significant or not. If you have questions about these comments, please contact me at mwright@airquality.org or 916-874-4207.

Sincerely,

Molly Wright, AICP
Air Quality Planner / Analyst

Attachment: SMAQMD Rules and Regulations Statement

c: Paul Philley, AICP, Program Coordinator

Sac Metro Air District Rules & Regulations Statement (revised 6/2018)

*The following statement is recommended as standard condition of approval or construction document language for **all** development projects within the Sacramento Metropolitan Air Quality Management District (Sac Metro Air District):*

All projects are subject to Sac Metro Air District rules in effect at the time of construction. A complete listing of current rules is available at www.airquality.org or by calling 916-874-4800. Specific rules that may relate to construction activities or building design may include, but are not limited to:

Rule 201: General Permit Requirements. Any project that includes the use of equipment capable of releasing emissions to the atmosphere may require permit(s) from Sac Metro Air District prior to equipment operation. The applicant, developer, or operator of a project that includes an emergency generator, boiler, or heater should contact the Sac Metro Air District early to determine if a permit is required, and to begin the permit application process. Other general types of uses that require a permit include, but are not limited to, dry cleaners, gasoline stations, spray booths, and operations that generate airborne particulate emissions. Portable construction equipment (e.g. generators, compressors, pile drivers, lighting equipment, etc.) with an internal combustion engine over 50 horsepower is required to have a Sac Metro Air District permit or a California Air Resources Board portable equipment registration (PERP) (see Other Regulations below).

Rule 402: Nuisance. The developer or contractor is required to prevent dust or any emissions from onsite activities from causing injury, nuisance, or annoyance to the public.

Rule 403: Fugitive Dust. The developer or contractor is required to control dust emissions from earth moving activities, storage or any other construction activity to prevent airborne dust from leaving the project site.

Rule 414: Water Heaters, Boilers and Process Heaters Rated Less Than 1,000,000 BTU PER Hour. The developer or contractor is required to install water heaters (including residence water heaters), boilers or process heaters that comply with the emission limits specified in the rule.

Rule 417: Wood Burning Appliances. This rule prohibits the installation of any new, permanently installed, indoor or outdoor, uncontrolled fireplaces in new or existing developments.

Rule 442: Architectural Coatings. The developer or contractor is required to use coatings that comply with the volatile organic compound content limits specified in the rule.

Rule 453: Cutback and Emulsified Asphalt Paving Materials. This rule prohibits the use of certain types of cut back or emulsified asphalt for paving, road construction or road maintenance activities.

Rule 460: Adhesives and Sealants. The developer or contractor is required to use adhesives and sealants that comply with the volatile organic compound content limits specified in the rule.

Rule 902: Asbestos. The developer or contractor is required to notify the Sac Metro Air District of any regulated renovation or demolition activity. Rule 902 contains specific requirements for surveying, notification, removal, and disposal of asbestos containing material.

Other Regulations (California Code of Regulations (CCR))

17 CCR, Division 3, Chapter 1, Subchapter 7.5, §93105 Naturally Occurring Asbestos: The developer or contractor is required to notify the Sac Metro Air District of earth moving projects, greater than 1 acre in size in areas "Moderately Likely to Contain Asbestos" within eastern Sacramento County. The developer or contractor is required to comply with specific requirements for surveying, notification, and handling soil that contains naturally occurring asbestos.

13 CCR, Division 3, Chapter 9, Article 5, Portable Equipment Registration Program: The developer or contractor is required to comply with all registration and operational requirements of the portable equipment registration program such as recordkeeping and notification.

13 CCR, Division 3, Chapter 9, Article 4.8, §2449(d)(2) and 13 CCR, Division 3, Chapter 10, Article 1, §2485 regarding Anti-Idling: Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes. These apply to diesel powered off-road equipment and on-road vehicles, respectively.

Sent Via E-Mail

August 6, 2018

June Cowles
City of Rancho Cordova
2729 Prospect Park Drive
Rancho Cordova, CA 95670
jcowles@cityofranchocordova.org

Subject: Response to Notice of Preparation for The Ranch Project

Dear Ms. Cowles:

The Sacramento Municipal Utility District (SMUD) appreciates the opportunity to provide comments in response to the Notice of Preparation of a Draft Environmental Impact Report (DEIR) for The Ranch Project (Project). SMUD is the primary energy provider for the City of Rancho Cordova that includes the proposed Project area. SMUD's vision is to empower our customers with solutions and options that increase energy efficiency, protect the environment, reduce global warming, and lower the cost to serve our region. As a Responsible Agency, SMUD aims to ensure that the proposed Project limits the potential for significant environmental effects on SMUD facilities, employees, and customers.

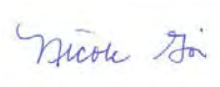
It is our desire that the DEIR that will be prepared for the Project acknowledge any Project impacts related to the following:

- Overhead and or underground transmission and distribution line easements. Please view the following links on smud.org for more information regarding transmission encroachment:
  - https://www.smud.org/en/Business-Solutions-and-Rebates/Design-and-Construction-Services
  - https://www.smud.org/en/Corporate/Do-Business-with-SMUD/Land-Use/Transmission-Right-of-Way
- Utility line routing
- Electrical load needs/requirements
- Energy Efficiency
- Climate Change
- Cumulative impacts related to the need for increased electrical delivery
- The new development can be served from existing and planned distribution substation facilities.
- SMUD has existing overhead 69kV within the transmission line corridor and along the west side of Rancho Cordova Pkwy.

- No new 69kV facilities are planned within the development.
- PUE will be required for all new 12kV within the development.
- A Consent to Common Use will be required through SMUD's Transmission and Real Estate Departments.

SMUD would like to be involved with discussing the above areas of interest as well as discussing any other potential issues. We aim to be partners in the efficient and sustainable delivery of the proposed Project. Please ensure that the information included in this response is conveyed to the Project planners and the appropriate Project proponents. Environmental leadership is a core value of SMUD and we look forward to collaborating with you on this Project. Again, we appreciate the opportunity to provide input on this NOP. If you have any questions regarding this letter, please contact SMUD's Environmental Management Specialist, Jerry Park, at jerry.park@smud.org or 916.732.7406.

Sincerely,



Nicole Goi
Regional & Local Government Affairs
Sacramento Municipal Utility District
6301 S Street, Mail Stop A313
Sacramento, CA 95817
nicole.goi@smud.org

Cc: Jerry Park

APPENDIX B

Air Quality, Greenhouse Gas, and Energy Appendices

CONTENTS

Appendix B.1: CalEEMod Outputs

Appendix B.2: Energy Outputs

Appendix B.3: Determination of MTP/SCS Consistency Worksheet

Appendix B.4: Analysis of Models and Tools to Correlate Project-Generated Pollutants to Health End Points

APPENDIX B.1

CalEEMod Outputs

Appendix B.1
CalEEMod Parameters

Proposed Project (Operational) Scenario

- Project Location: Sacramento County
- Climate Zone: 6
- Land Use Setting: Urban
- Operational Year: **2035**
- Utility Company: Sacramento Municipal Utility District
- Land Uses:

Land Use Type and Subtype	Unit Amount and Metric	Lot Acreage	Square Footage	Population
Retail - Regional Shopping Center	32,000 sf	5.16	32,000	0
Residential - Apartments Mid-Rise (Multi-Family Residential)	215 units	7.17	215,000	621
Residential - Retirement Community (Active Adult Multi-Family Residential - attached)	38 units	1.26	38,000	78
Residential - Single-Family Residential (Traditional Single-Family Residential)	735 units	77.87	1,323,600	2,087
Residential - Retirement Community (Active Adult Single Family Residential - detached)	737 units	90.91	737,000	1,533
Recreational – City Park (Lot D – turf and play areas, and soccer field) (also includes 8,000 sf for restrooms)	9.1 acre – turf/play/fields 8,000 sf – restrooms	9.28	387,684	0
– Parking Other Asphalt Surface (Lot D – walking path)	1 acre	1	43,560	0
Parking – Parking Lot (Lot D)	0.5 acre	0.5	44,866.8	0
Recreational – City Park (Lot A – grass area) (also includes 21,000 sf for clubhouse and restrooms)	3.07 acres - turf, recreation 21,000 sf clubhouse	3.69	133,729	0
Parking – (Lot A, parking)	0.5 acres	0.5		
Parking – Other Asphalt Surfaces (open space lots, walking path)	2.5 acres	2.5	108,900	0
Parking – Parking Lot (open space lots	0.5	0.5		
Park (Lot C, Linear Tree and Natural Landscaping Feature))	0.5 acres – Park; 0.9 acres – passive uses (passive park uses are treated as open space and not modeled in CalEEMod)	1.4		
Park (Lot B, Community Garden)	1.58 – passive uses (passive park uses are treated as open space and	1.58		

	not modeled in CalEEMod)			
Park (Lot U, Passive Park))	1.21 (passive park uses are treated as open space and not modeled in CalEEMod)	1.21		
Subtotal		**204.53**		
Open Space (257.24 acres less 2.5 acres of paved/asphalt trails, 0.5 ac of parking)		254.24		
Roadways		71.33		
TOTAL		**530.1**		

Land Use data as provided by the project applicant.

Population = Population as calculated based on best available data. Consistent with what is provided in the Population and Housing section of the EIR (The population for non-age restricted single-family units were calculated using 2.84 persons per household. The population for non-age restricted multifamily units were calculated using 2.89 persons per household. The population for age-restricted single-family units were calculated using 2.08 persons per household. The population for age-restricted multifamily units was calculated using 2.05 person per household. All of these persons per household rates are from the 2013-2017 American Community Survey).

- Operational – Mobile:
  - Trip rates derived from the Traffic Analyses (Kimley Horn) (June 2019) (internal capture rate applied):
    - Apartments Mid-Rise: 5.36 trips/dwelling unit
    - Regional Shopping Center: 28.06 trips/dwelling unit
    - Retirement Community: 3.20 trips/dwelling unit (note – this is a weighted average of the two Retirement Community subtypes – attached and detached).
    - Single Family Housing: 8.7 trips/dwelling unit
  - Fleet Mix: Default CalEEMod values were used.
- Operational – Area
  - No woodstoves or fireplaces.
  - Consumer Products:
  - The "general category" emission factor was adjusted from default value (reduced by a total of 29.10%), based on the following differences between proposed project attributes and the inputs used to develop the default value (the default value utilizes statewide factors from year 2008):
    - The proposed project is estimated to have a persons per dwelling unit (persons/du) value of 2.504, versus the current statewide average of 2.971. This is a difference of 18.60%
    - The CARB estimated total statewide year 2016 ROG emissions of 208.71 tons/year, which is 12.89% less than the amount estimated for year 2008 (239.6 tons/year).
    - 3.5 out of the total 5.0 acres of parking lot – other asphalt surfaces modeled would be developed as walking paths.
  - Architectural Coatings:

[1] California Department of Finance, Table 2: E-5 City/County Population and Housing Estimates (1/1/2018).

        - The residential interior and non-residential interior emission factors were reduced from 100 g/L to 50 g/L, based on the SMAQMD Rule 442 that provides a maximum VOC limit of 50 g/L for flat coatings. It was assumed that flat coatings are used for interior coatings.

- Vegetation
    - Land Use Change: Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.87 - 90.91 - 7.17 - 5.16 - 32.3 - 20.59 - 17.34 = 278.76 acres of grassland remaining.
    - Approximately 2,240 new trees planted as part of the project (provided by project applicant). These were modeled as "miscellaneous" trees.

- Mitigation Measures (Operational) (Unmitigated):
    - Low Density Suburban (Project Setting)
    - Increase density to 6.86 dwelling units per acre;
    - Increase diversity;
    - Improve walkability design (123.53 intersections per square miles);
    - Improve destination accessibility (12.3 miles to downtown);
    - Increase transit accessibility (project site would include a bus/transit facilities – distance to transit for nearby residents would be approximately 0.25 miles);
    - Expand transit network (100% increase in coverage);
    - Provide traffic calming measures (50% of streets and intersections with improvements);
    - Improve pedestrian network (project site and connecting off-site);
    - Implement NEV network
    - Plant a minimum of 2,240 new trees throughout the project site;
    - No hearths.
    - Install energy efficient (i.e. LED) street lighting (for outdoor lighting);
    - Generate 95% or more of electricity via renewable energy (on-site energy generation and/or contract with SMUD);
    - Install energy efficient appliances;
    - Install low-flow appliances (bathroom faucet, kitchen faucet, toilet, and shower); and
    - Use water-efficient irrigation systems.
    - Turf Reduction: 70%

<u>Proposed Project (Operational – without car and light-duty truck trips) Scenario</u>
Note: all parameters are the same under this scenario as under the "Operational" scenario, except for the following:

- Operational – Mobile:
    - Trip rates derived from the Traffic Analyses (Kimley Horn) (June 2019) – modified to reflect the proportion of trips not due to cars or light-duty trucks (i.e. across-the-board reduction in trip rates by approximately 81.7%):
        - Apartments Mid-Rise: 0.98 trips/dwelling unit
        - Regional Shopping Center: 5.14 trips/dwelling unit
        - Retirement Community: 0.59 trips/dwelling unit
        - Single Family Housing: 1.59 trips/dwelling unit
    - Fleet Mix: Default CalEEMod values were used, except for car and light-duty truck fleet categories (LDA, LDT1, and LDT2). LDA, LDT1, and LDT2 trips were removed from the fleet

mix, and the remainder categories were reapportioned based on their relative size under the default scenario.

Proposed Project (Construction) Scenario – Phase 1

- Includes:
  - Phase I Clubhouse and associated landscaping (Lot A) – 1/3 of the building complex (about 7000 sf);
  - 270 single family residential units;
  - 232 single family residential units – age restricted.

Construction Tab – Phasing:

- Site Prep: 64 days (note: site prep for both phases 1 and 2)
  - 1/1/2020 – 3/30/2020
- Grading: 153 days
  - 4/1/2020 – 11/01/2020
- Paving: 65 days
  - 11/1/2020 – 1/30/2021
- Building Construction: 586 days
  - 2/1/2021 – 5/1/2023
- Architectural Coating: 587 days
  - 5/2/2021 – 8/1/2023

- Construction Tab – Off-Road Equipment:
  - Default CalEEMod values used.
- Construction Tab – Fleet Mix:
  - Default values used.

Proposed Project (Construction) Scenario – Phase 2

This phase includes the following:

- 197 single family residential units
- 210 single family residential units – age restricted.
- Neighborhood Park 2.2 ac (lot Q)
- Liner Park Lot C (1.4ac)
- Phase 2 Clubhouse building (~7000 sf) April 2023-June 2024

Construction Tab – Phasing:

- Improvements for Phase 2: 131 days
  - 4/1/2022 – 9/30/2022
- Paving: 65 days
  - 10/1/2022 – 12/31/2022
- Building Construction: 609 days
  - 4/1/2023 – 7/31/2025
- Architectural Coating: 609 days
  - 8/1/2023 – 11/30/2025

- Construction Tab – Off-Road Equipment:
  - Default CalEEMod values used.
- Construction Tab – Fleet Mix:
  - Default values used.

Proposed Project (Construction) Scenario – Phase 3

- This phase includes the following:
    - 268 single family residential units
    - 295 single family residential units – age restricted
    - 16 senior multi-family residential units
    - Open Space (Lot T) – 1.2 acres
    - Rancho Cordova Parkway Widening
    - Phase 3 clubhouse (~7000 sf) -April 2028-August 2029
    - Lot B (Park)

Construction Tab – Phasing:

- Site Prep: 43 days
    - 2/1/2025 – 4/27/2025
- Grading: 132 days
    - 4/28/2025 – 10/1/2025
- Paving: 65 days
    - 10/2/2025 – 12/31/2025
- Building Construction: 717 days
    - 1/1/2026 – 9/30/2028
- Architectural Coating: 718 days
    - 4/1/2026 – 12/31/2028
- Site Preparation and grading for Rancho Cordova widening: 196 days
    - 1/1/2027 – 10/1/2027
- Paving for Rancho Cordova widening: 86 days
    - 10/2/2027 – 01/31/2028
- Site Prep (note: for park – Lot D): 260 days
    - 4/1/2028 – 4/1/2029

- Construction Tab – Off-Road Equipment:
    - Default CalEEMod values used.
- Construction Tab – Fleet Mix:
    - Default values used.

Proposed Project (Construction) Scenario – Phase 4

- This phase includes the following:
    - 215 multi-family residential units
    - 22 senior multi-family residential units

Construction Tab – Phasing:

- Site Preparation for Commercial and MFR: 41 days
    - 3/1/2030 – 4/27/2030
- Grading and Improvements: 85 days
    - 4/28/2030 – 8/1/2030
- Paving: 65 days
    - 8/2/2030 – 10/31/2030
- Building Construction: 459 days
    - 4/1/2031 – 1/1/2033
- Architectural Coating: 108 days

        - 1/2/2033 – 6/1/2033
- Construction Tab – Off-Road Equipment:
    - Default CalEEMod values used.
- Construction Tab – Fleet Mix:
    - Default CalEEMod values used.

Proposed Project (Construction) Scenario – Phase 5

This phase includes the following:

- Commercial center.

Construction Tab – Phasing:

- Site Preparation for commercial center: 42 days
    - 3/1/2034 – 4/27/2034
- Grading and Improvements: 67 days
    - 4/28/2034 – 7/31/2024
- Paving: 24 days
    - 8/1/2034 – 9/1/2034
- Building Construction: 260 days
    - 10/1/2034 – 8/31/2035
- Architectural Coating: 86 days
    - 9/1/2035 – 12/31/2035

- Construction Tab – Off-Road Equipment:
    - Default CalEEMod values used.
- Construction Tab – Fleet Mix:
    - Default CalEEMod values used.

Proposed Project (Construction) Scenario – All Phases

Note: Site preparation and grading activities for Phases 1 and 2 are accounted for in Phase 1.

Construction Tab – Dust from Material Movement:

- Grading as modeled includes area for roadways, apportioned based on the acreages developed per construction phase. Grading for phases 1 and 2 would occur under phase 1 (per the Project Applicant).
- Cut and fill: net export of 152,708 cubic yards (CY) (prorated for phase 1 and 3 at 76,354 cubic yards for each phase).

Mitigation Measures (Construction):

- Water exposed area 2 time daily;
- Unpaved road mitigation = 15 mph;
- Clean paved road = 9% reduction.

The Ranch - City of Rancho Cordova (Construction Only - Phase 1)

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	270.00	Dwelling Unit	28.61	486,000.00	767
Retirement Community	232.00	Dwelling Unit	28.62	232,000.00	463
City Park	1.02	Acre	1.23	44,576.40	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Estimated construction state date of January 2020 (provided by Applicant).

Land Use - This model run provides construction emissions only.

Construction Phase - Phase 1

Off-road Equipment -

Off-road Equipment - For building construction, assumes 1 crane, 2 forklifts, 1 generator set, 1 tractor/loader/backhoe, and 1 welder (as provided by the applicant)

Off-road Equipment -

Off-road Equipment - D

Off-road Equipment -
Off-road Equipment -

Trips and VMT - Assume grading truck haul length = 7 miles (Sacramento dump site).

Grading - Assume 148.53 (res./comm./right of way) this phase (includes phases 1 and 2). Assume 1/2 of site is exported during this this phase (152,708 CY / 2 = 76,354 CY). Total net export for entire project (152,708 CY) as provided by applicant.

Architectural Coating - Interior VOC limts reduced from 100 g/L to 50 g/L based on SMAQMD Rule 443 that provides a VOC limit for flat coatings of 50 g/L.

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust -

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 28.33% - reflects project person/du value (2.523) vs. statewide avg. (2.97) and latest statewide data (ARB). Parking Degreaser EF red. by 57.5% (corrects for walking paths modeled as 'parking lot').

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%. NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15

tblConstructionPhase	NumDays	40.00	64.00
tblConstructionPhase	NumDays	110.00	153.00
tblConstructionPhase	NumDays	75.00	65.00
tblConstructionPhase	NumDays	1,110.00	586.00
tblConstructionPhase	NumDays	75.00	587.00
tblConstructionPhase	PhaseEndDate	2/25/2020	3/30/2020
tblConstructionPhase	PhaseEndDate	7/28/2020	10/30/2020
tblConstructionPhase	PhaseEndDate	2/11/2025	1/29/2021
tblConstructionPhase	PhaseEndDate	10/29/2024	5/1/2023
tblConstructionPhase	PhaseEndDate	5/27/2025	8/1/2023
tblConstructionPhase	PhaseStartDate	2/26/2020	4/1/2020
tblConstructionPhase	PhaseStartDate	10/30/2024	11/1/2020
tblConstructionPhase	PhaseStartDate	7/29/2020	2/1/2021
tblConstructionPhase	PhaseStartDate	2/12/2025	5/2/2021
tblGrading	AcresOfGrading	382.50	148.53
tblLandUse	LandUseSquareFeet	44,431.20	44,576.40
tblLandUse	LotAcreage	87.66	28.61
tblLandUse	LotAcreage	46.40	28.62
tblLandUse	LotAcreage	1.02	1.23
tblLandUse	Population	721.00	767.00
tblLandUse	Population	619.00	463.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblTripsAndVMT	HaulingTripNumber	0.00	9,544.00
tblTripsAndVMT	VendorTripNumber	61.00	0.00
tblTripsAndVMT	VendorTripNumber	61.00	0.00
tblTripsAndVMT	WorkerTripNumber	283.00	15.00
tblTripsAndVMT	WorkerTripNumber	283.00	15.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.5465	6.8842	3.8328	0.0104	1.2160	0.2582	1.4742	0.6064	0.2377	0.8441	0.0000	948.8146	948.8146	0.2053	0.0000	953.9478
2021	1.4252	4.7568	5.3413	0.0112	0.8937	0.2160	1.1097	0.2277	0.2018	0.4294	0.0000	1,001.8066	1,001.8066	0.1700	0.0000	1,006.0559
2022	1.8233	4.5275	5.5771	0.0120	0.9817	0.1940	1.1757	0.2502	0.1816	0.4318	0.0000	1,070.7478	1,070.7478	0.1760	0.0000	1,075.1479
2023	0.9189	1.4037	1.9018	4.1400e-003	0.3385	0.0586	0.3971	0.0864	0.0550	0.1414	0.0000	368.8509	368.8509	0.0582	0.0000	370.3048
Maximum	**1.8233**	**6.8842**	**5.5771**	**0.0120**	**1.2160**	**0.2582**	**1.4742**	**0.6064**	**0.2377**	**0.8441**	**0.0000**	**1,070.7478**	**1,070.7478**	**0.2053**	**0.0000**	**1,075.1479**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.5465	6.8842	3.8328	0.0104	0.5945	0.2582	0.8527	0.2860	0.2377	0.5237	0.0000	948.8140	948.8140	0.2053	0.0000	953.9471
2021	1.4252	4.7568	5.3413	0.0112	0.8182	0.2160	1.0342	0.2091	0.2018	0.4109	0.0000	1,001.8060	1,001.8060	0.1700	0.0000	1,006.0553
2022	1.8233	4.5275	5.5771	0.0120	0.8989	0.1940	1.0928	0.2299	0.1816	0.4115	0.0000	1,070.7471	1,070.7471	0.1760	0.0000	1,075.1472
2023	0.9189	1.4037	1.9018	4.1400e-003	0.3101	0.0586	0.3686	0.0795	0.0550	0.1344	0.0000	368.8506	368.8506	0.0582	0.0000	370.3045
Maximum	**1.8233**	**6.8842**	**5.5771**	**0.0120**	**0.8989**	**0.2582**	**1.0928**	**0.2860**	**0.2377**	**0.5237**	**0.0000**	**1,070.7471**	**1,070.7471**	**0.2053**	**0.0000**	**1,075.1472**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**23.57**	**0.00**	**19.44**	**31.28**	**0.00**	**19.83**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2020	3-31-2020	1.4984	1.4984
2	4-1-2020	6-30-2020	2.3582	2.3582
3	7-1-2020	9-30-2020	2.3842	2.3842
4	10-1-2020	12-31-2020	1.1234	1.1234
5	1-1-2021	3-31-2021	1.0303	1.0303
6	4-1-2021	6-30-2021	1.6072	1.6072
7	7-1-2021	9-30-2021	1.7561	1.7561
8	10-1-2021	12-31-2021	1.7618	1.7618

9	**1-1-2022**	**3-31-2022**	1.5755	1.5755
10	**4-1-2022**	**6-30-2022**	1.5881	1.5881
11	**7-1-2022**	**9-30-2022**	1.6056	1.6056
12	**10-1-2022**	**12-31-2022**	1.6105	1.6105
13	**1-1-2023**	**3-31-2023**	1.4595	1.4595
14	**4-1-2023**	**6-30-2023**	0.7464	0.7464
15	**7-1-2023**	**9-30-2023**	0.1306	0.1306
		Highest	2.3842	2.3842

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.4386	0.0595	5.1588	2.7000e-004		0.0287	0.0287		0.0287	0.0287	0.0000	8.4565	8.4565	8.0500e-003	0.0000	8.6577
Energy	0.0528	0.4508	0.1918	2.8800e-003		0.0364	0.0364		0.0364	0.0364	0.0000	1,423.4967	1,423.4967	0.0543	0.0187	1,430.4365
Mobile	0.4555	2.3639	5.3211	0.0251	2.9466	0.0128	2.9595	0.7890	0.0119	0.8009	0.0000	2,322.3684	2,322.3684	0.0846	0.0000	2,324.4842
Waste						0.0000	0.0000		0.0000	0.0000	77.7313	0.0000	77.7313	4.5938	0.0000	192.5761
Water						0.0000	0.0000		0.0000	0.0000	11.5719	64.0992	75.6711	0.0430	0.0258	84.4389
Total	**3.9468**	**2.8742**	**10.6717**	**0.0282**	**2.9466**	**0.0780**	**3.0246**	**0.7890**	**0.0771**	**0.8660**	**89.3032**	**3,818.4209**	**3,907.7241**	**4.7837**	**0.0446**	**4,040.5935**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.4386	0.0595	5.1588	2.7000e-004		0.0287	0.0287		0.0287	0.0287	0.0000	8.4565	8.4565	8.0500e-003	0.0000	8.6577
Energy	0.0528	0.4508	0.1918	2.8800e-003		0.0364	0.0364		0.0364	0.0364	0.0000	1,423.4967	1,423.4967	0.0543	0.0187	1,430.4365
Mobile	0.4555	2.3639	5.3211	0.0251	2.9466	0.0128	2.9595	0.7890	0.0119	0.8009	0.0000	2,322.3684	2,322.3684	0.0846	0.0000	2,324.4842
Waste						0.0000	0.0000		0.0000	0.0000	77.7313	0.0000	77.7313	4.5938	0.0000	192.5761
Water						0.0000	0.0000		0.0000	0.0000	11.5719	64.0992	75.6711	0.0430	0.0258	84.4389
Total	**3.9468**	**2.8742**	**10.6717**	**0.0282**	**2.9466**	**0.0780**	**3.0246**	**0.7890**	**0.0771**	**0.8660**	**89.3032**	**3,818.4209**	**3,907.7241**	**4.7837**	**0.0446**	**4,040.5935**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	1,585.9200
Vegetation Land Change	-1,057.2430
Total	**528.6770**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2020	3/30/2020	5	64	
2	Grading	Grading	4/1/2020	10/30/2020	5	153	
3	Paving	Paving	11/1/2020	1/29/2021	5	65	
4	Building Construction	Building Construction	2/1/2021	5/1/2023	5	586	
5	Architectural Coating	Architectural Coating	5/2/2021	8/1/2023	5	587	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 148.53

Acres of Paving: 0

Residential Indoor: 1,453,950; Residential Outdoor: 484,650; Non-Residential Indoor: 10,500; Non-Residential Outdoor: 3,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Pavers	2	8.00	130	0.42
Building Construction	Paving Equipment	2	8.00	132	0.36
Building Construction	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	9,544.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	15	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	15	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	15	283.00	61.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	57.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5781	0.0000	0.5781	0.3178	0.0000	0.3178	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1305	1.3574	0.6884	1.2200e-003		0.0703	0.0703		0.0647	0.0647	0.0000	106.9782	106.9782	0.0346	0.0000	107.8432
Total	**0.1305**	**1.3574**	**0.6884**	**1.2200e-003**	**0.5781**	**0.0703**	**0.6484**	**0.3178**	**0.0647**	**0.3825**	**0.0000**	**106.9782**	**106.9782**	**0.0346**	**0.0000**	**107.8432**

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1400e-003	1.4500e-003	0.0159	4.0000e-005	4.2300e-003	3.0000e-005	4.2600e-003	1.1300e-003	3.0000e-005	1.1500e-003	0.0000	3.7482	3.7482	1.1000e-004	0.0000	3.7509
Total	**2.1400e-003**	**1.4500e-003**	**0.0159**	**4.0000e-005**	**4.2300e-003**	**3.0000e-005**	**4.2600e-003**	**1.1300e-003**	**3.0000e-005**	**1.1500e-003**	**0.0000**	**3.7482**	**3.7482**	**1.1000e-004**	**0.0000**	**3.7509**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2602	0.0000	0.2602	0.1430	0.0000	0.1430	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1305	1.3574	0.6884	1.2200e-003		0.0703	0.0703		0.0647	0.0647	0.0000	106.9781	106.9781	0.0346	0.0000	107.8430
Total	**0.1305**	**1.3574**	**0.6884**	**1.2200e-003**	**0.2602**	**0.0703**	**0.3305**	**0.1430**	**0.0647**	**0.2077**	**0.0000**	**106.9781**	**106.9781**	**0.0346**	**0.0000**	**107.8430**

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1400e-003	1.4500e-003	0.0159	4.0000e-005	3.9000e-003	3.0000e-005	3.9300e-003	1.0400e-003	3.0000e-005	1.0700e-003	0.0000	3.7482	3.7482	1.1000e-004	0.0000	3.7509
Total	**2.1400e-003**	**1.4500e-003**	**0.0159**	**4.0000e-005**	**3.9000e-003**	**3.0000e-005**	**3.9300e-003**	**1.0400e-003**	**3.0000e-005**	**1.0700e-003**	**0.0000**	**3.7482**	**3.7482**	**1.1000e-004**	**0.0000**	**3.7509**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5395	0.0000	0.5395	0.2617	0.0000	0.2617	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3404	3.8401	2.4448	4.7400e-003		0.1663	0.1663		0.1530	0.1530	0.0000	416.8048	416.8048	0.1348	0.0000	420.1749
Total	**0.3404**	**3.8401**	**2.4448**	**4.7400e-003**	**0.5395**	**0.1663**	**0.7058**	**0.2617**	**0.1530**	**0.4147**	**0.0000**	**416.8048**	**416.8048**	**0.1348**	**0.0000**	**420.1749**

3.3 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0367	1.3711	0.3098	3.7600e-003	0.0805	4.9100e-003	0.0854	0.0221	4.6900e-003	0.0268	0.0000	365.1176	365.1176	0.0212	0.0000	365.6482
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-003	3.8600e-003	0.0424	1.1000e-004	0.0112	8.0000e-005	0.0113	2.9900e-003	7.0000e-005	3.0600e-003	0.0000	9.9563	9.9563	2.8000e-004	0.0000	9.9633
Total	**0.0424**	**1.3750**	**0.3522**	**3.8700e-003**	**0.0918**	**4.9900e-003**	**0.0967**	**0.0251**	**4.7600e-003**	**0.0299**	**0.0000**	**375.0739**	**375.0739**	**0.0215**	**0.0000**	**375.6115**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2428	0.0000	0.2428	0.1178	0.0000	0.1178	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3404	3.8401	2.4448	4.7400e-003		0.1663	0.1663		0.1530	0.1530	0.0000	416.8044	416.8044	0.1348	0.0000	420.1744
Total	**0.3404**	**3.8401**	**2.4448**	**4.7400e-003**	**0.2428**	**0.1663**	**0.4091**	**0.1178**	**0.1530**	**0.2708**	**0.0000**	**416.8044**	**416.8044**	**0.1348**	**0.0000**	**420.1744**

3.3 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0367	1.3711	0.3098	3.7600e-003	0.0751	4.9100e-003	0.0800	0.0208	4.6900e-003	0.0255	0.0000	365.1176	365.1176	0.0212	0.0000	365.6482
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-003	3.8600e-003	0.0424	1.1000e-004	0.0104	8.0000e-005	0.0104	2.7700e-003	7.0000e-005	2.8500e-003	0.0000	9.9563	9.9563	2.8000e-004	0.0000	9.9633
Total	**0.0424**	**1.3750**	**0.3522**	**3.8700e-003**	**0.0854**	**4.9900e-003**	**0.0904**	**0.0235**	**4.7600e-003**	**0.0283**	**0.0000**	**375.0739**	**375.0739**	**0.0215**	**0.0000**	**375.6115**

3.4 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0298	0.3094	0.3224	5.0000e-004		0.0166	0.0166		0.0152	0.0152	0.0000	44.0621	44.0621	0.0143	0.0000	44.4184
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0298**	**0.3094**	**0.3224**	**5.0000e-004**		**0.0166**	**0.0166**		**0.0152**	**0.0152**	**0.0000**	**44.0621**	**44.0621**	**0.0143**	**0.0000**	**44.4184**

3.4 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2300e-003	8.3000e-004	9.1300e-003	2.0000e-005	2.4200e-003	2.0000e-005	2.4400e-003	6.4000e-004	2.0000e-005	6.6000e-004	0.0000	2.1474	2.1474	6.0000e-005	0.0000	2.1490
Total	**1.2300e-003**	**8.3000e-004**	**9.1300e-003**	**2.0000e-005**	**2.4200e-003**	**2.0000e-005**	**2.4400e-003**	**6.4000e-004**	**2.0000e-005**	**6.6000e-004**	**0.0000**	**2.1474**	**2.1474**	**6.0000e-005**	**0.0000**	**2.1490**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0298	0.3094	0.3224	5.0000e-004		0.0166	0.0166		0.0152	0.0152	0.0000	44.0620	44.0620	0.0143	0.0000	44.4183
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0298**	**0.3094**	**0.3224**	**5.0000e-004**		**0.0166**	**0.0166**		**0.0152**	**0.0152**	**0.0000**	**44.0620**	**44.0620**	**0.0143**	**0.0000**	**44.4183**

3.4 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2300e-003	8.3000e-004	9.1300e-003	2.0000e-005	2.2400e-003	2.0000e-005	2.2500e-003	6.0000e-004	2.0000e-005	6.1000e-004	0.0000	2.1474	2.1474	6.0000e-005	0.0000	2.1490
Total	**1.2300e-003**	**8.3000e-004**	**9.1300e-003**	**2.0000e-005**	**2.2400e-003**	**2.0000e-005**	**2.2500e-003**	**6.0000e-004**	**2.0000e-005**	**6.1000e-004**	**0.0000**	**2.1474**	**2.1474**	**6.0000e-005**	**0.0000**	**2.1490**

3.4 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0132	0.1357	0.1539	2.4000e-004		7.1200e-003	7.1200e-003		6.5500e-003	6.5500e-003	0.0000	21.0247	21.0247	6.8000e-003	0.0000	21.1947
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0132**	**0.1357**	**0.1539**	**2.4000e-004**		**7.1200e-003**	**7.1200e-003**		**6.5500e-003**	**6.5500e-003**	**0.0000**	**21.0247**	**21.0247**	**6.8000e-003**	**0.0000**	**21.1947**

3.4 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.5000e-004	3.6000e-004	3.9900e-003	1.0000e-005	1.1600e-003	1.0000e-005	1.1600e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9900	0.9900	3.0000e-005	0.0000	0.9907
Total	**5.5000e-004**	**3.6000e-004**	**3.9900e-003**	**1.0000e-005**	**1.1600e-003**	**1.0000e-005**	**1.1600e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9900**	**0.9900**	**3.0000e-005**	**0.0000**	**0.9907**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0132	0.1357	0.1539	2.4000e-004		7.1200e-003	7.1200e-003		6.5500e-003	6.5500e-003	0.0000	21.0246	21.0246	6.8000e-003	0.0000	21.1946
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0132**	**0.1357**	**0.1539**	**2.4000e-004**		**7.1200e-003**	**7.1200e-003**		**6.5500e-003**	**6.5500e-003**	**0.0000**	**21.0246**	**21.0246**	**6.8000e-003**	**0.0000**	**21.1946**

3.4 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.5000e-004	3.6000e-004	3.9900e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0700e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	0.9900	0.9900	3.0000e-005	0.0000	0.9907
Total	**5.5000e-004**	**3.6000e-004**	**3.9900e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0700e-003**	**2.9000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.9900**	**0.9900**	**3.0000e-005**	**0.0000**	**0.9907**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3788	3.6421	3.7474	5.9700e-003		0.1964	0.1964		0.1830	0.1830	0.0000	518.2465	518.2465	0.1448	0.0000	521.8658
Total	**0.3788**	**3.6421**	**3.7474**	**5.9700e-003**		**0.1964**	**0.1964**		**0.1830**	**0.1830**	**0.0000**	**518.2465**	**518.2465**	**0.1448**	**0.0000**	**521.8658**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0230	0.7488	0.2001	1.7900e-003	0.1032	2.0700e-003	0.1053	0.0272	1.9800e-003	0.0292	0.0000	171.7598	171.7598	9.8200e-003	0.0000	172.0054
Worker	0.1301	0.0850	0.9506	2.6100e-003	0.7527	1.9300e-003	0.7546	0.1904	1.7800e-003	0.1922	0.0000	236.0943	236.0943	6.2000e-003	0.0000	236.2492
Total	**0.1531**	**0.8338**	**1.1508**	**4.4000e-003**	**0.8559**	**4.0000e-003**	**0.8599**	**0.2176**	**3.7600e-003**	**0.2214**	**0.0000**	**407.8541**	**407.8541**	**0.0160**	**0.0000**	**408.2546**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3788	3.6421	3.7474	5.9700e-003		0.1964	0.1964		0.1830	0.1830	0.0000	518.2459	518.2459	0.1448	0.0000	521.8652
Total	**0.3788**	**3.6421**	**3.7474**	**5.9700e-003**		**0.1964**	**0.1964**		**0.1830**	**0.1830**	**0.0000**	**518.2459**	**518.2459**	**0.1448**	**0.0000**	**521.8652**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0230	0.7488	0.2001	1.7900e-003	0.0951	2.0700e-003	0.0971	0.0252	1.9800e-003	0.0272	0.0000	171.7598	171.7598	9.8200e-003	0.0000	172.0054
Worker	0.1301	0.0850	0.9506	2.6100e-003	0.6883	1.9300e-003	0.6903	0.1746	1.7800e-003	0.1764	0.0000	236.0943	236.0943	6.2000e-003	0.0000	236.2492
Total	**0.1531**	**0.8338**	**1.1508**	**4.4000e-003**	**0.7834**	**4.0000e-003**	**0.7874**	**0.1998**	**3.7600e-003**	**0.2036**	**0.0000**	**407.8541**	**407.8541**	**0.0160**	**0.0000**	**408.2546**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3652	3.4763	4.0227	6.4700e-003		0.1790	0.1790		0.1669	0.1669	0.0000	561.6011	561.6011	0.1564	0.0000	565.5104
Total	**0.3652**	**3.4763**	**4.0227**	**6.4700e-003**		**0.1790**	**0.1790**		**0.1669**	**0.1669**	**0.0000**	**561.6011**	**561.6011**	**0.1564**	**0.0000**	**565.5104**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0232	0.7702	0.1999	1.9200e-003	0.1118	1.9700e-003	0.1138	0.0295	1.8800e-003	0.0313	0.0000	184.4376	184.4376	0.0103	0.0000	184.6960
Worker	0.1317	0.0828	0.9464	2.7300e-003	0.8154	2.0300e-003	0.8175	0.2063	1.8700e-003	0.2082	0.0000	246.6076	246.6076	6.0300e-003	0.0000	246.7584
Total	**0.1548**	**0.8530**	**1.1463**	**4.6500e-003**	**0.9272**	**4.0000e-003**	**0.9312**	**0.2357**	**3.7500e-003**	**0.2395**	**0.0000**	**431.0451**	**431.0451**	**0.0164**	**0.0000**	**431.4543**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3652	3.4763	4.0227	6.4700e-003		0.1790	0.1790		0.1669	0.1669	0.0000	561.6004	561.6004	0.1564	0.0000	565.5098
Total	**0.3652**	**3.4763**	**4.0227**	**6.4700e-003**		**0.1790**	**0.1790**		**0.1669**	**0.1669**	**0.0000**	**561.6004**	**561.6004**	**0.1564**	**0.0000**	**565.5098**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0232	0.7702	0.1999	1.9200e-003	0.1030	1.9700e-003	0.1049	0.0273	1.8800e-003	0.0292	0.0000	184.4376	184.4376	0.0103	0.0000	184.6960
Worker	0.1317	0.0828	0.9464	2.7300e-003	0.7457	2.0300e-003	0.7477	0.1892	1.8700e-003	0.1910	0.0000	246.6076	246.6076	6.0300e-003	0.0000	246.7584
Total	**0.1548**	**0.8530**	**1.1463**	**4.6500e-003**	**0.8487**	**4.0000e-003**	**0.8527**	**0.2165**	**3.7500e-003**	**0.2202**	**0.0000**	**431.0451**	**431.0451**	**0.0164**	**0.0000**	**431.4543**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1120	1.0568	1.3256	2.1400e-003		0.0520	0.0520		0.0485	0.0485	0.0000	185.7916	185.7916	0.0516	0.0000	187.0806
Total	**0.1120**	**1.0568**	**1.3256**	**2.1400e-003**		**0.0520**	**0.0520**		**0.0485**	**0.0485**	**0.0000**	**185.7916**	**185.7916**	**0.0516**	**0.0000**	**187.0806**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.0500e-003	0.2153	0.0585	6.2000e-004	0.0370	3.1000e-004	0.0373	9.7400e-003	3.0000e-004	0.0100	0.0000	59.8787	59.8787	3.0700e-003	0.0000	59.9553
Worker	0.0408	0.0246	0.2875	8.7000e-004	0.2697	6.6000e-004	0.2704	0.0682	6.0000e-004	0.0688	0.0000	78.5071	78.5071	1.7900e-003	0.0000	78.5518
Total	**0.0468**	**0.2400**	**0.3460**	**1.4900e-003**	**0.3067**	**9.7000e-004**	**0.3077**	**0.0780**	**9.0000e-004**	**0.0789**	**0.0000**	**138.3858**	**138.3858**	**4.8600e-003**	**0.0000**	**138.5072**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1120	1.0568	1.3256	2.1400e-003		0.0520	0.0520		0.0485	0.0485	0.0000	185.7914	185.7914	0.0516	0.0000	187.0804
Total	**0.1120**	**1.0568**	**1.3256**	**2.1400e-003**		**0.0520**	**0.0520**		**0.0485**	**0.0485**	**0.0000**	**185.7914**	**185.7914**	**0.0516**	**0.0000**	**187.0804**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.0500e-003	0.2153	0.0585	6.2000e-004	0.0341	3.1000e-004	0.0344	9.0300e-003	3.0000e-004	9.3200e-003	0.0000	59.8787	59.8787	3.0700e-003	0.0000	59.9553
Worker	0.0408	0.0246	0.2875	8.7000e-004	0.2467	6.6000e-004	0.2473	0.0626	6.0000e-004	0.0632	0.0000	78.5071	78.5071	1.7900e-003	0.0000	78.5518
Total	**0.0468**	**0.2400**	**0.3460**	**1.4900e-003**	**0.2807**	**9.7000e-004**	**0.2817**	**0.0716**	**9.0000e-004**	**0.0725**	**0.0000**	**138.3858**	**138.3858**	**4.8600e-003**	**0.0000**	**138.5072**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8432					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0192	0.1336	0.1590	2.6000e-004		8.2300e-003	8.2300e-003		8.2300e-003	8.2300e-003	0.0000	22.3410	22.3410	1.5300e-003	0.0000	22.3793
Total	**0.8623**	**0.1336**	**0.1590**	**2.6000e-004**		**8.2300e-003**	**8.2300e-003**		**8.2300e-003**	**8.2300e-003**	**0.0000**	**22.3410**	**22.3410**	**1.5300e-003**	**0.0000**	**22.3793**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0173	0.0113	0.1262	3.5000e-004	0.0366	2.6000e-004	0.0369	9.7400e-003	2.4000e-004	9.9800e-003	0.0000	31.3504	31.3504	8.2000e-004	0.0000	31.3710
Total	**0.0173**	**0.0113**	**0.1262**	**3.5000e-004**	**0.0366**	**2.6000e-004**	**0.0369**	**9.7400e-003**	**2.4000e-004**	**9.9800e-003**	**0.0000**	**31.3504**	**31.3504**	**8.2000e-004**	**0.0000**	**31.3710**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8432					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0192	0.1336	0.1590	2.6000e-004		8.2300e-003	8.2300e-003		8.2300e-003	8.2300e-003	0.0000	22.3409	22.3409	1.5300e-003	0.0000	22.3793
Total	**0.8623**	**0.1336**	**0.1590**	**2.6000e-004**		**8.2300e-003**	**8.2300e-003**		**8.2300e-003**	**8.2300e-003**	**0.0000**	**22.3409**	**22.3409**	**1.5300e-003**	**0.0000**	**22.3793**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0173	0.0113	0.1262	3.5000e-004	0.0338	2.6000e-004	0.0340	9.0400e-003	2.4000e-004	9.2800e-003	0.0000	31.3504	31.3504	8.2000e-004	0.0000	31.3710
Total	**0.0173**	**0.0113**	**0.1262**	**3.5000e-004**	**0.0338**	**2.6000e-004**	**0.0340**	**9.0400e-003**	**2.4000e-004**	**9.2800e-003**	**0.0000**	**31.3504**	**31.3504**	**8.2000e-004**	**0.0000**	**31.3710**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.2527					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.1831	0.2358	3.9000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	33.1923	33.1923	2.1600e-003	0.0000	33.2463
Total	**1.2793**	**0.1831**	**0.2358**	**3.9000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**33.1923**	**33.1923**	**2.1600e-003**	**0.0000**	**33.2463**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0240	0.0151	0.1723	5.0000e-004	0.0544	3.7000e-004	0.0548	0.0145	3.4000e-004	0.0148	0.0000	44.9094	44.9094	1.1000e-003	0.0000	44.9368
Total	**0.0240**	**0.0151**	**0.1723**	**5.0000e-004**	**0.0544**	**3.7000e-004**	**0.0548**	**0.0145**	**3.4000e-004**	**0.0148**	**0.0000**	**44.9094**	**44.9094**	**1.1000e-003**	**0.0000**	**44.9368**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.2527					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.1831	0.2358	3.9000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	33.1923	33.1923	2.1600e-003	0.0000	33.2463
Total	**1.2793**	**0.1831**	**0.2358**	**3.9000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**33.1923**	**33.1923**	**2.1600e-003**	**0.0000**	**33.2463**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0240	0.0151	0.1723	5.0000e-004	0.0502	3.7000e-004	0.0506	0.0134	3.4000e-004	0.0138	0.0000	44.9094	44.9094	1.1000e-003	0.0000	44.9368
Total	**0.0240**	**0.0151**	**0.1723**	**5.0000e-004**	**0.0502**	**3.7000e-004**	**0.0506**	**0.0134**	**3.4000e-004**	**0.0138**	**0.0000**	**44.9094**	**44.9094**	**1.1000e-003**	**0.0000**	**44.9368**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7324					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0146	0.0990	0.1376	2.3000e-004		5.3800e-003	5.3800e-003		5.3800e-003	5.3800e-003	0.0000	19.4047	19.4047	1.1600e-003	0.0000	19.4338
Total	**0.7469**	**0.0990**	**0.1376**	**2.3000e-004**		**5.3800e-003**	**5.3800e-003**		**5.3800e-003**	**5.3800e-003**	**0.0000**	**19.4047**	**19.4047**	**1.1600e-003**	**0.0000**	**19.4338**

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0131	7.9300e-003	0.0925	2.8000e-004	0.0318	2.1000e-004	0.0320	8.4600e-003	1.9000e-004	8.6600e-003	0.0000	25.2688	25.2688	5.8000e-004	0.0000	25.2832
Total	**0.0131**	**7.9300e-003**	**0.0925**	**2.8000e-004**	**0.0318**	**2.1000e-004**	**0.0320**	**8.4600e-003**	**1.9000e-004**	**8.6600e-003**	**0.0000**	**25.2688**	**25.2688**	**5.8000e-004**	**0.0000**	**25.2832**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7324					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0146	0.0990	0.1376	2.3000e-004		5.3800e-003	5.3800e-003		5.3800e-003	5.3800e-003	0.0000	19.4047	19.4047	1.1600e-003	0.0000	19.4337
Total	**0.7469**	**0.0990**	**0.1376**	**2.3000e-004**		**5.3800e-003**	**5.3800e-003**		**5.3800e-003**	**5.3800e-003**	**0.0000**	**19.4047**	**19.4047**	**1.1600e-003**	**0.0000**	**19.4337**

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0131	7.9300e-003	0.0925	2.8000e-004	0.0293	2.1000e-004	0.0296	7.8500e-003	1.9000e-004	8.0500e-003	0.0000	25.2688	25.2688	5.8000e-004	0.0000	25.2832
Total	**0.0131**	**7.9300e-003**	**0.0925**	**2.8000e-004**	**0.0293**	**2.1000e-004**	**0.0296**	**7.8500e-003**	**1.9000e-004**	**8.0500e-003**	**0.0000**	**25.2688**	**25.2688**	**5.8000e-004**	**0.0000**	**25.2832**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4555	2.3639	5.3211	0.0251	2.9466	0.0128	2.9595	0.7890	0.0119	0.8009	0.0000	2,322.3684	2,322.3684	0.0846	0.0000	2,324.4842
Unmitigated	0.4555	2.3639	5.3211	0.0251	2.9466	0.0128	2.9595	0.7890	0.0119	0.8009	0.0000	2,322.3684	2,322.3684	0.0846	0.0000	2,324.4842

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.93	23.21	17.07	13,157	13,157
Retirement Community	556.80	470.96	452.40	1,359,070	1,359,070
Single Family Housing	2,570.40	2,675.70	2327.40	6,545,448	6,545,448
Total	3,129.13	3,169.87	2,796.87	7,917,674	7,917,674

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	901.4776	901.4776	0.0443	9.1600e-003	905.3153
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	901.4776	901.4776	0.0443	9.1600e-003	905.3153
NaturalGas Mitigated	0.0528	0.4508	0.1918	2.8800e-003		0.0364	0.0364		0.0364	0.0364	0.0000	522.0192	522.0192	0.0100	9.5700e-003	525.1212
NaturalGas Unmitigated	0.0528	0.4508	0.1918	2.8800e-003		0.0364	0.0364		0.0364	0.0364	0.0000	522.0192	522.0192	0.0100	9.5700e-003	525.1212

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	2.8069e+006	0.0151	0.1293	0.0550	8.3000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	149.7870	149.7870	2.8700e-003	2.7500e-003	150.6772
Single Family Housing	6.97537e+006	0.0376	0.3214	0.1368	2.0500e-003		0.0260	0.0260		0.0260	0.0260	0.0000	372.2321	372.2321	7.1300e-003	6.8200e-003	374.4441
Total		**0.0528**	**0.4508**	**0.1918**	**2.8800e-003**		**0.0365**	**0.0365**		**0.0365**	**0.0365**	**0.0000**	**522.0192**	**522.0192**	**0.0100**	**9.5700e-003**	**525.1213**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	2.8069e+006	0.0151	0.1293	0.0550	8.3000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	149.7870	149.7870	2.8700e-003	2.7500e-003	150.6772
Single Family Housing	6.97537e+006	0.0376	0.3214	0.1368	2.0500e-003		0.0260	0.0260		0.0260	0.0260	0.0000	372.2321	372.2321	7.1300e-003	6.8200e-003	374.4441
Total		**0.0528**	**0.4508**	**0.1918**	**2.8800e-003**		**0.0365**	**0.0365**		**0.0365**	**0.0365**	**0.0000**	**522.0192**	**522.0192**	**0.0100**	**9.5700e-003**	**525.1213**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Retirement Community	1.08692e+006	291.0326	0.0143	2.9600e-003	292.2715
Single Family Housing	2.27982e+006	610.4450	0.0300	6.2000e-003	613.0437
Total		**901.4776**	**0.0443**	**9.1600e-003**	**905.3153**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Retirement Community	1.08692e+006	291.0326	0.0143	2.9600e-003	292.2715
Single Family Housing	2.27982e+006	610.4450	0.0300	6.2000e-003	613.0437
Total		**901.4776**	**0.0443**	**9.1600e-003**	**905.3153**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.4386	0.0595	5.1588	2.7000e-004		0.0287	0.0287		0.0287	0.0287	0.0000	8.4565	8.4565	8.0500e-003	0.0000	8.6577
Unmitigated	3.4386	0.0595	5.1588	2.7000e-004		0.0287	0.0287		0.0287	0.0287	0.0000	8.4565	8.4565	8.0500e-003	0.0000	8.6577

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4525					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.8318					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1543	0.0595	5.1588	2.7000e-004		0.0287	0.0287		0.0287	0.0287	0.0000	8.4565	8.4565	8.0500e-003	0.0000	8.6577
Total	**3.4386**	**0.0595**	**5.1588**	**2.7000e-004**		**0.0287**	**0.0287**		**0.0287**	**0.0287**	**0.0000**	**8.4565**	**8.4565**	**8.0500e-003**	**0.0000**	**8.6577**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4525					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.8318					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1543	0.0595	5.1588	2.7000e-004		0.0287	0.0287		0.0287	0.0287	0.0000	8.4565	8.4565	8.0500e-003	0.0000	8.6577
Total	**3.4386**	**0.0595**	**5.1588**	**2.7000e-004**		**0.0287**	**0.0287**		**0.0287**	**0.0287**	**0.0000**	**8.4565**	**8.4565**	**8.0500e-003**	**0.0000**	**8.6577**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	75.6711	0.0430	0.0258	84.4389
Unmitigated	75.6711	0.0430	0.0258	84.4389

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.21531	1.1389	6.0000e-005	1.0000e-005	1.1438
Retirement Community	15.1157 / 9.52948	34.4452	0.0198	0.0119	38.4950
Single Family Housing	17.5916 / 11.0903	40.0870	0.0231	0.0139	44.8002
Total		**75.6711**	**0.0430**	**0.0258**	**84.4389**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.21531	1.1389	6.0000e-005	1.0000e-005	1.1438
Retirement Community	15.1157 / 9.52948	34.4452	0.0198	0.0119	38.4950
Single Family Housing	17.5916 / 11.0903	40.0870	0.0231	0.0139	44.8002
Total		**75.6711**	**0.0430**	**0.0258**	**84.4389**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	77.7313	4.5938	0.0000	192.5761
Unmitigated	77.7313	4.5938	0.0000	192.5761

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Retirement Community	106.72	21.6632	1.2803	0.0000	53.6697
Single Family Housing	276.12	56.0499	3.3125	0.0000	138.8612
Total		**77.7313**	**4.5938**	**0.0000**	**192.5761**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Retirement Community	106.72	21.6632	1.2803	0.0000	53.6697
Single Family Housing	276.12	56.0499	3.3125	0.0000	138.8612
Total		**77.7313**	**4.5938**	**0.0000**	**192.5761**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	528.6770	0.0000	0.0000	528.6770

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	530.1 / 284.8	-1,057.2430	0.0000	0.0000	-1,057.2430
Total		**-1,057.2430**	**0.0000**	**0.0000**	**-1,057.2430**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	2240	1,585.9200	0.0000	0.0000	1,585.9200
Total		**1,585.9200**	**0.0000**	**0.0000**	**1,585.9200**

The Ranch - City of Rancho Cordova (Construction Only - Phase 1)

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	270.00	Dwelling Unit	28.61	486,000.00	767
Retirement Community	232.00	Dwelling Unit	28.62	232,000.00	463
City Park	1.02	Acre	1.23	44,576.40	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Estimated construction state date of January 2020 (provided by Applicant).

Land Use - This model run provides construction emissions only.

Construction Phase - Phase 1

Off-road Equipment -

Off-road Equipment - For building construction, assumes 1 crane, 2 forklifts, 1 generator set, 1 tractor/loader/backhoe, and 1 welder (as provided by the applicant)

Off-road Equipment -

Off-road Equipment - D

Off-road Equipment -
Off-road Equipment -

Trips and VMT - Assume grading truck haul length = 7 miles (Sacramento dump site).

Grading - Assume 148.53 (res./comm./right of way) this phase (includes phases 1 and 2). Assume 1/2 of site is exported during this this phase (152,708 CY / 2 = 76,354 CY). Total net export for entire project (152,708 CY) as provided by applicant.

Architectural Coating - Interior VOC limts reduced from 100 g/L to 50 g/L based on SMAQMD Rule 443 that provides a VOC limit for flat coatings of 50 g/L.

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust -

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 28.33% - reflects project person/du value (2.523) vs. statewide avg. (2.97) and latest statewide data (ARB). Parking Degreaser EF red. by 57.5% (corrects for walking paths modeled as 'parking lot').

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%. NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15

tblConstructionPhase	NumDays	40.00	64.00
tblConstructionPhase	NumDays	110.00	153.00
tblConstructionPhase	NumDays	75.00	65.00
tblConstructionPhase	NumDays	1,110.00	586.00
tblConstructionPhase	NumDays	75.00	587.00
tblConstructionPhase	PhaseEndDate	2/25/2020	3/30/2020
tblConstructionPhase	PhaseEndDate	7/28/2020	10/30/2020
tblConstructionPhase	PhaseEndDate	2/11/2025	1/29/2021
tblConstructionPhase	PhaseEndDate	10/29/2024	5/1/2023
tblConstructionPhase	PhaseEndDate	5/27/2025	8/1/2023
tblConstructionPhase	PhaseStartDate	2/26/2020	4/1/2020
tblConstructionPhase	PhaseStartDate	10/30/2024	11/1/2020
tblConstructionPhase	PhaseStartDate	7/29/2020	2/1/2021
tblConstructionPhase	PhaseStartDate	2/12/2025	5/2/2021
tblGrading	AcresOfGrading	382.50	148.53
tblLandUse	LandUseSquareFeet	44,431.20	44,576.40
tblLandUse	LotAcreage	87.66	28.61
tblLandUse	LotAcreage	46.40	28.62
tblLandUse	LotAcreage	1.02	1.23
tblLandUse	Population	721.00	767.00
tblLandUse	Population	619.00	463.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblTripsAndVMT	HaulingTripNumber	0.00	9,544.00
tblTripsAndVMT	VendorTripNumber	61.00	0.00
tblTripsAndVMT	VendorTripNumber	61.00	0.00
tblTripsAndVMT	WorkerTripNumber	283.00	15.00
tblTripsAndVMT	WorkerTripNumber	283.00	15.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	5.0102	67.5510	36.5623	0.1130	18.2032	2.2382	20.4016	9.9670	2.0615	11.9895	0.0000	11,459.8154	11,459.8154	2.2472	0.0000	11,515.9945
2021	14.6830	38.7640	45.6792	0.0962	7.8441	1.7662	9.6103	1.9966	1.6525	3.6491	0.0000	9,473.0105	9,473.0105	1.5118	0.0000	9,510.8061
2022	14.2089	34.6567	44.3924	0.0951	7.8440	1.4919	9.3359	1.9966	1.3965	3.3931	0.0000	9,358.8113	9,358.8113	1.4968	0.0000	9,396.2304
2023	13.8653	31.4350	43.3006	0.0938	7.8440	1.3058	9.1497	1.9966	1.2219	3.2185	0.0000	9,227.5454	9,227.5454	1.4755	0.0000	9,264.4330
Maximum	**14.6830**	**67.5510**	**45.6792**	**0.1130**	**18.2032**	**2.2382**	**20.4016**	**9.9670**	**2.0615**	**11.9895**	**0.0000**	**11,459.8154**	**11,459.8154**	**2.2472**	**0.0000**	**11,515.9945**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	5.0102	67.5510	36.5623	0.1130	8.2560	2.2382	10.4544	4.5025	2.0615	6.5250	0.0000	11,459.8154	11,459.8154	2.2472	0.0000	11,515.9945
2021	14.6830	38.7640	45.6792	0.0962	7.1807	1.7662	8.9470	1.8338	1.6525	3.4863	0.0000	9,473.0105	9,473.0105	1.5118	0.0000	9,510.8061
2022	14.2089	34.6567	44.3924	0.0951	7.1807	1.4919	8.6726	1.8338	1.3965	3.2303	0.0000	9,358.8113	9,358.8113	1.4968	0.0000	9,396.2303
2023	13.8653	31.4350	43.3006	0.0938	7.1807	1.3058	8.4864	1.8338	1.2219	3.0557	0.0000	9,227.5454	9,227.5454	1.4755	0.0000	9,264.4330
Maximum	**14.6830**	**67.5510**	**45.6792**	**0.1130**	**8.2560**	**2.2382**	**10.4544**	**4.5025**	**2.0615**	**6.5250**	**0.0000**	**11,459.8154**	**11,459.8154**	**2.2472**	**0.0000**	**11,515.9945**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**28.60**	**0.00**	**24.61**	**37.31**	**0.00**	**26.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	19.2304	0.4761	41.2702	2.1900e-003		0.2297	0.2297		0.2297	0.2297	0.0000	74.5735	74.5735	0.0710	0.0000	76.3482
Energy	0.2890	2.4699	1.0510	0.0158		0.1997	0.1997		0.1997	0.1997		3,153.0280	3,153.0280	0.0604	0.0578	3,171.7649
Mobile	3.3740	13.3563	34.9432	0.1564	17.6509	0.0741	17.7250	4.7125	0.0689	4.7814		15,939.6108	15,939.6108	0.5453		15,953.2438
Total	**22.8935**	**16.3024**	**77.2643**	**0.1744**	**17.6509**	**0.5035**	**18.1544**	**4.7125**	**0.4982**	**5.2107**	**0.0000**	**19,167.2123**	**19,167.2123**	**0.6767**	**0.0578**	**19,201.3568**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	19.2304	0.4761	41.2702	2.1900e-003		0.2297	0.2297		0.2297	0.2297	0.0000	74.5735	74.5735	0.0710	0.0000	76.3482
Energy	0.2890	2.4699	1.0510	0.0158		0.1997	0.1997		0.1997	0.1997		3,153.0280	3,153.0280	0.0604	0.0578	3,171.7649
Mobile	3.3740	13.3563	34.9432	0.1564	17.6509	0.0741	17.7250	4.7125	0.0689	4.7814		15,939.6108	15,939.6108	0.5453		15,953.2438
Total	**22.8935**	**16.3024**	**77.2643**	**0.1744**	**17.6509**	**0.5035**	**18.1544**	**4.7125**	**0.4982**	**5.2107**	**0.0000**	**19,167.2123**	**19,167.2123**	**0.6767**	**0.0578**	**19,201.3568**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2020	3/30/2020	5	64	
2	Grading	Grading	4/1/2020	10/30/2020	5	153	
3	Paving	Paving	11/1/2020	1/29/2021	5	65	
4	Building Construction	Building Construction	2/1/2021	5/1/2023	5	586	
5	Architectural Coating	Architectural Coating	5/2/2021	8/1/2023	5	587	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 148.53

Acres of Paving: 0

Residential Indoor: 1,453,950; Residential Outdoor: 484,650; Non-Residential Indoor: 10,500; Non-Residential Outdoor: 3,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

The Ranch - City of Rancho Cordova (Construction Only - Phase 1) - Sacramento County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Pavers	2	8.00	130	0.42
Building Construction	Paving Equipment	2	8.00	132	0.36
Building Construction	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	9,544.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	15	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	15	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	15	283.00	61.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	57.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0776	0.0412	0.5877	1.4400e-003	0.1369	9.5000e-004	0.1379	0.0363	8.8000e-004	0.0372		142.8323	142.8323	4.0900e-003		142.9346
Total	**0.0776**	**0.0412**	**0.5877**	**1.4400e-003**	**0.1369**	**9.5000e-004**	**0.1379**	**0.0363**	**8.8000e-004**	**0.0372**		**142.8323**	**142.8323**	**4.0900e-003**		**142.9346**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**8.1298**	**2.1974**	**10.3272**	**4.4688**	**2.0216**	**6.4904**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0776	0.0412	0.5877	1.4400e-003	0.1262	9.5000e-004	0.1272	0.0337	8.8000e-004	0.0346		142.8323	142.8323	4.0900e-003		142.9346
Total	**0.0776**	**0.0412**	**0.5877**	**1.4400e-003**	**0.1262**	**9.5000e-004**	**0.1272**	**0.0337**	**8.8000e-004**	**0.0346**		**142.8323**	**142.8323**	**4.0900e-003**		**142.9346**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0516	0.0000	7.0516	3.4214	0.0000	3.4214			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**7.0516**	**2.1739**	**9.2255**	**3.4214**	**2.0000**	**5.4214**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4739	17.3077	3.9510	0.0494	1.0852	0.0633	1.1485	0.2970	0.0605	0.3575		5,295.2475	5,295.2475	0.3002		5,302.7525
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0862	0.0458	0.6530	1.5900e-003	0.1521	1.0600e-003	0.1532	0.0404	9.7000e-004	0.0413		158.7026	158.7026	4.5500e-003		158.8163
Total	**0.5601**	**17.3535**	**4.6040**	**0.0510**	**1.2374**	**0.0643**	**1.3017**	**0.3374**	**0.0615**	**0.3989**		**5,453.9501**	**5,453.9501**	**0.3048**		**5,461.5688**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1732	0.0000	3.1732	1.5396	0.0000	1.5396			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**3.1732**	**2.1739**	**5.3471**	**1.5396**	**2.0000**	**3.5396**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4739	17.3077	3.9510	0.0494	1.0110	0.0633	1.0743	0.2788	0.0605	0.3393		5,295.2475	5,295.2475	0.3002		5,302.7525
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0862	0.0458	0.6530	1.5900e-003	0.1402	1.0600e-003	0.1413	0.0374	9.7000e-004	0.0384		158.7026	158.7026	4.5500e-003		158.8163
Total	**0.5601**	**17.3535**	**4.6040**	**0.0510**	**1.1512**	**0.0643**	**1.2156**	**0.3162**	**0.0615**	**0.3777**		**5,453.9501**	**5,453.9501**	**0.3048**		**5,461.5688**

3.4 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**		**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

3.4 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0647	0.0343	0.4898	1.2000e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		119.0269	119.0269	3.4100e-003		119.1122
Total	**0.0647**	**0.0343**	**0.4898**	**1.2000e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**119.0269**	**119.0269**	**3.4100e-003**		**119.1122**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**	**0.0000**	**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

3.4 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0647	0.0343	0.4898	1.2000e-003	0.1052	7.9000e-004	0.1060	0.0281	7.3000e-004	0.0288		119.0269	119.0269	3.4100e-003		119.1122
Total	**0.0647**	**0.0343**	**0.4898**	**1.2000e-003**	**0.1052**	**7.9000e-004**	**0.1060**	**0.0281**	**7.3000e-004**	**0.0288**		**119.0269**	**119.0269**	**3.4100e-003**		**119.1122**

3.4 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

3.4 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0601	0.0308	0.4487	1.1500e-003	0.1141	7.7000e-004	0.1149	0.0303	7.1000e-004	0.0310		114.9719	114.9719	3.0600e-003		115.0483
Total	**0.0601**	**0.0308**	**0.4487**	**1.1500e-003**	**0.1141**	**7.7000e-004**	**0.1149**	**0.0303**	**7.1000e-004**	**0.0310**		**114.9719**	**114.9719**	**3.0600e-003**		**115.0483**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

3.4 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0601	0.0308	0.4487	1.1500e-003	0.1052	7.7000e-004	0.1060	0.0281	7.1000e-004	0.0288		114.9719	114.9719	3.0600e-003		115.0483
Total	**0.0601**	**0.0308**	**0.4487**	**1.1500e-003**	**0.1052**	**7.7000e-004**	**0.1060**	**0.0281**	**7.1000e-004**	**0.0288**		**114.9719**	**114.9719**	**3.0600e-003**		**115.0483**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1565	30.3512	31.2284	0.0497		1.6363	1.6363		1.5248	1.5248		4,760.5748	4,760.5748	1.3299		4,793.8216
Total	**3.1565**	**30.3512**	**31.2284**	**0.0497**		**1.6363**	**1.6363**		**1.5248**	**1.5248**		**4,760.5748**	**4,760.5748**	**1.3299**		**4,793.8216**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1885	6.1269	1.5645	0.0151	0.8913	0.0168	0.9081	0.2343	0.0161	0.2504		1,595.0152	1,595.0152	0.0872		1,597.1946
Worker	1.2545	0.6422	9.3635	0.0241	6.5192	0.0161	6.5353	1.6473	0.0148	1.6621		2,399.0794	2,399.0794	0.0638		2,400.6754
Total	**1.4430**	**6.7690**	**10.9280**	**0.0392**	**7.4105**	**0.0329**	**7.4433**	**1.8816**	**0.0309**	**1.9125**		**3,994.0946**	**3,994.0946**	**0.1510**		**3,997.8699**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1565	30.3512	31.2284	0.0497		1.6363	1.6363		1.5248	1.5248	0.0000	4,760.5748	4,760.5748	1.3299		4,793.8216
Total	**3.1565**	**30.3512**	**31.2284**	**0.0497**		**1.6363**	**1.6363**		**1.5248**	**1.5248**	**0.0000**	**4,760.5748**	**4,760.5748**	**1.3299**		**4,793.8216**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1885	6.1269	1.5645	0.0151	0.8205	0.0168	0.8373	0.2169	0.0161	0.2330		1,595.0152	1,595.0152	0.0872		1,597.1946
Worker	1.2545	0.6422	9.3635	0.0241	5.9605	0.0161	5.9766	1.5102	0.0148	1.5250		2,399.0794	2,399.0794	0.0638		2,400.6754
Total	**1.4430**	**6.7690**	**10.9280**	**0.0392**	**6.7810**	**0.0329**	**6.8139**	**1.7271**	**0.0309**	**1.7580**		**3,994.0946**	**3,994.0946**	**0.1510**		**3,997.8699**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.8091	26.7405	30.9439	0.0497		1.3769	1.3769		1.2836	1.2836		4,761.9939	4,761.9939	1.3260		4,795.1426
Total	**2.8091**	**26.7405**	**30.9439**	**0.0497**		**1.3769**	**1.3769**		**1.2836**	**1.2836**		**4,761.9939**	**4,761.9939**	**1.3260**		**4,795.1426**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1749	5.8249	1.4415	0.0149	0.8912	0.0147	0.9060	0.2343	0.0141	0.2484		1,581.1018	1,581.1018	0.0847		1,583.2183
Worker	1.1709	0.5776	8.6231	0.0232	6.5192	0.0157	6.5349	1.6473	0.0144	1.6617		2,313.0426	2,313.0426	0.0574		2,314.4771
Total	**1.3459**	**6.4025**	**10.0646**	**0.0381**	**7.4104**	**0.0304**	**7.4408**	**1.8816**	**0.0285**	**1.9101**		**3,894.1443**	**3,894.1443**	**0.1420**		**3,897.6954**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.8091	26.7405	30.9439	0.0497		1.3769	1.3769		1.2836	1.2836	0.0000	4,761.9939	4,761.9939	1.3260		4,795.1426
Total	**2.8091**	**26.7405**	**30.9439**	**0.0497**		**1.3769**	**1.3769**		**1.2836**	**1.2836**	**0.0000**	**4,761.9939**	**4,761.9939**	**1.3260**		**4,795.1426**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1749	5.8249	1.4415	0.0149	0.8205	0.0147	0.8352	0.2169	0.0141	0.2310		1,581.1018	1,581.1018	0.0847		1,583.2183
Worker	1.1709	0.5776	8.6231	0.0232	5.9605	0.0157	5.9762	1.5102	0.0144	1.5246		2,313.0426	2,313.0426	0.0574		2,314.4771
Total	**1.3459**	**6.4025**	**10.0646**	**0.0381**	**6.7810**	**0.0304**	**6.8114**	**1.7271**	**0.0285**	**1.7556**		**3,894.1443**	**3,894.1443**	**0.1420**		**3,897.6954**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6055	24.5765	30.8282	0.0498		1.2099	1.2099		1.1278	1.1278		4,762.7941	4,762.7941	1.3218		4,795.8396
Total	**2.6055**	**24.5765**	**30.8282**	**0.0498**		**1.2099**	**1.2099**		**1.1278**	**1.1278**		**4,762.7941**	**4,762.7941**	**1.3218**		**4,795.8396**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1382	4.9409	1.2787	0.0146	0.8912	6.9400e-003	0.8981	0.2343	6.6400e-003	0.2409		1,551.8329	1,551.8329	0.0760		1,553.7338
Worker	1.0945	0.5199	7.9372	0.0224	6.5192	0.0153	6.5345	1.6473	0.0141	1.6614		2,226.0817	2,226.0817	0.0514		2,227.3677
Total	**1.2327**	**5.4608**	**9.2159**	**0.0370**	**7.4104**	**0.0222**	**7.4326**	**1.8816**	**0.0207**	**1.9023**		**3,777.9146**	**3,777.9146**	**0.1275**		**3,781.1015**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6055	24.5765	30.8282	0.0498		1.2099	1.2099		1.1278	1.1278	0.0000	4,762.7941	4,762.7941	1.3218		4,795.8396
Total	**2.6055**	**24.5765**	**30.8282**	**0.0498**		**1.2099**	**1.2099**		**1.1278**	**1.1278**	**0.0000**	**4,762.7941**	**4,762.7941**	**1.3218**		**4,795.8396**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1382	4.9409	1.2787	0.0146	0.8204	6.9400e-003	0.8274	0.2169	6.6400e-003	0.2235		1,551.8329	1,551.8329	0.0760		1,553.7338
Worker	1.0945	0.5199	7.9372	0.0224	5.9605	0.0153	5.9758	1.5102	0.0141	1.5243		2,226.0817	2,226.0817	0.0514		2,227.3677
Total	**1.2327**	**5.4608**	**9.2159**	**0.0370**	**6.7810**	**0.0222**	**6.8032**	**1.7271**	**0.0207**	**1.7478**		**3,777.9146**	**3,777.9146**	**0.1275**		**3,781.1015**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.6362					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**9.8551**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2285	0.1169	1.7052	4.3900e-003	0.4336	2.9300e-003	0.4365	0.1150	2.7000e-003	0.1177		436.8931	436.8931	0.0116		437.1837
Total	**0.2285**	**0.1169**	**1.7052**	**4.3900e-003**	**0.4336**	**2.9300e-003**	**0.4365**	**0.1150**	**2.7000e-003**	**0.1177**		**436.8931**	**436.8931**	**0.0116**		**437.1837**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.6362					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**9.8551**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2285	0.1169	1.7052	4.3900e-003	0.3997	2.9300e-003	0.4026	0.1067	2.7000e-003	0.1094		436.8931	436.8931	0.0116		437.1837
Total	**0.2285**	**0.1169**	**1.7052**	**4.3900e-003**	**0.3997**	**2.9300e-003**	**0.4026**	**0.1067**	**2.7000e-003**	**0.1094**		**436.8931**	**436.8931**	**0.0116**		**437.1837**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.6362					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**9.8407**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2132	0.1052	1.5703	4.2300e-003	0.4336	2.8500e-003	0.4365	0.1150	2.6300e-003	0.1176		421.2250	421.2250	0.0105		421.4863
Total	**0.2132**	**0.1052**	**1.5703**	**4.2300e-003**	**0.4336**	**2.8500e-003**	**0.4365**	**0.1150**	**2.6300e-003**	**0.1176**		**421.2250**	**421.2250**	**0.0105**		**421.4863**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.6362					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**9.8407**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2132	0.1052	1.5703	4.2300e-003	0.3997	2.8500e-003	0.4025	0.1067	2.6300e-003	0.1093		421.2250	421.2250	0.0105		421.4863
Total	**0.2132**	**0.1052**	**1.5703**	**4.2300e-003**	**0.3997**	**2.8500e-003**	**0.4025**	**0.1067**	**2.6300e-003**	**0.1093**		**421.2250**	**421.2250**	**0.0105**		**421.4863**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.6362					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**9.8278**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1993	0.0947	1.4454	4.0700e-003	0.4336	2.7800e-003	0.4364	0.1150	2.5600e-003	0.1176		405.3887	405.3887	9.3700e-003		405.6229
Total	**0.1993**	**0.0947**	**1.4454**	**4.0700e-003**	**0.4336**	**2.7800e-003**	**0.4364**	**0.1150**	**2.5600e-003**	**0.1176**		**405.3887**	**405.3887**	**9.3700e-003**		**405.6229**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.6362					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**9.8278**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1993	0.0947	1.4454	4.0700e-003	0.3997	2.7800e-003	0.4025	0.1067	2.5600e-003	0.1093		405.3887	405.3887	9.3700e-003		405.6229
Total	**0.1993**	**0.0947**	**1.4454**	**4.0700e-003**	**0.3997**	**2.7800e-003**	**0.4025**	**0.1067**	**2.5600e-003**	**0.1093**		**405.3887**	**405.3887**	**9.3700e-003**		**405.6229**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.3740	13.3563	34.9432	0.1564	17.6509	0.0741	17.7250	4.7125	0.0689	4.7814		15,939.6108	15,939.6108	0.5453		15,953.2438
Unmitigated	3.3740	13.3563	34.9432	0.1564	17.6509	0.0741	17.7250	4.7125	0.0689	4.7814		15,939.6108	15,939.6108	0.5453		15,953.2438

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.93	23.21	17.07	13,157	13,157
Retirement Community	556.80	470.96	452.40	1,359,070	1,359,070
Single Family Housing	2,570.40	2,675.70	2327.40	6,545,448	6,545,448
Total	3,129.13	3,169.87	2,796.87	7,917,674	7,917,674

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2890	2.4699	1.0510	0.0158		0.1997	0.1997		0.1997	0.1997		3,153.0280	3,153.0280	0.0604	0.0578	3,171.7649
NaturalGas Unmitigated	0.2890	2.4699	1.0510	0.0158		0.1997	0.1997		0.1997	0.1997		3,153.0280	3,153.0280	0.0604	0.0578	3,171.7649

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	7690.15	0.0829	0.7087	0.3016	4.5200e-003		0.0573	0.0573		0.0573	0.0573		904.7230	904.7230	0.0173	0.0166	910.0993
Single Family Housing	19110.6	0.2061	1.7612	0.7494	0.0112		0.1424	0.1424		0.1424	0.1424		2,248.3050	2,248.3050	0.0431	0.0412	2,261.6656
Total		**0.2890**	**2.4699**	**1.0510**	**0.0158**		**0.1997**	**0.1997**		**0.1997**	**0.1997**		**3,153.0280**	**3,153.0280**	**0.0604**	**0.0578**	**3,171.7649**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	7.69015	0.0829	0.7087	0.3016	4.5200e-003		0.0573	0.0573		0.0573	0.0573		904.7230	904.7230	0.0173	0.0166	910.0993
Single Family Housing	19.1106	0.2061	1.7612	0.7494	0.0112		0.1424	0.1424		0.1424	0.1424		2,248.3050	2,248.3050	0.0431	0.0412	2,261.6656
Total		**0.2890**	**2.4699**	**1.0510**	**0.0158**		**0.1997**	**0.1997**		**0.1997**	**0.1997**		**3,153.0280**	**3,153.0280**	**0.0604**	**0.0578**	**3,171.7649**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	19.2304	0.4761	41.2702	2.1900e-003		0.2297	0.2297		0.2297	0.2297	0.0000	74.5735	74.5735	0.0710	0.0000	76.3482
Unmitigated	19.2304	0.4761	41.2702	2.1900e-003		0.2297	0.2297		0.2297	0.2297	0.0000	74.5735	74.5735	0.0710	0.0000	76.3482

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.4795					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	15.5169					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.2340	0.4761	41.2702	2.1900e-003		0.2297	0.2297		0.2297	0.2297		74.5735	74.5735	0.0710		76.3482
Total	**19.2304**	**0.4761**	**41.2702**	**2.1900e-003**		**0.2297**	**0.2297**		**0.2297**	**0.2297**	**0.0000**	**74.5735**	**74.5735**	**0.0710**	**0.0000**	**76.3482**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.4795					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	15.5169					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.2340	0.4761	41.2702	2.1900e-003		0.2297	0.2297		0.2297	0.2297		74.5735	74.5735	0.0710		76.3482
Total	**19.2304**	**0.4761**	**41.2702**	**2.1900e-003**		**0.2297**	**0.2297**		**0.2297**	**0.2297**	**0.0000**	**74.5735**	**74.5735**	**0.0710**	**0.0000**	**76.3482**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

The Ranch - City of Rancho Cordova (Construction Only - Phase 1)

Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	270.00	Dwelling Unit	28.61	486,000.00	767
Retirement Community	232.00	Dwelling Unit	28.62	232,000.00	463
City Park	1.02	Acre	1.23	44,576.40	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Estimated construction state date of January 2020 (provided by Applicant).

Land Use - This model run provides construction emissions only.

Construction Phase - Phase 1

Off-road Equipment -

Off-road Equipment - For building construction, assumes 1 crane, 2 forklifts, 1 generator set, 1 tractor/loader/backhoe, and 1 welder (as provided by the applicant)

Off-road Equipment -

Off-road Equipment - D

Off-road Equipment -
Off-road Equipment -

Trips and VMT - Assume grading truck haul length = 7 miles (Sacramento dump site).

Grading - Assume 148.53 (res./comm./right of way) this phase (includes phases 1 and 2). Assume 1/2 of site is exported during this this phase (152,708 CY / 2 = 76,354 CY). Total net export for entire project (152,708 CY) as provided by applicant.

Architectural Coating - Interior VOC limts reduced from 100 g/L to 50 g/L based on SMAQMD Rule 443 that provides a VOC limit for flat coatings of 50 g/L.

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust -

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 28.33% - reflects project person/du value (2.523) vs. statewide avg. (2.97) and latest statewide data (ARB). Parking Degreaser EF red. by 57.5% (corrects for walking paths modeled as 'parking lot').

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%. NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15

tblConstructionPhase	NumDays	40.00	64.00
tblConstructionPhase	NumDays	110.00	153.00
tblConstructionPhase	NumDays	75.00	65.00
tblConstructionPhase	NumDays	1,110.00	586.00
tblConstructionPhase	NumDays	75.00	587.00
tblConstructionPhase	PhaseEndDate	2/25/2020	3/30/2020
tblConstructionPhase	PhaseEndDate	7/28/2020	10/30/2020
tblConstructionPhase	PhaseEndDate	2/11/2025	1/29/2021
tblConstructionPhase	PhaseEndDate	10/29/2024	5/1/2023
tblConstructionPhase	PhaseEndDate	5/27/2025	8/1/2023
tblConstructionPhase	PhaseStartDate	2/26/2020	4/1/2020
tblConstructionPhase	PhaseStartDate	10/30/2024	11/1/2020
tblConstructionPhase	PhaseStartDate	7/29/2020	2/1/2021
tblConstructionPhase	PhaseStartDate	2/12/2025	5/2/2021
tblGrading	AcresOfGrading	382.50	148.53
tblLandUse	LandUseSquareFeet	44,431.20	44,576.40
tblLandUse	LotAcreage	87.66	28.61
tblLandUse	LotAcreage	46.40	28.62
tblLandUse	LotAcreage	1.02	1.23
tblLandUse	Population	721.00	767.00
tblLandUse	Population	619.00	463.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblTripsAndVMT	HaulingTripNumber	0.00	9,544.00
tblTripsAndVMT	VendorTripNumber	61.00	0.00
tblTripsAndVMT	VendorTripNumber	61.00	0.00
tblTripsAndVMT	WorkerTripNumber	283.00	15.00
tblTripsAndVMT	WorkerTripNumber	283.00	15.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	5.0184	68.2687	36.7453	0.1121	18.2032	2.2403	20.4016	9.9670	2.0635	11.9895	0.0000	11,359.1594	11,359.1594	2.2605	0.0000	11,415.6713
2021	14.5769	39.0432	44.3015	0.0924	7.8441	1.7673	9.6114	1.9966	1.6535	3.6501	0.0000	9,086.7181	9,086.7181	1.5100	0.0000	9,124.4673
2022	14.1122	34.9022	43.0883	0.0914	7.8440	1.4928	9.3369	1.9966	1.3974	3.3940	0.0000	8,985.1495	8,985.1495	1.4955	0.0000	9,022.5377
2023	13.7769	31.6284	42.0463	0.0902	7.8440	1.3064	9.1503	1.9966	1.2225	3.2191	0.0000	8,867.3950	8,867.3950	1.4740	0.0000	8,904.2455
Maximum	**14.5769**	**68.2687**	**44.3015**	**0.1121**	**18.2032**	**2.2403**	**20.4016**	**9.9670**	**2.0635**	**11.9895**	**0.0000**	**11,359.1594**	**11,359.1594**	**2.2605**	**0.0000**	**11,415.6713**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	5.0184	68.2687	36.7453	0.1121	8.2560	2.2403	10.4544	4.5025	2.0635	6.5250	0.0000	11,359.1594	11,359.1594	2.2605	0.0000	11,415.6713
2021	14.5769	39.0432	44.3015	0.0924	7.1807	1.7673	8.9480	1.8338	1.6535	3.4873	0.0000	9,086.7181	9,086.7181	1.5100	0.0000	9,124.4673
2022	14.1122	34.9022	43.0883	0.0914	7.1807	1.4928	8.6735	1.8338	1.3974	3.2312	0.0000	8,985.1495	8,985.1495	1.4955	0.0000	9,022.5377
2023	13.7769	31.6284	42.0463	0.0902	7.1807	1.3064	8.4870	1.8338	1.2225	3.0563	0.0000	8,867.3949	8,867.3949	1.4740	0.0000	8,904.2455
Maximum	**14.5769**	**68.2687**	**44.3015**	**0.1121**	**8.2560**	**2.2403**	**10.4544**	**4.5025**	**2.0635**	**6.5250**	**0.0000**	**11,359.1594**	**11,359.1594**	**2.2605**	**0.0000**	**11,415.6713**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**28.60**	**0.00**	**24.61**	**37.31**	**0.00**	**26.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	19.2304	0.4761	41.2702	2.1900e-003		0.2297	0.2297		0.2297	0.2297	0.0000	74.5735	74.5735	0.0710	0.0000	76.3482
Energy	0.2890	2.4699	1.0510	0.0158		0.1997	0.1997		0.1997	0.1997		3,153.0280	3,153.0280	0.0604	0.0578	3,171.7649
Mobile	2.4533	13.8980	31.5599	0.1419	17.6509	0.0745	17.7253	4.7125	0.0692	4.7817		14,485.7439	14,485.7439	0.5530		14,499.5686
Total	**21.9728**	**16.8440**	**73.8811**	**0.1599**	**17.6509**	**0.5038**	**18.1547**	**4.7125**	**0.4986**	**5.2111**	**0.0000**	**17,713.3454**	**17,713.3454**	**0.6844**	**0.0578**	**17,747.6817**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	19.2304	0.4761	41.2702	2.1900e-003		0.2297	0.2297		0.2297	0.2297	0.0000	74.5735	74.5735	0.0710	0.0000	76.3482
Energy	0.2890	2.4699	1.0510	0.0158		0.1997	0.1997		0.1997	0.1997		3,153.0280	3,153.0280	0.0604	0.0578	3,171.7649
Mobile	2.4533	13.8980	31.5599	0.1419	17.6509	0.0745	17.7253	4.7125	0.0692	4.7817		14,485.7439	14,485.7439	0.5530		14,499.5686
Total	**21.9728**	**16.8440**	**73.8811**	**0.1599**	**17.6509**	**0.5038**	**18.1547**	**4.7125**	**0.4986**	**5.2111**	**0.0000**	**17,713.3454**	**17,713.3454**	**0.6844**	**0.0578**	**17,747.6817**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2020	3/30/2020	5	64	
2	Grading	Grading	4/1/2020	10/30/2020	5	153	
3	Paving	Paving	11/1/2020	1/29/2021	5	65	
4	Building Construction	Building Construction	2/1/2021	5/1/2023	5	586	
5	Architectural Coating	Architectural Coating	5/2/2021	8/1/2023	5	587	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 148.53

Acres of Paving: 0

Residential Indoor: 1,453,950; Residential Outdoor: 484,650; Non-Residential Indoor: 10,500; Non-Residential Outdoor: 3,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Pavers	2	8.00	130	0.42
Building Construction	Paving Equipment	2	8.00	132	0.36
Building Construction	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	9,544.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	15	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	15	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	15	283.00	61.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	57.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0714	0.0509	0.5032	1.2600e-003	0.1369	9.5000e-004	0.1379	0.0363	8.8000e-004	0.0372		125.4399	125.4399	3.6100e-003		125.5301
Total	**0.0714**	**0.0509**	**0.5032**	**1.2600e-003**	**0.1369**	**9.5000e-004**	**0.1379**	**0.0363**	**8.8000e-004**	**0.0372**		**125.4399**	**125.4399**	**3.6100e-003**		**125.5301**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**8.1298**	**2.1974**	**10.3272**	**4.4688**	**2.0216**	**6.4904**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0714	0.0509	0.5032	1.2600e-003	0.1262	9.5000e-004	0.1272	0.0337	8.8000e-004	0.0346		125.4399	125.4399	3.6100e-003		125.5301
Total	**0.0714**	**0.0509**	**0.5032**	**1.2600e-003**	**0.1262**	**9.5000e-004**	**0.1272**	**0.0337**	**8.8000e-004**	**0.0346**		**125.4399**	**125.4399**	**3.6100e-003**		**125.5301**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0516	0.0000	7.0516	3.4214	0.0000	3.4214			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**7.0516**	**2.1739**	**9.2255**	**3.4214**	**2.0000**	**5.4214**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4889	18.0147	4.2279	0.0487	1.0852	0.0654	1.1506	0.2970	0.0625	0.3595		5,213.9165	5,213.9165	0.3141		5,221.7677
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0794	0.0565	0.5591	1.4000e-003	0.1521	1.0600e-003	0.1532	0.0404	9.7000e-004	0.0413		139.3777	139.3777	4.0100e-003		139.4779
Total	**0.5683**	**18.0712**	**4.7870**	**0.0501**	**1.2374**	**0.0664**	**1.3038**	**0.3374**	**0.0635**	**0.4009**		**5,353.2942**	**5,353.2942**	**0.3181**		**5,361.2456**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1732	0.0000	3.1732	1.5396	0.0000	1.5396			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**3.1732**	**2.1739**	**5.3471**	**1.5396**	**2.0000**	**3.5396**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4889	18.0147	4.2279	0.0487	1.0110	0.0654	1.0764	0.2788	0.0625	0.3413		5,213.9165	5,213.9165	0.3141		5,221.7677
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0794	0.0565	0.5591	1.4000e-003	0.1402	1.0600e-003	0.1413	0.0374	9.7000e-004	0.0384		139.3777	139.3777	4.0100e-003		139.4779
Total	**0.5683**	**18.0712**	**4.7870**	**0.0501**	**1.1512**	**0.0664**	**1.2177**	**0.3162**	**0.0635**	**0.3797**		**5,353.2942**	**5,353.2942**	**0.3181**		**5,361.2456**

3.4 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**		**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

3.4 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0595	0.0424	0.4194	1.0500e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		104.5333	104.5333	3.0100e-003		104.6084
Total	**0.0595**	**0.0424**	**0.4194**	**1.0500e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**104.5333**	**104.5333**	**3.0100e-003**		**104.6084**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**	**0.0000**	**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

3.4 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0595	0.0424	0.4194	1.0500e-003	0.1052	7.9000e-004	0.1060	0.0281	7.3000e-004	0.0288		104.5333	104.5333	3.0100e-003		104.6084
Total	**0.0595**	**0.0424**	**0.4194**	**1.0500e-003**	**0.1052**	**7.9000e-004**	**0.1060**	**0.0281**	**7.3000e-004**	**0.0288**		**104.5333**	**104.5333**	**3.0100e-003**		**104.6084**

3.4 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

3.4 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0554	0.0380	0.3827	1.0100e-003	0.1141	7.7000e-004	0.1149	0.0303	7.1000e-004	0.0310		100.9746	100.9746	2.6900e-003		101.0419
Total	**0.0554**	**0.0380**	**0.3827**	**1.0100e-003**	**0.1141**	**7.7000e-004**	**0.1149**	**0.0303**	**7.1000e-004**	**0.0310**		**100.9746**	**100.9746**	**2.6900e-003**		**101.0419**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

3.4 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0554	0.0380	0.3827	1.0100e-003	0.1052	7.7000e-004	0.1060	0.0281	7.1000e-004	0.0288		100.9746	100.9746	2.6900e-003		101.0419
Total	**0.0554**	**0.0380**	**0.3827**	**1.0100e-003**	**0.1052**	**7.7000e-004**	**0.1060**	**0.0281**	**7.1000e-004**	**0.0288**		**100.9746**	**100.9746**	**2.6900e-003**		**101.0419**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1565	30.3512	31.2284	0.0497		1.6363	1.6363		1.5248	1.5248		4,760.5748	4,760.5748	1.3299		4,793.8216
Total	**3.1565**	**30.3512**	**31.2284**	**0.0497**		**1.6363**	**1.6363**		**1.5248**	**1.5248**		**4,760.5748**	**4,760.5748**	**1.3299**		**4,793.8216**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1997	6.2276	1.8145	0.0147	0.8913	0.0179	0.9091	0.2343	0.0171	0.2514		1,553.9876	1,553.9876	0.0944		1,556.3477
Worker	1.1552	0.7931	7.9866	0.0212	6.5192	0.0161	6.5353	1.6473	0.0148	1.6621		2,107.0041	2,107.0041	0.0562		2,108.4078
Total	**1.3549**	**7.0208**	**9.8011**	**0.0358**	**7.4105**	**0.0339**	**7.4444**	**1.8816**	**0.0319**	**1.9135**		**3,660.9917**	**3,660.9917**	**0.1506**		**3,664.7556**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1565	30.3512	31.2284	0.0497		1.6363	1.6363		1.5248	1.5248	0.0000	4,760.5748	4,760.5748	1.3299		4,793.8216
Total	**3.1565**	**30.3512**	**31.2284**	**0.0497**		**1.6363**	**1.6363**		**1.5248**	**1.5248**	**0.0000**	**4,760.5748**	**4,760.5748**	**1.3299**		**4,793.8216**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1997	6.2276	1.8145	0.0147	0.8205	0.0179	0.8384	0.2169	0.0171	0.2340		1,553.9876	1,553.9876	0.0944		1,556.3477
Worker	1.1552	0.7931	7.9866	0.0212	5.9605	0.0161	5.9766	1.5102	0.0148	1.5250		2,107.0041	2,107.0041	0.0562		2,108.4078
Total	**1.3549**	**7.0208**	**9.8011**	**0.0358**	**6.7810**	**0.0339**	**6.8150**	**1.7271**	**0.0319**	**1.7590**		**3,660.9917**	**3,660.9917**	**0.1506**		**3,664.7556**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.8091	26.7405	30.9439	0.0497		1.3769	1.3769		1.2836	1.2836		4,761.9939	4,761.9939	1.3260		4,795.1426
Total	**2.8091**	**26.7405**	**30.9439**	**0.0497**		**1.3769**	**1.3769**		**1.2836**	**1.2836**		**4,761.9939**	**4,761.9939**	**1.3260**		**4,795.1426**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1853	5.9103	1.6734	0.0145	0.8912	0.0157	0.9069	0.2343	0.0150	0.2493		1,540.1798	1,540.1798	0.0917		1,542.4729
Worker	1.0804	0.7130	7.3238	0.0204	6.5192	0.0157	6.5349	1.6473	0.0144	1.6617		2,031.5627	2,031.5627	0.0504		2,032.8217
Total	**1.2657**	**6.6234**	**8.9972**	**0.0349**	**7.4104**	**0.0313**	**7.4418**	**1.8816**	**0.0294**	**1.9110**		**3,571.7425**	**3,571.7425**	**0.1421**		**3,575.2946**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.8091	26.7405	30.9439	0.0497		1.3769	1.3769		1.2836	1.2836	0.0000	4,761.9939	4,761.9939	1.3260		4,795.1426
Total	**2.8091**	**26.7405**	**30.9439**	**0.0497**		**1.3769**	**1.3769**		**1.2836**	**1.2836**	**0.0000**	**4,761.9939**	**4,761.9939**	**1.3260**		**4,795.1426**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1853	5.9103	1.6734	0.0145	0.8205	0.0157	0.8361	0.2169	0.0150	0.2319		1,540.1798	1,540.1798	0.0917		1,542.4729
Worker	1.0804	0.7130	7.3238	0.0204	5.9605	0.0157	5.9762	1.5102	0.0144	1.5246		2,031.5627	2,031.5627	0.0504		2,032.8217
Total	**1.2657**	**6.6234**	**8.9972**	**0.0349**	**6.7810**	**0.0313**	**6.8123**	**1.7271**	**0.0294**	**1.7565**		**3,571.7425**	**3,571.7425**	**0.1421**		**3,575.2946**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6055	24.5765	30.8282	0.0498		1.2099	1.2099		1.1278	1.1278		4,762.7941	4,762.7941	1.3218		4,795.8396
Total	**2.6055**	**24.5765**	**30.8282**	**0.0498**		**1.2099**	**1.2099**		**1.1278**	**1.1278**		**4,762.7941**	**4,762.7941**	**1.3218**		**4,795.8396**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1469	4.9907	1.4747	0.0143	0.8912	7.5500e-003	0.8987	0.2343	7.2200e-003	0.2415		1,511.7736	1,511.7736	0.0821		1,513.8268
Worker	1.0123	0.6414	6.7103	0.0196	6.5192	0.0153	6.5345	1.6473	0.0141	1.6614		1,955.3019	1,955.3019	0.0450		1,956.4277
Total	**1.1592**	**5.6321**	**8.1850**	**0.0339**	**7.4104**	**0.0228**	**7.4332**	**1.8816**	**0.0213**	**1.9029**		**3,467.0755**	**3,467.0755**	**0.1272**		**3,470.2545**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6055	24.5765	30.8282	0.0498		1.2099	1.2099		1.1278	1.1278	0.0000	4,762.7941	4,762.7941	1.3218		4,795.8396
Total	**2.6055**	**24.5765**	**30.8282**	**0.0498**		**1.2099**	**1.2099**		**1.1278**	**1.1278**	**0.0000**	**4,762.7941**	**4,762.7941**	**1.3218**		**4,795.8396**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1469	4.9907	1.4747	0.0143	0.8204	7.5500e-003	0.8280	0.2169	7.2200e-003	0.2241		1,511.7736	1,511.7736	0.0821		1,513.8268
Worker	1.0123	0.6414	6.7103	0.0196	5.9605	0.0153	5.9758	1.5102	0.0141	1.5243		1,955.3019	1,955.3019	0.0450		1,956.4277
Total	**1.1592**	**5.6321**	**8.1850**	**0.0339**	**6.7810**	**0.0228**	**6.8038**	**1.7271**	**0.0213**	**1.7484**		**3,467.0755**	**3,467.0755**	**0.1272**		**3,470.2545**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.6362					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**9.8551**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2104	0.1444	1.4544	3.8500e-003	0.4336	2.9300e-003	0.4365	0.1150	2.7000e-003	0.1177		383.7036	383.7036	0.0102		383.9593
Total	**0.2104**	**0.1444**	**1.4544**	**3.8500e-003**	**0.4336**	**2.9300e-003**	**0.4365**	**0.1150**	**2.7000e-003**	**0.1177**		**383.7036**	**383.7036**	**0.0102**		**383.9593**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.6362					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**9.8551**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2104	0.1444	1.4544	3.8500e-003	0.3997	2.9300e-003	0.4026	0.1067	2.7000e-003	0.1094		383.7036	383.7036	0.0102		383.9593
Total	**0.2104**	**0.1444**	**1.4544**	**3.8500e-003**	**0.3997**	**2.9300e-003**	**0.4026**	**0.1067**	**2.7000e-003**	**0.1094**		**383.7036**	**383.7036**	**0.0102**		**383.9593**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.6362					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**9.8407**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1967	0.1299	1.3337	3.7100e-003	0.4336	2.8500e-003	0.4365	0.1150	2.6300e-003	0.1176		369.9651	369.9651	9.1700e-003		370.1944
Total	**0.1967**	**0.1299**	**1.3337**	**3.7100e-003**	**0.4336**	**2.8500e-003**	**0.4365**	**0.1150**	**2.6300e-003**	**0.1176**		**369.9651**	**369.9651**	**9.1700e-003**		**370.1944**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.6362					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**9.8407**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1967	0.1299	1.3337	3.7100e-003	0.3997	2.8500e-003	0.4025	0.1067	2.6300e-003	0.1093		369.9651	369.9651	9.1700e-003		370.1944
Total	**0.1967**	**0.1299**	**1.3337**	**3.7100e-003**	**0.3997**	**2.8500e-003**	**0.4025**	**0.1067**	**2.6300e-003**	**0.1093**		**369.9651**	**369.9651**	**9.1700e-003**		**370.1944**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.6362					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**9.8278**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1844	0.1168	1.2220	3.5700e-003	0.4336	2.7800e-003	0.4364	0.1150	2.5600e-003	0.1176		356.0773	356.0773	8.2000e-003		356.2824
Total	**0.1844**	**0.1168**	**1.2220**	**3.5700e-003**	**0.4336**	**2.7800e-003**	**0.4364**	**0.1150**	**2.5600e-003**	**0.1176**		**356.0773**	**356.0773**	**8.2000e-003**		**356.2824**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.6362					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**9.8278**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1844	0.1168	1.2220	3.5700e-003	0.3997	2.7800e-003	0.4025	0.1067	2.5600e-003	0.1093		356.0773	356.0773	8.2000e-003		356.2824
Total	**0.1844**	**0.1168**	**1.2220**	**3.5700e-003**	**0.3997**	**2.7800e-003**	**0.4025**	**0.1067**	**2.5600e-003**	**0.1093**		**356.0773**	**356.0773**	**8.2000e-003**		**356.2824**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.4533	13.8980	31.5599	0.1419	17.6509	0.0745	17.7253	4.7125	0.0692	4.7817		14,485.7439	14,485.7439	0.5530		14,499.5686
Unmitigated	2.4533	13.8980	31.5599	0.1419	17.6509	0.0745	17.7253	4.7125	0.0692	4.7817		14,485.7439	14,485.7439	0.5530		14,499.5686

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.93	23.21	17.07	13,157	13,157
Retirement Community	556.80	470.96	452.40	1,359,070	1,359,070
Single Family Housing	2,570.40	2,675.70	2327.40	6,545,448	6,545,448
Total	3,129.13	3,169.87	2,796.87	7,917,674	7,917,674

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2890	2.4699	1.0510	0.0158		0.1997	0.1997		0.1997	0.1997		3,153.0280	3,153.0280	0.0604	0.0578	3,171.7649
NaturalGas Unmitigated	0.2890	2.4699	1.0510	0.0158		0.1997	0.1997		0.1997	0.1997		3,153.0280	3,153.0280	0.0604	0.0578	3,171.7649

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	7690.15	0.0829	0.7087	0.3016	4.5200e-003		0.0573	0.0573		0.0573	0.0573		904.7230	904.7230	0.0173	0.0166	910.0993
Single Family Housing	19110.6	0.2061	1.7612	0.7494	0.0112		0.1424	0.1424		0.1424	0.1424		2,248.3050	2,248.3050	0.0431	0.0412	2,261.6656
Total		**0.2890**	**2.4699**	**1.0510**	**0.0158**		**0.1997**	**0.1997**		**0.1997**	**0.1997**		**3,153.0280**	**3,153.0280**	**0.0604**	**0.0578**	**3,171.7649**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	7.69015	0.0829	0.7087	0.3016	4.5200e-003		0.0573	0.0573		0.0573	0.0573		904.7230	904.7230	0.0173	0.0166	910.0993
Single Family Housing	19.1106	0.2061	1.7612	0.7494	0.0112		0.1424	0.1424		0.1424	0.1424		2,248.3050	2,248.3050	0.0431	0.0412	2,261.6656
Total		**0.2890**	**2.4699**	**1.0510**	**0.0158**		**0.1997**	**0.1997**		**0.1997**	**0.1997**		**3,153.0280**	**3,153.0280**	**0.0604**	**0.0578**	**3,171.7649**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	19.2304	0.4761	41.2702	2.1900e-003		0.2297	0.2297		0.2297	0.2297	0.0000	74.5735	74.5735	0.0710	0.0000	76.3482
Unmitigated	19.2304	0.4761	41.2702	2.1900e-003		0.2297	0.2297		0.2297	0.2297	0.0000	74.5735	74.5735	0.0710	0.0000	76.3482

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.4795					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	15.5169					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.2340	0.4761	41.2702	2.1900e-003		0.2297	0.2297		0.2297	0.2297		74.5735	74.5735	0.0710		76.3482
Total	**19.2304**	**0.4761**	**41.2702**	**2.1900e-003**		**0.2297**	**0.2297**		**0.2297**	**0.2297**	**0.0000**	**74.5735**	**74.5735**	**0.0710**	**0.0000**	**76.3482**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.4795					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	15.5169					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.2340	0.4761	41.2702	2.1900e-003		0.2297	0.2297		0.2297	0.2297		74.5735	74.5735	0.0710		76.3482
Total	**19.2304**	**0.4761**	**41.2702**	**2.1900e-003**		**0.2297**	**0.2297**		**0.2297**	**0.2297**	**0.0000**	**74.5735**	**74.5735**	**0.0710**	**0.0000**	**76.3482**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

The Ranch - City of Rancho Cordova (Construction Only - Phase 2)

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	197.00	Dwelling Unit	20.87	354,600.00	559
Retirement Community	210.00	Dwelling Unit	25.97	210,000.00	437
City Park	0.50	Acre	1.40	21,780.00	0
City Park	1.02	Acre	1.23	44,576.40	0
City Park	2.20	Acre	2.20	95,832.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

The Ranch - City of Rancho Cordova (Construction Only - Phase 2) - Sacramento County, Annual

Project Characteristics - Estimated construction state date of April 2022 for Phase 2 (provided by Applicant).

Land Use - This model run provides construction emissions only.

Construction Phase - Phase 2

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - D

Trips and VMT - Default values.

Grading - No grading during Phase 2. Grading for phase 2 occured under Phase 1.

Architectural Coating - Interior VOC limts reduced from 100 g/L to 50 g/L based on SMAQMD Rule 443 that provides a VOC limit for flat coatings of 50 g/L.

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust - Project will not have unpaved roads during the project's operational phase. Therefore, project does not use CARB Unmitigated Unpaved Road Statewide Emission Inventory Method (per CalEEMod User Guidebook).

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 28.33% - reflects project person/du value (2.523) vs. statewide avg. (2.97) and latest statewide data (ARB). Parking Degreaser EF red. by 57.5% (corrects for walking paths modeled as 'parking lot').

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

The Ranch - City of Rancho Cordova (Construction Only - Phase 2) - Sacramento County, Annual

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	75.00	609.00
tblConstructionPhase	NumDays	1,110.00	609.00
tblConstructionPhase	NumDays	75.00	65.00
tblConstructionPhase	PhaseEndDate	8/26/2026	11/28/2025
tblConstructionPhase	PhaseEndDate	1/28/2026	7/31/2025
tblConstructionPhase	PhaseEndDate	5/13/2026	12/30/2022
tblConstructionPhase	PhaseStartDate	5/14/2026	8/1/2023
tblConstructionPhase	PhaseStartDate	10/28/2021	4/1/2023
tblConstructionPhase	PhaseStartDate	1/29/2026	10/1/2022
tblLandUse	LandUseSquareFeet	44,576.25	44,576.40
tblLandUse	LotAcreage	63.96	20.87
tblLandUse	LotAcreage	42.00	25.97
tblLandUse	LotAcreage	0.50	1.40
tblLandUse	LotAcreage	1.02	1.23
tblLandUse	Population	526.00	559.00
tblLandUse	Population	561.00	437.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblTripsAndVMT	WorkerTripNumber	23.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1525	1.3875	1.5807	2.6100e-003	0.0206	0.0715	0.0922	5.2900e-003	0.0669	0.0722	0.0000	226.0000	226.0000	0.0576	0.0000	227.4409
2023	0.6736	2.0914	2.5062	6.4400e-003	0.2708	0.0744	0.3452	0.0729	0.0702	0.1432	0.0000	579.0961	579.0961	0.0668	0.0000	580.7649
2024	1.3251	2.7346	3.4479	8.9100e-003	0.3884	0.0915	0.4799	0.1045	0.0865	0.1911	0.0000	800.8706	800.8706	0.0898	0.0000	803.1147
2025	1.0842	1.5479	2.0730	5.3700e-003	0.2437	0.0481	0.2918	0.0655	0.0456	0.1112	0.0000	482.4640	482.4640	0.0523	0.0000	483.7717
Maximum	**1.3251**	**2.7346**	**3.4479**	**8.9100e-003**	**0.3884**	**0.0915**	**0.4799**	**0.1045**	**0.0865**	**0.1911**	**0.0000**	**800.8706**	**800.8706**	**0.0898**	**0.0000**	**803.1147**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1525	1.3875	1.5807	2.6100e-003	0.0189	0.0715	0.0904	4.8700e-003	0.0669	0.0718	0.0000	225.9997	225.9997	0.0576	0.0000	227.4406
2023	0.6736	2.0914	2.5062	6.4400e-003	0.2503	0.0744	0.3247	0.0679	0.0702	0.1381	0.0000	579.0958	579.0958	0.0668	0.0000	580.7646
2024	1.3251	2.7346	3.4479	8.9100e-003	0.3590	0.0915	0.4505	0.0973	0.0865	0.1839	0.0000	800.8702	800.8702	0.0898	0.0000	803.1143
2025	1.0842	1.5479	2.0730	5.3700e-003	0.2251	0.0481	0.2733	0.0610	0.0456	0.1066	0.0000	482.4638	482.4638	0.0523	0.0000	483.7715
Maximum	**1.3251**	**2.7346**	**3.4479**	**8.9100e-003**	**0.3590**	**0.0915**	**0.4505**	**0.0973**	**0.0865**	**0.1839**	**0.0000**	**800.8702**	**800.8702**	**0.0898**	**0.0000**	**803.1143**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**7.60**	**0.00**	**5.80**	**6.94**	**0.00**	**3.33**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
5	**4-1-2022**	**6-30-2022**	0.5671	0.5671
6	**7-1-2022**	**9-30-2022**	0.5734	0.5734
7	**10-1-2022**	**12-31-2022**	0.3974	0.3974
9	**4-1-2023**	**6-30-2023**	0.7567	0.7567
10	**7-1-2023**	**9-30-2023**	0.9635	0.9635
11	**10-1-2023**	**12-31-2023**	1.0680	1.0680
12	**1-1-2024**	**3-31-2024**	1.0112	1.0112
13	**4-1-2024**	**6-30-2024**	1.0079	1.0079

14	**7-1-2024**	**9-30-2024**	1.0190	1.0190
15	**10-1-2024**	**12-31-2024**	1.0224	1.0224
16	**1-1-2025**	**3-31-2025**	0.9555	0.9555
17	**4-1-2025**	**6-30-2025**	0.9630	0.9630
18	**7-1-2025**	**9-30-2025**	0.5218	0.5218
		Highest	1.0680	1.0680

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.7154	0.0483	4.1826	2.2000e-004		0.0233	0.0233		0.0233	0.0233	0.0000	6.8562	6.8562	6.5300e-003	0.0000	7.0194
Energy	0.0411	0.3516	0.1496	2.2400e-003		0.0284	0.0284		0.0284	0.0284	0.0000	1,116.0081	1,116.0081	0.0426	0.0147	1,121.4453
Mobile	0.3488	1.8102	4.0705	0.0192	2.2531	9.8000e-003	2.2629	0.6032	9.1100e-003	0.6124	0.0000	1,776.0278	1,776.0278	0.0648	0.0000	1,777.6465
Waste						0.0000	0.0000		0.0000	0.0000	60.5238	0.0000	60.5238	3.5769	0.0000	149.9451
Water						0.0000	0.0000		0.0000	0.0000	9.3820	55.1993	64.5813	0.0350	0.0210	71.7036
Total	**3.1053**	**2.2100**	**8.4027**	**0.0216**	**2.2531**	**0.0615**	**2.3146**	**0.6032**	**0.0608**	**0.6641**	**69.9058**	**2,954.0914**	**3,023.9972**	**3.7258**	**0.0356**	**3,127.7599**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.7154	0.0483	4.1826	2.2000e-004		0.0233	0.0233		0.0233	0.0233	0.0000	6.8562	6.8562	6.5300e-003	0.0000	7.0194
Energy	0.0411	0.3516	0.1496	2.2400e-003		0.0284	0.0284		0.0284	0.0284	0.0000	1,116.0081	1,116.0081	0.0426	0.0147	1,121.4453
Mobile	0.3488	1.8102	4.0705	0.0192	2.2531	9.8000e-003	2.2629	0.6032	9.1100e-003	0.6124	0.0000	1,776.0278	1,776.0278	0.0648	0.0000	1,777.6465
Waste						0.0000	0.0000		0.0000	0.0000	60.5238	0.0000	60.5238	3.5769	0.0000	149.9451
Water						0.0000	0.0000		0.0000	0.0000	9.3820	55.1993	64.5813	0.0350	0.0210	71.7036
Total	**3.1053**	**2.2100**	**8.4027**	**0.0216**	**2.2531**	**0.0615**	**2.3146**	**0.6032**	**0.0608**	**0.6641**	**69.9058**	**2,954.0914**	**3,023.9972**	**3.7258**	**0.0356**	**3,127.7599**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	1,585.9200
Vegetation Land Change	-1,057.2430
Total	**528.6770**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	8/1/2023	11/28/2025	5	609	
2	Building Construction	Building Construction	4/1/2023	7/31/2025	5	609	
3	Improvements for Phase 2	Trenching	4/1/2022	9/30/2022	5	131	
4	Paving	Paving	10/1/2022	12/30/2022	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 1,143,315; Residential Outdoor: 381,105; Non-Residential Indoor: 10,500; Non-Residential Outdoor: 3,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Improvements for Phase 2	Cranes	1	7.00	231	0.29
Improvements for Phase 2	Forklifts	3	8.00	89	0.20
Improvements for Phase 2	Generator Sets	1	8.00	84	0.74
Improvements for Phase 2	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Improvements for Phase 2	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Improvements for Phase 2	9	23.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	290.00	70.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Improvements for Phase 2	9	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	58.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3988					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.0710	0.0987	1.6000e-004		3.8600e-003	3.8600e-003		3.8600e-003	3.8600e-003	0.0000	13.9152	13.9152	8.3000e-004	0.0000	13.9361
Total	**0.4093**	**0.0710**	**0.0987**	**1.6000e-004**		**3.8600e-003**	**3.8600e-003**		**3.8600e-003**	**3.8600e-003**	**0.0000**	**13.9152**	**13.9152**	**8.3000e-004**	**0.0000**	**13.9361**

3.2 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.5700e-003	5.7900e-003	0.0675	2.0000e-004	0.0232	1.5000e-004	0.0234	6.1700e-003	1.4000e-004	6.3200e-003	0.0000	18.4383	18.4383	4.2000e-004	0.0000	18.4488
Total	**9.5700e-003**	**5.7900e-003**	**0.0675**	**2.0000e-004**	**0.0232**	**1.5000e-004**	**0.0234**	**6.1700e-003**	**1.4000e-004**	**6.3200e-003**	**0.0000**	**18.4383**	**18.4383**	**4.2000e-004**	**0.0000**	**18.4488**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3988					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.0710	0.0987	1.6000e-004		3.8600e-003	3.8600e-003		3.8600e-003	3.8600e-003	0.0000	13.9152	13.9152	8.3000e-004	0.0000	13.9360
Total	**0.4093**	**0.0710**	**0.0987**	**1.6000e-004**		**3.8600e-003**	**3.8600e-003**		**3.8600e-003**	**3.8600e-003**	**0.0000**	**13.9152**	**13.9152**	**8.3000e-004**	**0.0000**	**13.9360**

3.2 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.5700e-003	5.7900e-003	0.0675	2.0000e-004	0.0214	1.5000e-004	0.0216	5.7300e-003	1.4000e-004	5.8700e-003	0.0000	18.4383	18.4383	4.2000e-004	0.0000	18.4488
Total	**9.5700e-003**	**5.7900e-003**	**0.0675**	**2.0000e-004**	**0.0214**	**1.5000e-004**	**0.0216**	**5.7300e-003**	**1.4000e-004**	**5.8700e-003**	**0.0000**	**18.4383**	**18.4383**	**4.2000e-004**	**0.0000**	**18.4488**

3.2 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.9587					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0237	0.1597	0.2371	3.9000e-004		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	33.4476	33.4476	1.8800e-003	0.0000	33.4947
Total	**0.9823**	**0.1597**	**0.2371**	**3.9000e-004**		**7.9800e-003**	**7.9800e-003**		**7.9800e-003**	**7.9800e-003**	**0.0000**	**33.4476**	**33.4476**	**1.8800e-003**	**0.0000**	**33.4947**

3.2 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0216	0.0126	0.1503	4.7000e-004	0.0558	3.6000e-004	0.0562	0.0148	3.3000e-004	0.0152	0.0000	42.5967	42.5967	9.1000e-004	0.0000	42.6195
Total	**0.0216**	**0.0126**	**0.1503**	**4.7000e-004**	**0.0558**	**3.6000e-004**	**0.0562**	**0.0148**	**3.3000e-004**	**0.0152**	**0.0000**	**42.5967**	**42.5967**	**9.1000e-004**	**0.0000**	**42.6195**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.9587					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0237	0.1597	0.2371	3.9000e-004		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	33.4476	33.4476	1.8800e-003	0.0000	33.4947
Total	**0.9823**	**0.1597**	**0.2371**	**3.9000e-004**		**7.9800e-003**	**7.9800e-003**		**7.9800e-003**	**7.9800e-003**	**0.0000**	**33.4476**	**33.4476**	**1.8800e-003**	**0.0000**	**33.4947**

3.2 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0216	0.0126	0.1503	4.7000e-004	0.0515	3.6000e-004	0.0518	0.0138	3.3000e-004	0.0141	0.0000	42.5967	42.5967	9.1000e-004	0.0000	42.6195
Total	**0.0216**	**0.0126**	**0.1503**	**4.7000e-004**	**0.0515**	**3.6000e-004**	**0.0518**	**0.0138**	**3.3000e-004**	**0.0141**	**0.0000**	**42.5967**	**42.5967**	**9.1000e-004**	**0.0000**	**42.6195**

3.2 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8708					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0203	0.1363	0.2153	3.5000e-004		6.1300e-003	6.1300e-003		6.1300e-003	6.1300e-003	0.0000	30.3837	30.3837	1.6600e-003	0.0000	30.4252
Total	**0.8912**	**0.1363**	**0.2153**	**3.5000e-004**		**6.1300e-003**	**6.1300e-003**		**6.1300e-003**	**6.1300e-003**	**0.0000**	**30.3837**	**30.3837**	**1.6600e-003**	**0.0000**	**30.4252**

3.2 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0186	0.0104	0.1265	4.1000e-004	0.0507	3.2000e-004	0.0510	0.0135	3.0000e-004	0.0138	0.0000	37.1455	37.1455	7.5000e-004	0.0000	37.1643
Total	**0.0186**	**0.0104**	**0.1265**	**4.1000e-004**	**0.0507**	**3.2000e-004**	**0.0510**	**0.0135**	**3.0000e-004**	**0.0138**	**0.0000**	**37.1455**	**37.1455**	**7.5000e-004**	**0.0000**	**37.1643**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8708					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0203	0.1363	0.2153	3.5000e-004		6.1300e-003	6.1300e-003		6.1300e-003	6.1300e-003	0.0000	30.3837	30.3837	1.6600e-003	0.0000	30.4251
Total	**0.8912**	**0.1363**	**0.2153**	**3.5000e-004**		**6.1300e-003**	**6.1300e-003**		**6.1300e-003**	**6.1300e-003**	**0.0000**	**30.3837**	**30.3837**	**1.6600e-003**	**0.0000**	**30.4251**

3.2 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0186	0.0104	0.1265	4.1000e-004	0.0468	3.2000e-004	0.0471	0.0125	3.0000e-004	0.0128	0.0000	37.1455	37.1455	7.5000e-004	0.0000	37.1643
Total	**0.0186**	**0.0104**	**0.1265**	**4.1000e-004**	**0.0468**	**3.2000e-004**	**0.0471**	**0.0125**	**3.0000e-004**	**0.0128**	**0.0000**	**37.1455**	**37.1455**	**7.5000e-004**	**0.0000**	**37.1643**

3.3 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1533	1.4025	1.5838	2.6300e-003		0.0682	0.0682		0.0642	0.0642	0.0000	226.0096	226.0096	0.0538	0.0000	227.3537
Total	**0.1533**	**1.4025**	**1.5838**	**2.6300e-003**		**0.0682**	**0.0682**		**0.0642**	**0.0642**	**0.0000**	**226.0096**	**226.0096**	**0.0538**	**0.0000**	**227.3537**

3.3 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0158	0.5603	0.1522	1.6200e-003	0.0399	8.1000e-004	0.0407	0.0115	7.7000e-004	0.0123	0.0000	155.8032	155.8032	7.9800e-003	0.0000	156.0027
Worker	0.0857	0.0518	0.6040	1.8200e-003	0.2077	1.3800e-003	0.2090	0.0552	1.2700e-003	0.0565	0.0000	164.9297	164.9297	3.7600e-003	0.0000	165.0236
Total	**0.1014**	**0.6120**	**0.7562**	**3.4400e-003**	**0.2476**	**2.1900e-003**	**0.2497**	**0.0668**	**2.0400e-003**	**0.0688**	**0.0000**	**320.7329**	**320.7329**	**0.0117**	**0.0000**	**321.0264**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1533	1.4025	1.5838	2.6300e-003		0.0682	0.0682		0.0642	0.0642	0.0000	226.0094	226.0094	0.0538	0.0000	227.3535
Total	**0.1533**	**1.4025**	**1.5838**	**2.6300e-003**		**0.0682**	**0.0682**		**0.0642**	**0.0642**	**0.0000**	**226.0094**	**226.0094**	**0.0538**	**0.0000**	**227.3535**

3.3 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0158	0.5603	0.1522	1.6200e-003	0.0374	8.1000e-004	0.0382	0.0109	7.7000e-004	0.0117	0.0000	155.8032	155.8032	7.9800e-003	0.0000	156.0027
Worker	0.0857	0.0518	0.6040	1.8200e-003	0.1915	1.3800e-003	0.1929	0.0513	1.2700e-003	0.0525	0.0000	164.9297	164.9297	3.7600e-003	0.0000	165.0236
Total	**0.1014**	**0.6120**	**0.7562**	**3.4400e-003**	**0.2289**	**2.1900e-003**	**0.2311**	**0.0622**	**2.0400e-003**	**0.0642**	**0.0000**	**320.7329**	**320.7329**	**0.0117**	**0.0000**	**321.0264**

3.3 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7223	303.7223	0.0718	0.0000	305.5179
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7223**	**303.7223**	**0.0718**	**0.0000**	**305.5179**

3.3 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0202	0.7384	0.1912	2.1600e-003	0.0536	1.0300e-003	0.0546	0.0155	9.8000e-004	0.0165	0.0000	208.1204	208.1204	0.0106	0.0000	208.3851
Worker	0.1082	0.0629	0.7515	2.3600e-003	0.2790	1.8100e-003	0.2808	0.0742	1.6700e-003	0.0759	0.0000	212.9836	212.9836	4.5600e-003	0.0000	213.0975
Total	**0.1284**	**0.8013**	**0.9427**	**4.5200e-003**	**0.3326**	**2.8400e-003**	**0.3355**	**0.0897**	**2.6500e-003**	**0.0924**	**0.0000**	**421.1040**	**421.1040**	**0.0152**	**0.0000**	**421.4826**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7220	303.7220	0.0718	0.0000	305.5175
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7220**	**303.7220**	**0.0718**	**0.0000**	**305.5175**

3.3 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0202	0.7384	0.1912	2.1600e-003	0.0502	1.0300e-003	0.0512	0.0147	9.8000e-004	0.0156	0.0000	208.1204	208.1204	0.0106	0.0000	208.3851
Worker	0.1082	0.0629	0.7515	2.3600e-003	0.2573	1.8100e-003	0.2591	0.0689	1.6700e-003	0.0706	0.0000	212.9836	212.9836	4.5600e-003	0.0000	213.0975
Total	**0.1284**	**0.8013**	**0.9427**	**4.5200e-003**	**0.3075**	**2.8400e-003**	**0.3103**	**0.0835**	**2.6500e-003**	**0.0862**	**0.0000**	**421.1040**	**421.1040**	**0.0152**	**0.0000**	**421.4826**

3.3 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1039	0.9477	1.2224	2.0500e-003		0.0401	0.0401		0.0377	0.0377	0.0000	176.2588	176.2588	0.0414	0.0000	177.2946
Total	**0.1039**	**0.9477**	**1.2224**	**2.0500e-003**		**0.0401**	**0.0401**		**0.0377**	**0.0377**	**0.0000**	**176.2588**	**176.2588**	**0.0414**	**0.0000**	**177.2946**

3.3 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0112	0.4205	0.1050	1.2500e-003	0.0311	5.7000e-004	0.0317	8.9800e-003	5.4000e-004	9.5200e-003	0.0000	120.0600	120.0600	6.0700e-003	0.0000	120.2118
Worker	0.0593	0.0331	0.4038	1.3100e-003	0.1619	1.0300e-003	0.1629	0.0431	9.5000e-004	0.0440	0.0000	118.6160	118.6160	2.4000e-003	0.0000	118.6758
Total	**0.0705**	**0.4536**	**0.5089**	**2.5600e-003**	**0.1930**	**1.6000e-003**	**0.1946**	**0.0520**	**1.4900e-003**	**0.0535**	**0.0000**	**238.6760**	**238.6760**	**8.4700e-003**	**0.0000**	**238.8877**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1039	0.9477	1.2224	2.0500e-003		0.0401	0.0401		0.0377	0.0377	0.0000	176.2586	176.2586	0.0414	0.0000	177.2944
Total	**0.1039**	**0.9477**	**1.2224**	**2.0500e-003**		**0.0401**	**0.0401**		**0.0377**	**0.0377**	**0.0000**	**176.2586**	**176.2586**	**0.0414**	**0.0000**	**177.2944**

3.3 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0112	0.4205	0.1050	1.2500e-003	0.0291	5.7000e-004	0.0297	8.5000e-003	5.4000e-004	9.0400e-003	0.0000	120.0600	120.0600	6.0700e-003	0.0000	120.2118
Worker	0.0593	0.0331	0.4038	1.3100e-003	0.1493	1.0300e-003	0.1503	0.0400	9.5000e-004	0.0409	0.0000	118.6160	118.6160	2.4000e-003	0.0000	118.6758
Total	**0.0705**	**0.4536**	**0.5089**	**2.5600e-003**	**0.1784**	**1.6000e-003**	**0.1800**	**0.0485**	**1.4900e-003**	**0.0500**	**0.0000**	**238.6760**	**238.6760**	**8.4700e-003**	**0.0000**	**238.8877**

3.4 Improvements for Phase 2 - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1118	1.0228	1.0718	1.7600e-003		0.0530	0.0530		0.0499	0.0499	0.0000	151.7800	151.7800	0.0364	0.0000	152.6891
Total	**0.1118**	**1.0228**	**1.0718**	**1.7600e-003**		**0.0530**	**0.0530**		**0.0499**	**0.0499**	**0.0000**	**151.7800**	**151.7800**	**0.0364**	**0.0000**	**152.6891**

3.4 Improvements for Phase 2 - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8800e-003	3.0700e-003	0.0350	1.0000e-004	0.0206	8.0000e-005	0.0207	5.2900e-003	7.0000e-005	5.3600e-003	0.0000	9.1304	9.1304	2.2000e-004	0.0000	9.1359
Total	**4.8800e-003**	**3.0700e-003**	**0.0350**	**1.0000e-004**	**0.0206**	**8.0000e-005**	**0.0207**	**5.2900e-003**	**7.0000e-005**	**5.3600e-003**	**0.0000**	**9.1304**	**9.1304**	**2.2000e-004**	**0.0000**	**9.1359**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1118	1.0228	1.0718	1.7600e-003		0.0530	0.0530		0.0499	0.0499	0.0000	151.7799	151.7799	0.0364	0.0000	152.6889
Total	**0.1118**	**1.0228**	**1.0718**	**1.7600e-003**		**0.0530**	**0.0530**		**0.0499**	**0.0499**	**0.0000**	**151.7799**	**151.7799**	**0.0364**	**0.0000**	**152.6889**

3.4 Improvements for Phase 2 - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8800e-003	3.0700e-003	0.0350	1.0000e-004	0.0189	8.0000e-005	0.0190	4.8700e-003	7.0000e-005	4.9400e-003	0.0000	9.1304	9.1304	2.2000e-004	0.0000	9.1359
Total	**4.8800e-003**	**3.0700e-003**	**0.0350**	**1.0000e-004**	**0.0189**	**8.0000e-005**	**0.0190**	**4.8700e-003**	**7.0000e-005**	**4.9400e-003**	**0.0000**	**9.1304**	**9.1304**	**2.2000e-004**	**0.0000**	**9.1359**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0358	0.3616	0.4739	7.4000e-004		0.0185	0.0185		0.0170	0.0170	0.0000	65.0896	65.0896	0.0211	0.0000	65.6158
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0358**	**0.3616**	**0.4739**	**7.4000e-004**		**0.0185**	**0.0185**		**0.0170**	**0.0170**	**0.0000**	**65.0896**	**65.0896**	**0.0211**	**0.0000**	**65.6158**

3.5 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0358	0.3616	0.4739	7.4000e-004		0.0185	0.0185		0.0170	0.0170	0.0000	65.0895	65.0895	0.0211	0.0000	65.6158
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0358**	**0.3616**	**0.4739**	**7.4000e-004**		**0.0185**	**0.0185**		**0.0170**	**0.0170**	**0.0000**	**65.0895**	**65.0895**	**0.0211**	**0.0000**	**65.6158**

3.5 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3488	1.8102	4.0705	0.0192	2.2531	9.8000e-003	2.2629	0.6032	9.1100e-003	0.6124	0.0000	1,776.0278	1,776.0278	0.0648	0.0000	1,777.6465
Unmitigated	0.3488	1.8102	4.0705	0.0192	2.2531	9.8000e-003	2.2629	0.6032	9.1100e-003	0.6124	0.0000	1,776.0278	1,776.0278	0.0648	0.0000	1,777.6465

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.95	11.38	8.37	6,449	6,449
City Park	1.93	23.28	17.13	13,200	13,200
City Park	4.16	50.05	36.83	28,377	28,377
Retirement Community	504.00	426.30	409.50	1,230,193	1,230,193
Single Family Housing	1,875.44	1,952.27	1698.14	4,775,752	4,775,752
Total	2,386.48	2,463.28	2,169.97	6,053,972	6,053,972

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	708.8334	708.8334	0.0348	7.2000e-003	711.8510
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	708.8334	708.8334	0.0348	7.2000e-003	711.8510
NaturalGas Mitigated	0.0411	0.3516	0.1496	2.2400e-003		0.0284	0.0284		0.0284	0.0284	0.0000	407.1747	407.1747	7.8000e-003	7.4600e-003	409.5943
NaturalGas Unmitigated	0.0411	0.3516	0.1496	2.2400e-003		0.0284	0.0284		0.0284	0.0284	0.0000	407.1747	407.1747	7.8000e-003	7.4600e-003	409.5943

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	2.54073e+006	0.0137	0.1171	0.0498	7.5000e-004		9.4700e-003	9.4700e-003		9.4700e-003	9.4700e-003	0.0000	135.5831	135.5831	2.6000e-003	2.4900e-003	136.3888
Single Family Housing	5.08943e+006	0.0274	0.2345	0.0998	1.5000e-003		0.0190	0.0190		0.0190	0.0190	0.0000	271.5916	271.5916	5.2100e-003	4.9800e-003	273.2055
Total		**0.0411**	**0.3516**	**0.1496**	**2.2500e-003**		**0.0284**	**0.0284**		**0.0284**	**0.0284**	**0.0000**	**407.1747**	**407.1747**	**7.8100e-003**	**7.4700e-003**	**409.5943**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	2.54073e+006	0.0137	0.1171	0.0498	7.5000e-004		9.4700e-003	9.4700e-003		9.4700e-003	9.4700e-003	0.0000	135.5831	135.5831	2.6000e-003	2.4900e-003	136.3888
Single Family Housing	5.08943e+006	0.0274	0.2345	0.0998	1.5000e-003		0.0190	0.0190		0.0190	0.0190	0.0000	271.5916	271.5916	5.2100e-003	4.9800e-003	273.2055
Total		**0.0411**	**0.3516**	**0.1496**	**2.2500e-003**		**0.0284**	**0.0284**		**0.0284**	**0.0284**	**0.0000**	**407.1747**	**407.1747**	**7.8100e-003**	**7.4700e-003**	**409.5943**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Retirement Community	983846	263.4347	0.0129	2.6800e-003	264.5561
Single Family Housing	1.66342e+006	445.3988	0.0219	4.5300e-003	447.2949
Total		**708.8334**	**0.0348**	**7.2100e-003**	**711.8510**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Retirement Community	983846	263.4347	0.0129	2.6800e-003	264.5561
Single Family Housing	1.66342e+006	445.3988	0.0219	4.5300e-003	447.2949
Total		**708.8334**	**0.0348**	**7.2100e-003**	**711.8510**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.7154	0.0483	4.1826	2.2000e-004		0.0233	0.0233		0.0233	0.0233	0.0000	6.8562	6.8562	6.5300e-003	0.0000	7.0194
Unmitigated	2.7154	0.0483	4.1826	2.2000e-004		0.0233	0.0233		0.0233	0.0233	0.0000	6.8562	6.8562	6.5300e-003	0.0000	7.0194

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3565					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.2338					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1251	0.0483	4.1826	2.2000e-004		0.0233	0.0233		0.0233	0.0233	0.0000	6.8562	6.8562	6.5300e-003	0.0000	7.0194
Total	**2.7154**	**0.0483**	**4.1826**	**2.2000e-004**		**0.0233**	**0.0233**		**0.0233**	**0.0233**	**0.0000**	**6.8562**	**6.8562**	**6.5300e-003**	**0.0000**	**7.0194**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3565					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.2338					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1251	0.0483	4.1826	2.2000e-004		0.0233	0.0233		0.0233	0.0233	0.0000	6.8562	6.8562	6.5300e-003	0.0000	7.0194
Total	**2.7154**	**0.0483**	**4.1826**	**2.2000e-004**		**0.0233**	**0.0233**		**0.0233**	**0.0233**	**0.0000**	**6.8562**	**6.8562**	**6.5300e-003**	**0.0000**	**7.0194**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	64.5813	0.0350	0.0210	71.7036
Unmitigated	64.5813	0.0350	0.0210	71.7036

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.43231	4.1538	2.0000e-004	4.0000e-005	4.1715
Retirement Community	13.6823 / 8.62583	31.1788	0.0180	0.0108	34.8446
Single Family Housing	12.8353 / 8.09185	29.2487	0.0168	0.0101	32.6875
Total		**64.5813**	**0.0350**	**0.0210**	**71.7036**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.43231	4.1538	2.0000e-004	4.0000e-005	4.1715
Retirement Community	13.6823 / 8.62583	31.1788	0.0180	0.0108	34.8446
Single Family Housing	12.8353 / 8.09185	29.2487	0.0168	0.0101	32.6875
Total		**64.5813**	**0.0350**	**0.0210**	**71.7036**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	60.5238	3.5769	0.0000	149.9451
Unmitigated	60.5238	3.5769	0.0000	149.9451

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.32	0.0650	3.8400e-003	0.0000	0.1609
Retirement Community	96.6	19.6089	1.1589	0.0000	48.5803
Single Family Housing	201.24	40.8499	2.4142	0.0000	101.2039
Total		**60.5238**	**3.5769**	**0.0000**	**149.9451**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.32	0.0650	3.8400e-003	0.0000	0.1609
Retirement Community	96.6	19.6089	1.1589	0.0000	48.5803
Single Family Housing	201.24	40.8499	2.4142	0.0000	101.2039
Total		**60.5238**	**3.5769**	**0.0000**	**149.9451**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	528.6770	0.0000	0.0000	528.6770

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	530.1 / 284.8	-1,057.2430	0.0000	0.0000	-1,057.2430
Total		**-1,057.2430**	**0.0000**	**0.0000**	**-1,057.2430**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	2240	1,585.9200	0.0000	0.0000	1,585.9200
Total		**1,585.9200**	**0.0000**	**0.0000**	**1,585.9200**

The Ranch - City of Rancho Cordova (Construction Only - Phase 2)

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	197.00	Dwelling Unit	20.87	354,600.00	559
Retirement Community	210.00	Dwelling Unit	25.97	210,000.00	437
City Park	0.50	Acre	1.40	21,780.00	0
City Park	1.02	Acre	1.23	44,576.40	0
City Park	2.20	Acre	2.20	95,832.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

The Ranch - City of Rancho Cordova (Construction Only - Phase 2) - Sacramento County, Summer

Project Characteristics - Estimated construction state date of April 2022 for Phase 2 (provided by Applicant).

Land Use - This model run provides construction emissions only.

Construction Phase - Phase 2

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - D

Trips and VMT - Default values.

Grading - No grading during Phase 2. Grading for phase 2 occured under Phase 1.

Architectural Coating - Interior VOC limts reduced from 100 g/L to 50 g/L based on SMAQMD Rule 443 that provides a VOC limit for flat coatings of 50 g/L.

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust - Project will not have unpaved roads during the project's operational phase. Therefore, project does not use CARB Unmitigated Unpaved Road Statewide Emission Inventory Method (per CalEEMod User Guidebook).

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 28.33% - reflects project person/du value (2.523) vs. statewide avg. (2.97) and latest statewide data (ARB). Parking Degreaser EF red. by 57.5% (corrects for walking paths modeled as 'parking lot').

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

The Ranch - City of Rancho Cordova (Construction Only - Phase 2) - Sacramento County, Summer

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	75.00	609.00
tblConstructionPhase	NumDays	1,110.00	609.00
tblConstructionPhase	NumDays	75.00	65.00
tblConstructionPhase	PhaseEndDate	8/26/2026	11/28/2025
tblConstructionPhase	PhaseEndDate	1/28/2026	7/31/2025
tblConstructionPhase	PhaseEndDate	5/13/2026	12/30/2022
tblConstructionPhase	PhaseStartDate	5/14/2026	8/1/2023
tblConstructionPhase	PhaseStartDate	10/28/2021	4/1/2023
tblConstructionPhase	PhaseStartDate	1/29/2026	10/1/2022
tblLandUse	LandUseSquareFeet	44,576.25	44,576.40
tblLandUse	LotAcreage	63.96	20.87
tblLandUse	LotAcreage	42.00	25.97
tblLandUse	LotAcreage	0.50	1.40
tblLandUse	LotAcreage	1.02	1.23
tblLandUse	Population	526.00	559.00
tblLandUse	Population	561.00	437.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblTripsAndVMT	WorkerTripNumber	23.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.7923	15.6581	16.9971	0.0286	0.3270	0.8102	1.1372	0.0837	0.7622	0.8460	0.0000	2,724.3016	2,724.3016	0.7140	0.0000	2,739.7056
2023	10.4578	21.9358	28.3472	0.0715	3.0684	0.7955	3.8639	0.8234	0.7525	1.5759	0.0000	7,092.4544	7,092.4544	0.7691	0.0000	7,111.6826
2024	10.2640	20.7489	27.5348	0.0705	3.0683	0.6984	3.7667	0.8234	0.6604	1.4837	0.0000	6,986.1945	6,986.1945	0.7580	0.0000	7,005.1439
2025	10.0791	19.5521	26.7856	0.0694	3.0683	0.6026	3.6708	0.8233	0.5697	1.3930	0.0000	6,881.5335	6,881.5335	0.7483	0.0000	6,900.2396
Maximum	**10.4578**	**21.9358**	**28.3472**	**0.0715**	**3.0684**	**0.8102**	**3.8639**	**0.8234**	**0.7622**	**1.5759**	**0.0000**	**7,092.4544**	**7,092.4544**	**0.7691**	**0.0000**	**7,111.6826**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.7923	15.6581	16.9971	0.0286	0.2996	0.8102	1.1098	0.0770	0.7622	0.8392	0.0000	2,724.3016	2,724.3016	0.7140	0.0000	2,739.7056
2023	10.4578	21.9358	28.3472	0.0715	2.8342	0.7955	3.6297	0.7659	0.7525	1.5184	0.0000	7,092.4544	7,092.4544	0.7691	0.0000	7,111.6826
2024	10.2640	20.7489	27.5348	0.0705	2.8342	0.6984	3.5326	0.7659	0.6604	1.4263	0.0000	6,986.1945	6,986.1945	0.7580	0.0000	7,005.1439
2025	10.0791	19.5521	26.7856	0.0694	2.8342	0.6026	3.4367	0.7659	0.5697	1.3355	0.0000	6,881.5335	6,881.5335	0.7483	0.0000	6,900.2396
Maximum	**10.4578**	**21.9358**	**28.3472**	**0.0715**	**2.8342**	**0.8102**	**3.6297**	**0.7659**	**0.7622**	**1.5184**	**0.0000**	**7,092.4544**	**7,092.4544**	**0.7691**	**0.0000**	**7,111.6826**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**7.66**	**0.00**	**5.87**	**7.01**	**0.00**	**3.38**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	15.1943	0.3860	33.4604	1.7700e-003		0.1862	0.1862		0.1862	0.1862	0.0000	60.4616	60.4616	0.0576	0.0000	61.9005
Energy	0.2254	1.9265	0.8198	0.0123		0.1558	0.1558		0.1558	0.1558		2,459.3602	2,459.3602	0.0471	0.0451	2,473.9750
Mobile	2.6270	10.3963	27.1001	0.1212	13.6743	0.0575	13.7318	3.6508	0.0534	3.7042		12,354.9060	12,354.9060	0.4232		12,365.4853
Total	**18.0467**	**12.7089**	**61.3802**	**0.1353**	**13.6743**	**0.3995**	**14.0737**	**3.6508**	**0.3954**	**4.0462**	**0.0000**	**14,874.7278**	**14,874.7278**	**0.5279**	**0.0451**	**14,901.3608**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	15.1943	0.3860	33.4604	1.7700e-003		0.1862	0.1862		0.1862	0.1862	0.0000	60.4616	60.4616	0.0576	0.0000	61.9005
Energy	0.2254	1.9265	0.8198	0.0123		0.1558	0.1558		0.1558	0.1558		2,459.3602	2,459.3602	0.0471	0.0451	2,473.9750
Mobile	2.6270	10.3963	27.1001	0.1212	13.6743	0.0575	13.7318	3.6508	0.0534	3.7042		12,354.9060	12,354.9060	0.4232		12,365.4853
Total	**18.0467**	**12.7089**	**61.3802**	**0.1353**	**13.6743**	**0.3995**	**14.0737**	**3.6508**	**0.3954**	**4.0462**	**0.0000**	**14,874.7278**	**14,874.7278**	**0.5279**	**0.0451**	**14,901.3608**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	8/1/2023	11/28/2025	5	609	
2	Building Construction	Building Construction	4/1/2023	7/31/2025	5	609	
3	Improvements for Phase 2	Trenching	4/1/2022	9/30/2022	5	131	
4	Paving	Paving	10/1/2022	12/30/2022	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 1,143,315; Residential Outdoor: 381,105; Non-Residential Indoor: 10,500; Non-Residential Outdoor: 3,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Improvements for Phase 2	Cranes	1	7.00	231	0.29
Improvements for Phase 2	Forklifts	3	8.00	89	0.20
Improvements for Phase 2	Generator Sets	1	8.00	84	0.74
Improvements for Phase 2	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Improvements for Phase 2	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Improvements for Phase 2	9	23.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	290.00	70.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Improvements for Phase 2	9	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	58.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.3179					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**7.5096**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.2 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2028	0.0963	1.4708	4.1400e-003	0.4412	2.8300e-003	0.4440	0.1170	2.6100e-003	0.1196		412.5008	412.5008	9.5300e-003		412.7391
Total	**0.2028**	**0.0963**	**1.4708**	**4.1400e-003**	**0.4412**	**2.8300e-003**	**0.4440**	**0.1170**	**2.6100e-003**	**0.1196**		**412.5008**	**412.5008**	**9.5300e-003**		**412.7391**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.3179					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**7.5096**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.2 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2028	0.0963	1.4708	4.1400e-003	0.4067	2.8300e-003	0.4095	0.1086	2.6100e-003	0.1112		412.5008	412.5008	9.5300e-003		412.7391
Total	**0.2028**	**0.0963**	**1.4708**	**4.1400e-003**	**0.4067**	**2.8300e-003**	**0.4095**	**0.1086**	**2.6100e-003**	**0.1112**		**412.5008**	**412.5008**	**9.5300e-003**		**412.7391**

3.2 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.3179					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**7.4987**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.2 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1904	0.0871	1.3644	3.9800e-003	0.4412	2.7700e-003	0.4440	0.1170	2.5500e-003	0.1196		396.4445	396.4445	8.6000e-003		396.6595
Total	**0.1904**	**0.0871**	**1.3644**	**3.9800e-003**	**0.4412**	**2.7700e-003**	**0.4440**	**0.1170**	**2.5500e-003**	**0.1196**		**396.4445**	**396.4445**	**8.6000e-003**		**396.6595**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.3179					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**7.4987**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.2 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1904	0.0871	1.3644	3.9800e-003	0.4067	2.7700e-003	0.4095	0.1086	2.5500e-003	0.1111		396.4445	396.4445	8.6000e-003		396.6595
Total	**0.1904**	**0.0871**	**1.3644**	**3.9800e-003**	**0.4067**	**2.7700e-003**	**0.4095**	**0.1086**	**2.5500e-003**	**0.1111**		**396.4445**	**396.4445**	**8.6000e-003**		**396.6595**

3.2 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.3179					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**7.4888**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.2 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1797	0.0791	1.2655	3.8200e-003	0.4412	2.7200e-003	0.4439	0.1170	2.5000e-003	0.1195		380.5514	380.5514	7.8000e-003		380.7463
Total	**0.1797**	**0.0791**	**1.2655**	**3.8200e-003**	**0.4412**	**2.7200e-003**	**0.4439**	**0.1170**	**2.5000e-003**	**0.1195**		**380.5514**	**380.5514**	**7.8000e-003**		**380.7463**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.3179					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**7.4888**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.2 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1797	0.0791	1.2655	3.8200e-003	0.4067	2.7200e-003	0.4094	0.1086	2.5000e-003	0.1111		380.5514	380.5514	7.8000e-003		380.7463
Total	**0.1797**	**0.0791**	**1.2655**	**3.8200e-003**	**0.4067**	**2.7200e-003**	**0.4094**	**0.1086**	**2.5000e-003**	**0.1111**		**380.5514**	**380.5514**	**7.8000e-003**		**380.7463**

3.3 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

3.3 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1586	5.6699	1.4674	0.0168	0.4211	7.9700e-003	0.4291	0.1212	7.6200e-003	0.1288		1,780.7918	1,780.7918	0.0873		1,782.9732
Worker	1.0140	0.4817	7.3539	0.0207	2.2060	0.0142	2.2202	0.5852	0.0130	0.5982		2,062.5038	2,062.5038	0.0477		2,063.6953
Total	**1.1727**	**6.1516**	**8.8213**	**0.0375**	**2.6271**	**0.0221**	**2.6493**	**0.7063**	**0.0207**	**0.7270**		**3,843.2956**	**3,843.2956**	**0.1349**		**3,846.6685**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

3.3 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1586	5.6699	1.4674	0.0168	0.3940	7.9700e-003	0.4020	0.1145	7.6200e-003	0.1221		1,780.7918	1,780.7918	0.0873		1,782.9732
Worker	1.0140	0.4817	7.3539	0.0207	2.0335	0.0142	2.0476	0.5428	0.0130	0.5559		2,062.5038	2,062.5038	0.0477		2,063.6953
Total	**1.1727**	**6.1516**	**8.8213**	**0.0375**	**2.4275**	**0.0221**	**2.4497**	**0.6573**	**0.0207**	**0.6780**		**3,843.2956**	**3,843.2956**	**0.1349**		**3,846.6685**

3.3 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

3.3 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1511	5.5637	1.3715	0.0167	0.4211	7.5800e-003	0.4287	0.1212	7.2500e-003	0.1284		1,770.3805	1,770.3805	0.0862		1,772.5351
Worker	0.9522	0.4355	6.8220	0.0199	2.2060	0.0138	2.2199	0.5852	0.0127	0.5979		1,982.2226	1,982.2226	0.0430		1,983.2974
Total	**1.1034**	**5.9992**	**8.1935**	**0.0366**	**2.6271**	**0.0214**	**2.6485**	**0.7063**	**0.0200**	**0.7263**		**3,752.6030**	**3,752.6030**	**0.1292**		**3,755.8325**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

3.3 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1511	5.5637	1.3715	0.0167	0.3940	7.5800e-003	0.4016	0.1145	7.2500e-003	0.1218		1,770.3805	1,770.3805	0.0862		1,772.5351
Worker	0.9522	0.4355	6.8220	0.0199	2.0335	0.0138	2.0473	0.5428	0.0127	0.5556		1,982.2226	1,982.2226	0.0430		1,983.2974
Total	**1.1034**	**5.9992**	**8.1935**	**0.0366**	**2.4275**	**0.0214**	**2.4489**	**0.6573**	**0.0200**	**0.6773**		**3,752.6030**	**3,752.6030**	**0.1292**		**3,755.8325**

3.3 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.3 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1450	5.4622	1.2987	0.0166	0.4210	7.2000e-003	0.4282	0.1211	6.8900e-003	0.1280		1,760.3026	1,760.3026	0.0852		1,762.4318
Worker	0.8983	0.3956	6.3276	0.0191	2.2060	0.0136	2.2196	0.5852	0.0125	0.5977		1,902.7571	1,902.7571	0.0390		1,903.7316
Total	**1.0433**	**5.8578**	**7.6263**	**0.0357**	**2.6271**	**0.0208**	**2.6479**	**0.7063**	**0.0194**	**0.7257**		**3,663.0597**	**3,663.0597**	**0.1242**		**3,666.1634**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.3 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1450	5.4622	1.2987	0.0166	0.3940	7.2000e-003	0.4012	0.1145	6.8900e-003	0.1214		1,760.3026	1,760.3026	0.0852		1,762.4318
Worker	0.8983	0.3956	6.3276	0.0191	2.0335	0.0136	2.0471	0.5428	0.0125	0.5553		1,902.7571	1,902.7571	0.0390		1,903.7316
Total	**1.0433**	**5.8578**	**7.6263**	**0.0357**	**2.4275**	**0.0208**	**2.4482**	**0.6573**	**0.0194**	**0.6767**		**3,663.0597**	**3,663.0597**	**0.1242**		**3,666.1634**

3.4 Improvements for Phase 2 - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.4 Improvements for Phase 2 - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0860	0.0424	0.6337	1.7100e-003	0.3270	1.1500e-003	0.3282	0.0837	1.0600e-003	0.0848		169.9680	169.9680	4.2200e-003		170.0734
Total	**0.0860**	**0.0424**	**0.6337**	**1.7100e-003**	**0.3270**	**1.1500e-003**	**0.3282**	**0.0837**	**1.0600e-003**	**0.0848**		**169.9680**	**169.9680**	**4.2200e-003**		**170.0734**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.4 Improvements for Phase 2 - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0860	0.0424	0.6337	1.7100e-003	0.2996	1.1500e-003	0.3008	0.0770	1.0600e-003	0.0781		169.9680	169.9680	4.2200e-003		170.0734
Total	**0.0860**	**0.0424**	**0.6337**	**1.7100e-003**	**0.2996**	**1.1500e-003**	**0.3008**	**0.0770**	**1.0600e-003**	**0.0781**		**169.9680**	**169.9680**	**4.2200e-003**		**170.0734**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.5 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.5 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.6270	10.3963	27.1001	0.1212	13.6743	0.0575	13.7318	3.6508	0.0534	3.7042		12,354.9060	12,354.9060	0.4232		12,365.4853
Unmitigated	2.6270	10.3963	27.1001	0.1212	13.6743	0.0575	13.7318	3.6508	0.0534	3.7042		12,354.9060	12,354.9060	0.4232		12,365.4853

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.95	11.38	8.37	6,449	6,449
City Park	1.93	23.28	17.13	13,200	13,200
City Park	4.16	50.05	36.83	28,377	28,377
Retirement Community	504.00	426.30	409.50	1,230,193	1,230,193
Single Family Housing	1,875.44	1,952.27	1698.14	4,775,752	4,775,752
Total	2,386.48	2,463.28	2,169.97	6,053,972	6,053,972

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2254	1.9265	0.8198	0.0123		0.1558	0.1558		0.1558	0.1558		2,459.3602	2,459.3602	0.0471	0.0451	2,473.9750
NaturalGas Unmitigated	0.2254	1.9265	0.8198	0.0123		0.1558	0.1558		0.1558	0.1558		2,459.3602	2,459.3602	0.0471	0.0451	2,473.9750

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	6960.91	0.0751	0.6415	0.2730	4.0900e-003		0.0519	0.0519		0.0519	0.0519		818.9303	818.9303	0.0157	0.0150	823.7968
Single Family Housing	13943.7	0.1504	1.2850	0.5468	8.2000e-003		0.1039	0.1039		0.1039	0.1039		1,640.4300	1,640.4300	0.0314	0.0301	1,650.1782
Total		**0.2254**	**1.9265**	**0.8198**	**0.0123**		**0.1558**	**0.1558**		**0.1558**	**0.1558**		**2,459.3602**	**2,459.3602**	**0.0471**	**0.0451**	**2,473.9750**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	6.96091	0.0751	0.6415	0.2730	4.0900e-003		0.0519	0.0519		0.0519	0.0519		818.9303	818.9303	0.0157	0.0150	823.7968
Single Family Housing	13.9437	0.1504	1.2850	0.5468	8.2000e-003		0.1039	0.1039		0.1039	0.1039		1,640.4300	1,640.4300	0.0314	0.0301	1,650.1782
Total		**0.2254**	**1.9265**	**0.8198**	**0.0123**		**0.1558**	**0.1558**		**0.1558**	**0.1558**		**2,459.3602**	**2,459.3602**	**0.0471**	**0.0451**	**2,473.9750**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	15.1943	0.3860	33.4604	1.7700e-003		0.1862	0.1862		0.1862	0.1862	0.0000	60.4616	60.4616	0.0576	0.0000	61.9005
Unmitigated	15.1943	0.3860	33.4604	1.7700e-003		0.1862	0.1862		0.1862	0.1862	0.0000	60.4616	60.4616	0.0576	0.0000	61.9005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.9536					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.2402					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0005	0.3860	33.4604	1.7700e-003		0.1862	0.1862		0.1862	0.1862		60.4616	60.4616	0.0576		61.9005
Total	**15.1943**	**0.3860**	**33.4604**	**1.7700e-003**		**0.1862**	**0.1862**		**0.1862**	**0.1862**	**0.0000**	**60.4616**	**60.4616**	**0.0576**	**0.0000**	**61.9005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.9536					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.2402					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0005	0.3860	33.4604	1.7700e-003		0.1862	0.1862		0.1862	0.1862		60.4616	60.4616	0.0576		61.9005
Total	**15.1943**	**0.3860**	**33.4604**	**1.7700e-003**		**0.1862**	**0.1862**		**0.1862**	**0.1862**	**0.0000**	**60.4616**	**60.4616**	**0.0576**	**0.0000**	**61.9005**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

The Ranch - City of Rancho Cordova (Construction Only - Phase 2)

Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	197.00	Dwelling Unit	20.87	354,600.00	559
Retirement Community	210.00	Dwelling Unit	25.97	210,000.00	437
City Park	0.50	Acre	1.40	21,780.00	0
City Park	1.02	Acre	1.23	44,576.40	0
City Park	2.20	Acre	2.20	95,832.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

The Ranch - City of Rancho Cordova (Construction Only - Phase 2) - Sacramento County, Winter

Project Characteristics - Estimated construction state date of April 2022 for Phase 2 (provided by Applicant).

Land Use - This model run provides construction emissions only.

Construction Phase - Phase 2

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - D

Trips and VMT - Default values.

Grading - No grading during Phase 2. Grading for phase 2 occured under Phase 1.

Architectural Coating - Interior VOC limts reduced from 100 g/L to 50 g/L based on SMAQMD Rule 443 that provides a VOC limit for flat coatings of 50 g/L.

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust - Project will not have unpaved roads during the project's operational phase. Therefore, project does not use CARB Unmitigated Unpaved Road Statewide Emission Inventory Method (per CalEEMod User Guidebook).

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 28.33% - reflects project person/du value (2.523) vs. statewide avg. (2.97) and latest statewide data (ARB). Parking Degreaser EF red. by 57.5% (corrects for walking paths modeled as 'parking lot').

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

The Ranch - City of Rancho Cordova (Construction Only - Phase 2) - Sacramento County, Winter

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	75.00	609.00
tblConstructionPhase	NumDays	1,110.00	609.00
tblConstructionPhase	NumDays	75.00	65.00
tblConstructionPhase	PhaseEndDate	8/26/2026	11/28/2025
tblConstructionPhase	PhaseEndDate	1/28/2026	7/31/2025
tblConstructionPhase	PhaseEndDate	5/13/2026	12/30/2022
tblConstructionPhase	PhaseStartDate	5/14/2026	8/1/2023
tblConstructionPhase	PhaseStartDate	10/28/2021	4/1/2023
tblConstructionPhase	PhaseStartDate	1/29/2026	10/1/2022
tblLandUse	LandUseSquareFeet	44,576.25	44,576.40
tblLandUse	LotAcreage	63.96	20.87
tblLandUse	LotAcreage	42.00	25.97
tblLandUse	LotAcreage	0.50	1.40
tblLandUse	LotAcreage	1.02	1.23
tblLandUse	Population	526.00	559.00
tblLandUse	Population	561.00	437.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblTripsAndVMT	WorkerTripNumber	23.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.7856	15.6680	16.9016	0.0284	0.3270	0.8102	1.1372	0.0837	0.7622	0.8460	0.0000	2,703.6177	2,703.6177	0.7140	0.0000	2,719.0089
2023	10.3764	22.1280	27.2080	0.0681	3.0684	0.7962	3.8645	0.8234	0.7532	1.5765	0.0000	6,745.4260	6,745.4260	0.7690	0.0000	6,764.6509
2024	10.1906	20.9246	26.4563	0.0671	3.0683	0.6990	3.7673	0.8234	0.6610	1.4843	0.0000	6,651.4696	6,651.4696	0.7584	0.0000	6,670.4290
2025	10.0123	19.7138	25.7719	0.0662	3.0683	0.6031	3.6714	0.8233	0.5702	1.3935	0.0000	6,559.0034	6,559.0034	0.7491	0.0000	6,577.7307
Maximum	**10.3764**	**22.1280**	**27.2080**	**0.0681**	**3.0684**	**0.8102**	**3.8645**	**0.8234**	**0.7622**	**1.5765**	**0.0000**	**6,745.4260**	**6,745.4260**	**0.7690**	**0.0000**	**6,764.6509**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.7856	15.6680	16.9016	0.0284	0.2996	0.8102	1.1098	0.0770	0.7622	0.8392	0.0000	2,703.6177	2,703.6177	0.7140	0.0000	2,719.0089
2023	10.3764	22.1280	27.2080	0.0681	2.8342	0.7962	3.6304	0.7659	0.7532	1.5191	0.0000	6,745.4260	6,745.4260	0.7690	0.0000	6,764.6509
2024	10.1906	20.9246	26.4563	0.0671	2.8342	0.6990	3.5332	0.7659	0.6610	1.4268	0.0000	6,651.4696	6,651.4696	0.7584	0.0000	6,670.4290
2025	10.0123	19.7138	25.7719	0.0662	2.8342	0.6031	3.4373	0.7659	0.5702	1.3361	0.0000	6,559.0034	6,559.0034	0.7491	0.0000	6,577.7307
Maximum	**10.3764**	**22.1280**	**27.2080**	**0.0681**	**2.8342**	**0.8102**	**3.6304**	**0.7659**	**0.7622**	**1.5191**	**0.0000**	**6,745.4260**	**6,745.4260**	**0.7690**	**0.0000**	**6,764.6509**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**7.66**	**0.00**	**5.87**	**7.01**	**0.00**	**3.38**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	15.1943	0.3860	33.4604	1.7700e-003		0.1862	0.1862		0.1862	0.1862	0.0000	60.4616	60.4616	0.0576	0.0000	61.9005
Energy	0.2254	1.9265	0.8198	0.0123		0.1558	0.1558		0.1558	0.1558		2,459.3602	2,459.3602	0.0471	0.0451	2,473.9750
Mobile	1.9085	10.8153	24.4919	0.1100	13.6743	0.0577	13.7320	3.6508	0.0537	3.7045		11,227.9875	11,227.9875	0.4292		11,238.7186
Total	**17.3282**	**13.1278**	**58.7720**	**0.1241**	**13.6743**	**0.3997**	**14.0740**	**3.6508**	**0.3956**	**4.0465**	**0.0000**	**13,747.8094**	**13,747.8094**	**0.5339**	**0.0451**	**13,774.5941**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	15.1943	0.3860	33.4604	1.7700e-003		0.1862	0.1862		0.1862	0.1862	0.0000	60.4616	60.4616	0.0576	0.0000	61.9005
Energy	0.2254	1.9265	0.8198	0.0123		0.1558	0.1558		0.1558	0.1558		2,459.3602	2,459.3602	0.0471	0.0451	2,473.9750
Mobile	1.9085	10.8153	24.4919	0.1100	13.6743	0.0577	13.7320	3.6508	0.0537	3.7045		11,227.9875	11,227.9875	0.4292		11,238.7186
Total	**17.3282**	**13.1278**	**58.7720**	**0.1241**	**13.6743**	**0.3997**	**14.0740**	**3.6508**	**0.3956**	**4.0465**	**0.0000**	**13,747.8094**	**13,747.8094**	**0.5339**	**0.0451**	**13,774.5941**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	8/1/2023	11/28/2025	5	609	
2	Building Construction	Building Construction	4/1/2023	7/31/2025	5	609	
3	Improvements for Phase 2	Trenching	4/1/2022	9/30/2022	5	131	
4	Paving	Paving	10/1/2022	12/30/2022	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 1,143,315; Residential Outdoor: 381,105; Non-Residential Indoor: 10,500; Non-Residential Outdoor: 3,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Improvements for Phase 2	Cranes	1	7.00	231	0.29
Improvements for Phase 2	Forklifts	3	8.00	89	0.20
Improvements for Phase 2	Generator Sets	1	8.00	84	0.74
Improvements for Phase 2	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Improvements for Phase 2	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Improvements for Phase 2	9	23.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	290.00	70.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Improvements for Phase 2	9	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	58.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.3179					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**7.5096**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.2 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1876	0.1189	1.2434	3.6400e-003	0.4412	2.8300e-003	0.4440	0.1170	2.6100e-003	0.1196		362.3243	362.3243	8.3400e-003		362.5329
Total	**0.1876**	**0.1189**	**1.2434**	**3.6400e-003**	**0.4412**	**2.8300e-003**	**0.4440**	**0.1170**	**2.6100e-003**	**0.1196**		**362.3243**	**362.3243**	**8.3400e-003**		**362.5329**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.3179					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**7.5096**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.2 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1876	0.1189	1.2434	3.6400e-003	0.4067	2.8300e-003	0.4095	0.1086	2.6100e-003	0.1112		362.3243	362.3243	8.3400e-003		362.5329
Total	**0.1876**	**0.1189**	**1.2434**	**3.6400e-003**	**0.4067**	**2.8300e-003**	**0.4095**	**0.1086**	**2.6100e-003**	**0.1112**		**362.3243**	**362.3243**	**8.3400e-003**		**362.5329**

3.2 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.3179					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**7.4987**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.2 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1766	0.1074	1.1496	3.4900e-003	0.4412	2.7700e-003	0.4440	0.1170	2.5500e-003	0.1196		348.2453	348.2453	7.5100e-003		348.4331
Total	**0.1766**	**0.1074**	**1.1496**	**3.4900e-003**	**0.4412**	**2.7700e-003**	**0.4440**	**0.1170**	**2.5500e-003**	**0.1196**		**348.2453**	**348.2453**	**7.5100e-003**		**348.4331**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.3179					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**7.4987**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.2 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1766	0.1074	1.1496	3.4900e-003	0.4067	2.7700e-003	0.4095	0.1086	2.5500e-003	0.1111		348.2453	348.2453	7.5100e-003		348.4331
Total	**0.1766**	**0.1074**	**1.1496**	**3.4900e-003**	**0.4067**	**2.7700e-003**	**0.4095**	**0.1086**	**2.5500e-003**	**0.1111**		**348.2453**	**348.2453**	**7.5100e-003**		**348.4331**

3.2 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.3179					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**7.4888**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.2 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1671	0.0975	1.0636	3.3500e-003	0.4412	2.7200e-003	0.4439	0.1170	2.5000e-003	0.1195		334.3083	334.3083	6.8000e-003		334.4782
Total	**0.1671**	**0.0975**	**1.0636**	**3.3500e-003**	**0.4412**	**2.7200e-003**	**0.4439**	**0.1170**	**2.5000e-003**	**0.1195**		**334.3083**	**334.3083**	**6.8000e-003**		**334.4782**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.3179					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**7.4888**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.2 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1671	0.0975	1.0636	3.3500e-003	0.4067	2.7200e-003	0.4094	0.1086	2.5000e-003	0.1111		334.3083	334.3083	6.8000e-003		334.4782
Total	**0.1671**	**0.0975**	**1.0636**	**3.3500e-003**	**0.4067**	**2.7200e-003**	**0.4094**	**0.1086**	**2.5000e-003**	**0.1111**		**334.3083**	**334.3083**	**6.8000e-003**		**334.4782**

3.3 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

3.3 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1686	5.7270	1.6923	0.0164	0.4211	8.6600e-003	0.4298	0.1212	8.2800e-003	0.1295		1,734.8221	1,734.8221	0.0942		1,737.1783
Worker	0.9379	0.5943	6.2172	0.0182	2.2060	0.0142	2.2202	0.5852	0.0130	0.5982		1,811.6216	1,811.6216	0.0417		1,812.6647
Total	**1.1065**	**6.3212**	**7.9095**	**0.0345**	**2.6271**	**0.0228**	**2.6500**	**0.7063**	**0.0213**	**0.7277**		**3,546.4437**	**3,546.4437**	**0.1360**		**3,549.8429**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

3.3 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1686	5.7270	1.6923	0.0164	0.3940	8.6600e-003	0.4027	0.1145	8.2800e-003	0.1228		1,734.8221	1,734.8221	0.0942		1,737.1783
Worker	0.9379	0.5943	6.2172	0.0182	2.0335	0.0142	2.0476	0.5428	0.0130	0.5559		1,811.6216	1,811.6216	0.0417		1,812.6647
Total	**1.1065**	**6.3212**	**7.9095**	**0.0345**	**2.4275**	**0.0228**	**2.4503**	**0.6573**	**0.0213**	**0.6787**		**3,546.4437**	**3,546.4437**	**0.1360**		**3,549.8429**

3.3 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

3.3 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1605	5.6175	1.5815	0.0163	0.4211	8.2000e-003	0.4293	0.1212	7.8400e-003	0.1290		1,724.8511	1,724.8511	0.0931		1,727.1786
Worker	0.8832	0.5371	5.7482	0.0175	2.2060	0.0138	2.2199	0.5852	0.0127	0.5979		1,741.2262	1,741.2262	0.0376		1,742.1654
Total	**1.0437**	**6.1546**	**7.3297**	**0.0337**	**2.6271**	**0.0220**	**2.6491**	**0.7063**	**0.0206**	**0.7269**		**3,466.0774**	**3,466.0774**	**0.1307**		**3,469.3440**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

3.3 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1605	5.6175	1.5815	0.0163	0.3940	8.2000e-003	0.4022	0.1145	7.8400e-003	0.1224		1,724.8511	1,724.8511	0.0931		1,727.1786
Worker	0.8832	0.5371	5.7482	0.0175	2.0335	0.0138	2.0473	0.5428	0.0127	0.5556		1,741.2262	1,741.2262	0.0376		1,742.1654
Total	**1.0437**	**6.1546**	**7.3297**	**0.0337**	**2.4275**	**0.0220**	**2.4495**	**0.6573**	**0.0206**	**0.6779**		**3,466.0774**	**3,466.0774**	**0.1307**		**3,469.3440**

3.3 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.3 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1539	5.5134	1.4967	0.0162	0.4210	7.7600e-003	0.4288	0.1211	7.4200e-003	0.1286		1,715.2315	1,715.2315	0.0920		1,717.5314
Worker	0.8352	0.4876	5.3178	0.0168	2.2060	0.0136	2.2196	0.5852	0.0125	0.5977		1,671.5413	1,671.5413	0.0340		1,672.3912
Total	**0.9891**	**6.0011**	**6.8145**	**0.0329**	**2.6271**	**0.0213**	**2.6484**	**0.7063**	**0.0199**	**0.7262**		**3,386.7727**	**3,386.7727**	**0.1260**		**3,389.9226**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.3 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1539	5.5134	1.4967	0.0162	0.3940	7.7600e-003	0.4017	0.1145	7.4200e-003	0.1219		1,715.2315	1,715.2315	0.0920		1,717.5314
Worker	0.8352	0.4876	5.3178	0.0168	2.0335	0.0136	2.0471	0.5428	0.0125	0.5553		1,671.5413	1,671.5413	0.0340		1,672.3912
Total	**0.9891**	**6.0011**	**6.8145**	**0.0329**	**2.4275**	**0.0213**	**2.4488**	**0.6573**	**0.0199**	**0.6772**		**3,386.7727**	**3,386.7727**	**0.1260**		**3,389.9226**

3.4 Improvements for Phase 2 - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.4 Improvements for Phase 2 - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0794	0.0524	0.5382	1.5000e-003	0.3270	1.1500e-003	0.3282	0.0837	1.0600e-003	0.0848		149.2842	149.2842	3.7000e-003		149.3767
Total	**0.0794**	**0.0524**	**0.5382**	**1.5000e-003**	**0.3270**	**1.1500e-003**	**0.3282**	**0.0837**	**1.0600e-003**	**0.0848**		**149.2842**	**149.2842**	**3.7000e-003**		**149.3767**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.4 Improvements for Phase 2 - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0794	0.0524	0.5382	1.5000e-003	0.2996	1.1500e-003	0.3008	0.0770	1.0600e-003	0.0781		149.2842	149.2842	3.7000e-003		149.3767
Total	**0.0794**	**0.0524**	**0.5382**	**1.5000e-003**	**0.2996**	**1.1500e-003**	**0.3008**	**0.0770**	**1.0600e-003**	**0.0781**		**149.2842**	**149.2842**	**3.7000e-003**		**149.3767**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.5 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.5 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.9085	10.8153	24.4919	0.1100	13.6743	0.0577	13.7320	3.6508	0.0537	3.7045		11,227.9875	11,227.9875	0.4292		11,238.7186
Unmitigated	1.9085	10.8153	24.4919	0.1100	13.6743	0.0577	13.7320	3.6508	0.0537	3.7045		11,227.9875	11,227.9875	0.4292		11,238.7186

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.95	11.38	8.37	6,449	6,449
City Park	1.93	23.28	17.13	13,200	13,200
City Park	4.16	50.05	36.83	28,377	28,377
Retirement Community	504.00	426.30	409.50	1,230,193	1,230,193
Single Family Housing	1,875.44	1,952.27	1698.14	4,775,752	4,775,752
Total	2,386.48	2,463.28	2,169.97	6,053,972	6,053,972

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2254	1.9265	0.8198	0.0123		0.1558	0.1558		0.1558	0.1558		2,459.3602	2,459.3602	0.0471	0.0451	2,473.9750
NaturalGas Unmitigated	0.2254	1.9265	0.8198	0.0123		0.1558	0.1558		0.1558	0.1558		2,459.3602	2,459.3602	0.0471	0.0451	2,473.9750

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	6960.91	0.0751	0.6415	0.2730	4.0900e-003		0.0519	0.0519		0.0519	0.0519		818.9303	818.9303	0.0157	0.0150	823.7968
Single Family Housing	13943.7	0.1504	1.2850	0.5468	8.2000e-003		0.1039	0.1039		0.1039	0.1039		1,640.4300	1,640.4300	0.0314	0.0301	1,650.1782
Total		**0.2254**	**1.9265**	**0.8198**	**0.0123**		**0.1558**	**0.1558**		**0.1558**	**0.1558**		**2,459.3602**	**2,459.3602**	**0.0471**	**0.0451**	**2,473.9750**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	6.96091	0.0751	0.6415	0.2730	4.0900e-003		0.0519	0.0519		0.0519	0.0519		818.9303	818.9303	0.0157	0.0150	823.7968
Single Family Housing	13.9437	0.1504	1.2850	0.5468	8.2000e-003		0.1039	0.1039		0.1039	0.1039		1,640.4300	1,640.4300	0.0314	0.0301	1,650.1782
Total		**0.2254**	**1.9265**	**0.8198**	**0.0123**		**0.1558**	**0.1558**		**0.1558**	**0.1558**		**2,459.3602**	**2,459.3602**	**0.0471**	**0.0451**	**2,473.9750**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	15.1943	0.3860	33.4604	1.7700e-003		0.1862	0.1862		0.1862	0.1862	0.0000	60.4616	60.4616	0.0576	0.0000	61.9005
Unmitigated	15.1943	0.3860	33.4604	1.7700e-003		0.1862	0.1862		0.1862	0.1862	0.0000	60.4616	60.4616	0.0576	0.0000	61.9005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.9536					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.2402					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0005	0.3860	33.4604	1.7700e-003		0.1862	0.1862		0.1862	0.1862		60.4616	60.4616	0.0576		61.9005
Total	**15.1943**	**0.3860**	**33.4604**	**1.7700e-003**		**0.1862**	**0.1862**		**0.1862**	**0.1862**	**0.0000**	**60.4616**	**60.4616**	**0.0576**	**0.0000**	**61.9005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.9536					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.2402					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0005	0.3860	33.4604	1.7700e-003		0.1862	0.1862		0.1862	0.1862		60.4616	60.4616	0.0576		61.9005
Total	**15.1943**	**0.3860**	**33.4604**	**1.7700e-003**		**0.1862**	**0.1862**		**0.1862**	**0.1862**	**0.0000**	**60.4616**	**60.4616**	**0.0576**	**0.0000**	**61.9005**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

The Ranch - City of Rancho Cordova (Construction Only - Phase 3)

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	268.00	Dwelling Unit	28.39	482,400.00	716
Retirement Community	295.00	Dwelling Unit	36.49	295,000.00	788
Apartments Mid Rise	16.00	Dwelling Unit	0.42	16,000.00	33
City Park	1.02	Acre	1.23	44,576.40	0
City Park	1.58	Acre	1.58	68,824.80	0
City Park	9.10	Acre	9.28	396,396.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Estimated construction state date of February 2025 (provided by Applicant).

Land Use - This model run provides construction emissions only.

Construction Phase - Phase 3

Off-road Equipment -

Off-road Equipment - For building construction, assumes 1 crane, 2 forklifts, 1 generator set, 1 tractor/loader/backhoe, and 1 welder (as provided by the

applicant)
Off-road Equipment -

Off-road Equipment - D

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Assume grading truck haul length = 7 miles (Sacramento dump site).

Grading - Assume 104.38 acres graded (includes roadways). Assume 25,451 cy of material exported during this phase (total for all construction phases of 152,708 cy net export provided by applicant).

Architectural Coating -

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust - Project will not have unpaved roads during the project's operational phase. Therefore, project does not use CARB Unmitigated Unpaved Road Statewide Emission Inventory Method (per CalEEMod User Guidebook).

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 28.33% - reflects project person/du value (2.523) vs. statewide avg. (2.97) and latest statewide data (ARB). Parking Degreaser EF red. by 57.5% (corrects for walking paths modeled as 'parking lot').

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9

tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	60.00	43.00
tblConstructionPhase	NumDays	155.00	132.00
tblConstructionPhase	NumDays	110.00	65.00
tblConstructionPhase	NumDays	1,550.00	717.00
tblConstructionPhase	NumDays	110.00	718.00
tblConstructionPhase	NumDays	60.00	196.00
tblConstructionPhase	NumDays	110.00	86.00
tblConstructionPhase	NumDays	60.00	260.00
tblConstructionPhase	PhaseEndDate	4/25/2025	4/2/2025
tblConstructionPhase	PhaseEndDate	11/28/2025	10/28/2025
tblConstructionPhase	PhaseEndDate	4/9/2032	12/31/2025
tblConstructionPhase	PhaseEndDate	11/7/2031	9/29/2028
tblConstructionPhase	PhaseEndDate	9/10/2032	12/29/2028
tblConstructionPhase	PhaseStartDate	4/26/2025	4/28/2025
tblConstructionPhase	PhaseStartDate	11/8/2031	10/2/2025
tblConstructionPhase	PhaseStartDate	11/29/2025	1/1/2026
tblConstructionPhase	PhaseStartDate	4/10/2032	4/1/2026
tblGrading	AcresOfGrading	330.00	104.38
tblGrading	MaterialExported	0.00	25,451.00
tblLandUse	LandUseSquareFeet	44,576.25	44,576.40
tblLandUse	LotAcreage	87.01	28.39
tblLandUse	LotAcreage	59.00	36.49
tblLandUse	LotAcreage	1.02	1.23
tblLandUse	LotAcreage	9.10	9.28
tblLandUse	Population	43.00	33.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00

tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2025	0.2842	2.8508	2.6751	6.2900e-003	0.8756	0.1120	0.9875	0.4468	0.1030	0.5498	0.0000	557.2187	557.2187	0.1644	0.0000	561.3275
2026	1.8096	3.3190	4.0041	0.0128	0.7008	0.0795	0.7802	0.1889	0.0750	0.2639	0.0000	1,168.9395	1,168.9395	0.1018	0.0000	1,171.4853
2027	2.5339	6.0806	6.2745	0.0175	2.5129	0.2012	2.7141	1.1732	0.1871	1.3603	0.0000	1,581.9932	1,581.9932	0.2290	0.0000	1,587.7175
2028	2.3969	5.0565	4.9616	0.0139	2.3434	0.1725	2.5159	1.1249	0.1604	1.2853	0.0000	1,250.2872	1,250.2872	0.1885	0.0000	1,255.0004
2029	0.0816	0.8207	0.5903	1.2700e-003	0.5915	0.0353	0.6268	0.3239	0.0325	0.3564	0.0000	111.5191	111.5191	0.0352	0.0000	112.3996
Maximum	**2.5339**	**6.0806**	**6.2745**	**0.0175**	**2.5129**	**0.2012**	**2.7141**	**1.1732**	**0.1871**	**1.3603**	**0.0000**	**1,581.9932**	**1,581.9932**	**0.2290**	**0.0000**	**1,587.7175**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2025	0.2842	2.8508	2.6751	6.2900e-003	0.4090	0.1120	0.5210	0.2051	0.1030	0.3081	0.0000	557.2181	557.2181	0.1644	0.0000	561.3269
2026	1.8096	3.3190	4.0041	0.0128	0.6478	0.0795	0.7273	0.1759	0.0750	0.2509	0.0000	1,168.9391	1,168.9391	0.1018	0.0000	1,171.4849
2027	2.5339	6.0806	6.2745	0.0175	1.4830	0.2012	1.6842	0.6242	0.1871	0.8113	0.0000	1,581.9923	1,581.9923	0.2290	0.0000	1,587.7166
2028	2.3969	5.0565	4.9616	0.0139	1.3305	0.1725	1.5030	0.5816	0.1604	0.7419	0.0000	1,250.2865	1,250.2865	0.1885	0.0000	1,254.9997
2029	0.0816	0.8207	0.5903	1.2700e-003	0.2682	0.0353	0.3035	0.1463	0.0325	0.1788	0.0000	111.5189	111.5189	0.0352	0.0000	112.3995
Maximum	**2.5339**	**6.0806**	**6.2745**	**0.0175**	**1.4830**	**0.2012**	**1.6842**	**0.6242**	**0.1871**	**0.8113**	**0.0000**	**1,581.9923**	**1,581.9923**	**0.2290**	**0.0000**	**1,587.7166**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**41.08**	**0.00**	**37.85**	**46.80**	**0.00**	**39.96**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	2-1-2025	4-30-2025	0.8253	0.8253
2	5-1-2025	7-31-2025	1.0164	1.0164
3	8-1-2025	10-31-2025	1.0857	1.0857
4	11-1-2025	1-31-2026	0.5144	0.5144
5	2-1-2026	4-30-2026	1.0449	1.0449
6	5-1-2026	7-31-2026	1.4181	1.4181

7	**8-1-2026**	**10-31-2026**	1.4200	1.4200
8	**11-1-2026**	**1-31-2027**	1.7273	1.7273
9	**2-1-2027**	**4-30-2027**	2.2467	2.2467
10	**5-1-2027**	**7-31-2027**	2.3187	2.3187
11	**8-1-2027**	**10-31-2027**	2.1254	2.1254
12	**11-1-2027**	**1-31-2028**	1.7218	1.7218
13	**2-1-2028**	**4-30-2028**	1.6658	1.6658
14	**5-1-2028**	**7-31-2028**	2.3077	2.3077
15	**8-1-2028**	**10-31-2028**	2.0011	2.0011
16	**11-1-2028**	**1-31-2029**	1.2420	1.2420
17	**2-1-2029**	**4-30-2029**	0.5752	0.5752
		Highest	2.3187	2.3187

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.8083	0.0687	5.9502	3.2000e-004		0.0331	0.0331		0.0331	0.0331	0.0000	9.7539	9.7539	9.2900e-003	0.0000	9.9860
Energy	0.0574	0.4907	0.2088	3.1300e-003		0.0397	0.0397		0.0397	0.0397	0.0000	1,562.4815	1,562.4815	0.0597	0.0205	1,570.0908
Mobile	0.4990	2.5903	5.8155	0.0274	3.2166	0.0140	3.2306	0.8612	0.0130	0.8742	0.0000	2,536.2114	2,536.2114	0.0925	0.0000	2,538.5245
Waste						0.0000	0.0000		0.0000	0.0000	81.5679	0.0000	81.5679	4.8205	0.0000	202.0809
Water						0.0000	0.0000		0.0000	0.0000	13.3469	85.6819	99.0287	0.0502	0.0299	109.1914
Total	**4.3647**	**3.1496**	**11.9745**	**0.0309**	**3.2166**	**0.0868**	**3.3033**	**0.8612**	**0.0858**	**0.9470**	**94.9147**	**4,194.1286**	**4,289.0433**	**5.0322**	**0.0504**	**4,429.8737**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.8083	0.0687	5.9502	3.2000e-004		0.0331	0.0331		0.0331	0.0331	0.0000	9.7539	9.7539	9.2900e-003	0.0000	9.9860
Energy	0.0574	0.4907	0.2088	3.1300e-003		0.0397	0.0397		0.0397	0.0397	0.0000	1,562.4815	1,562.4815	0.0597	0.0205	1,570.0908
Mobile	0.4990	2.5903	5.8155	0.0274	3.2166	0.0140	3.2306	0.8612	0.0130	0.8742	0.0000	2,536.2114	2,536.2114	0.0925	0.0000	2,538.5245
Waste						0.0000	0.0000		0.0000	0.0000	81.5679	0.0000	81.5679	4.8205	0.0000	202.0809
Water						0.0000	0.0000		0.0000	0.0000	13.3469	85.6819	99.0287	0.0502	0.0299	109.1914
Total	**4.3647**	**3.1496**	**11.9745**	**0.0309**	**3.2166**	**0.0868**	**3.3033**	**0.8612**	**0.0858**	**0.9470**	**94.9147**	**4,194.1286**	**4,289.0433**	**5.0322**	**0.0504**	**4,429.8737**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	1,585.9200
Vegetation Land Change	-1,057.2430
Total	**528.6770**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	2/1/2025	4/2/2025	5	43	
2	Grading	Grading	4/28/2025	10/28/2025	5	132	
3	Building Construction	Building Construction	1/1/2026	9/29/2028	5	717	
4	Paving	Paving	10/2/2025	12/31/2025	5	65	
5	Architectural Coating	Architectural Coating	4/1/2026	12/29/2028	5	718	
6	Site Preparation and Grading for Rancho Cordova Widening	Site Preparation	1/1/2027	10/1/2027	5	196	
7	Paving for Rancho Cordova Widening	Paving	10/2/2027	1/31/2028	5	86	
8	Site Prepration for Park - Lot D	Site Preparation	4/1/2028	3/30/2029	5	260	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 104.38

Acres of Paving: 0

Residential Indoor: 1,606,635; Residential Outdoor: 535,545; Non-Residential Indoor: 10,500; Non-Residential Outdoor: 3,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving for Rancho Cordova Widening	Pavers	2	8.00	130	0.42
Paving for Rancho Cordova Widening	Paving Equipment	2	8.00	132	0.36
Paving for Rancho Cordova Widening	Rollers	2	8.00	80	0.38
Site Preparation and Grading for Rancho Cordova Widening	Rubber Tired Dozers	3	8.00	247	0.40
Site Prepration for Park - Lot D	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation and Grading for Rancho Cordova Widening	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Prepration for Park - Lot D	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	3,181.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	535.00	145.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	107.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Paving for Rancho Cordova Widening	6	15.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Site Preparation and Grading for Rancho C	7	18.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Site Prepration for Park - Lot D	7	18.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3911	0.0000	0.3911	0.2139	0.0000	0.2139	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0532	0.5425	0.3851	8.2000e-004		0.0234	0.0234		0.0215	0.0215	0.0000	71.9540	71.9540	0.0233	0.0000	72.5358
Total	**0.0532**	**0.5425**	**0.3851**	**8.2000e-004**	**0.3911**	**0.0234**	**0.4144**	**0.2139**	**0.0215**	**0.2354**	**0.0000**	**71.9540**	**71.9540**	**0.0233**	**0.0000**	**72.5358**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.9200e-003	0.1818	0.0381	5.0000e-004	9.4000e-003	2.6000e-004	9.6600e-003	2.5800e-003	2.5000e-004	2.8300e-003	0.0000	48.6507	48.6507	3.4500e-003	0.0000	48.7369
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0400e-003	5.8000e-004	7.0900e-003	2.0000e-005	2.8400e-003	2.0000e-005	2.8600e-003	7.6000e-004	2.0000e-005	7.7000e-004	0.0000	2.0828	2.0828	4.0000e-005	0.0000	2.0838
Total	**4.9600e-003**	**0.1824**	**0.0452**	**5.2000e-004**	**0.0122**	**2.8000e-004**	**0.0125**	**3.3400e-003**	**2.7000e-004**	**3.6000e-003**	**0.0000**	**50.7334**	**50.7334**	**3.4900e-003**	**0.0000**	**50.8207**

3.2 Site Preparation - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1760	0.0000	0.1760	0.0963	0.0000	0.0963	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0532	0.5425	0.3851	8.2000e-004		0.0234	0.0234		0.0215	0.0215	0.0000	71.9539	71.9539	0.0233	0.0000	72.5357
Total	**0.0532**	**0.5425**	**0.3851**	**8.2000e-004**	**0.1760**	**0.0234**	**0.1994**	**0.0963**	**0.0215**	**0.1178**	**0.0000**	**71.9539**	**71.9539**	**0.0233**	**0.0000**	**72.5357**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.9200e-003	0.1818	0.0381	5.0000e-004	8.7700e-003	2.6000e-004	9.0200e-003	2.4300e-003	2.5000e-004	2.6700e-003	0.0000	48.6507	48.6507	3.4500e-003	0.0000	48.7369
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0400e-003	5.8000e-004	7.0900e-003	2.0000e-005	2.6200e-003	2.0000e-005	2.6400e-003	7.0000e-004	2.0000e-005	7.2000e-004	0.0000	2.0828	2.0828	4.0000e-005	0.0000	2.0838
Total	**4.9600e-003**	**0.1824**	**0.0452**	**5.2000e-004**	**0.0114**	**2.8000e-004**	**0.0117**	**3.1300e-003**	**2.7000e-004**	**3.3900e-003**	**0.0000**	**50.7334**	**50.7334**	**3.4900e-003**	**0.0000**	**50.8207**

3.3 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4528	0.0000	0.4528	0.2245	0.0000	0.2245	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1915	1.8442	1.7379	4.1000e-003		0.0746	0.0746		0.0687	0.0687	0.0000	359.7410	359.7410	0.1164	0.0000	362.6497
Total	**0.1915**	**1.8442**	**1.7379**	**4.1000e-003**	**0.4528**	**0.0746**	**0.5275**	**0.2245**	**0.0687**	**0.2931**	**0.0000**	**359.7410**	**359.7410**	**0.1164**	**0.0000**	**362.6497**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5500e-003	1.9800e-003	0.0242	8.0000e-005	9.6900e-003	6.0000e-005	9.7600e-003	2.5800e-003	6.0000e-005	2.6400e-003	0.0000	7.1040	7.1040	1.4000e-004	0.0000	7.1076
Total	**3.5500e-003**	**1.9800e-003**	**0.0242**	**8.0000e-005**	**9.6900e-003**	**6.0000e-005**	**9.7600e-003**	**2.5800e-003**	**6.0000e-005**	**2.6400e-003**	**0.0000**	**7.1040**	**7.1040**	**1.4000e-004**	**0.0000**	**7.1076**

3.3 Grading - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2038	0.0000	0.2038	0.1010	0.0000	0.1010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1915	1.8442	1.7379	4.1000e-003		0.0746	0.0746		0.0687	0.0687	0.0000	359.7406	359.7406	0.1164	0.0000	362.6493
Total	**0.1915**	**1.8442**	**1.7379**	**4.1000e-003**	**0.2038**	**0.0746**	**0.2784**	**0.1010**	**0.0687**	**0.1697**	**0.0000**	**359.7406**	**359.7406**	**0.1164**	**0.0000**	**362.6493**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5500e-003	1.9800e-003	0.0242	8.0000e-005	8.9400e-003	6.0000e-005	9.0000e-003	2.3900e-003	6.0000e-005	2.4500e-003	0.0000	7.1040	7.1040	1.4000e-004	0.0000	7.1076
Total	**3.5500e-003**	**1.9800e-003**	**0.0242**	**8.0000e-005**	**8.9400e-003**	**6.0000e-005**	**9.0000e-003**	**2.3900e-003**	**6.0000e-005**	**2.4500e-003**	**0.0000**	**7.1040**	**7.1040**	**1.4000e-004**	**0.0000**	**7.1076**

3.4 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0384	1.4686	0.3565	4.4100e-003	0.1106	1.9000e-003	0.1125	0.0320	1.8200e-003	0.0338	0.0000	424.7338	424.7338	0.0214	0.0000	425.2679
Worker	0.1780	0.0958	1.1906	4.0000e-003	0.5128	3.1700e-003	0.5159	0.1364	2.9200e-003	0.1393	0.0000	361.7867	361.7867	6.9100e-003	0.0000	361.9594
Total	**0.2164**	**1.5644**	**1.5471**	**8.4100e-003**	**0.6234**	**5.0700e-003**	**0.6284**	**0.1683**	**4.7400e-003**	**0.1731**	**0.0000**	**786.5205**	**786.5205**	**0.0283**	**0.0000**	**787.2273**

3.4 Building Construction - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0384	1.4686	0.3565	4.4100e-003	0.1036	1.9000e-003	0.1055	0.0302	1.8200e-003	0.0320	0.0000	424.7338	424.7338	0.0214	0.0000	425.2679
Worker	0.1780	0.0958	1.1906	4.0000e-003	0.4729	3.1700e-003	0.4761	0.1266	2.9200e-003	0.1295	0.0000	361.7867	361.7867	6.9100e-003	0.0000	361.9594
Total	**0.2164**	**1.5644**	**1.5471**	**8.4100e-003**	**0.5764**	**5.0700e-003**	**0.5815**	**0.1568**	**4.7400e-003**	**0.1616**	**0.0000**	**786.5205**	**786.5205**	**0.0283**	**0.0000**	**787.2273**

3.4 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0371	1.4439	0.3416	4.3800e-003	0.1106	1.8100e-003	0.1124	0.0320	1.7300e-003	0.0337	0.0000	422.5680	422.5680	0.0211	0.0000	423.0964
Worker	0.1684	0.0877	1.1107	3.8600e-003	0.5128	3.0200e-003	0.5158	0.1364	2.7800e-003	0.1392	0.0000	349.2894	349.2894	6.2900e-003	0.0000	349.4468
Total	**0.2055**	**1.5316**	**1.4523**	**8.2400e-003**	**0.6233**	**4.8300e-003**	**0.6282**	**0.1683**	**4.5100e-003**	**0.1728**	**0.0000**	**771.8574**	**771.8574**	**0.0274**	**0.0000**	**772.5432**

3.4 Building Construction - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0371	1.4439	0.3416	4.3800e-003	0.1035	1.8100e-003	0.1054	0.0302	1.7300e-003	0.0320	0.0000	422.5680	422.5680	0.0211	0.0000	423.0964
Worker	0.1684	0.0877	1.1107	3.8600e-003	0.4729	3.0200e-003	0.4759	0.1266	2.7800e-003	0.1294	0.0000	349.2894	349.2894	6.2900e-003	0.0000	349.4468
Total	**0.2055**	**1.5316**	**1.4523**	**8.2400e-003**	**0.5764**	**4.8300e-003**	**0.5813**	**0.1568**	**4.5100e-003**	**0.1613**	**0.0000**	**771.8574**	**771.8574**	**0.0274**	**0.0000**	**772.5432**

3.4 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1333	1.2158	1.5683	2.6300e-003		0.0514	0.0514		0.0484	0.0484	0.0000	226.1215	226.1215	0.0532	0.0000	227.4503
Total	**0.1333**	**1.2158**	**1.5683**	**2.6300e-003**		**0.0514**	**0.0514**		**0.0484**	**0.0484**	**0.0000**	**226.1215**	**226.1215**	**0.0532**	**0.0000**	**227.4503**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0268	1.0631	0.2459	3.2600e-003	0.0826	1.2900e-003	0.0839	0.0239	1.2300e-003	0.0251	0.0000	314.3313	314.3313	0.0156	0.0000	314.7218
Worker	0.1184	0.0601	0.7771	2.7900e-003	0.3831	2.1000e-003	0.3852	0.1019	1.9400e-003	0.1038	0.0000	252.6747	252.6747	4.3100e-003	0.0000	252.7824
Total	**0.1453**	**1.1232**	**1.0230**	**6.0500e-003**	**0.4657**	**3.3900e-003**	**0.4691**	**0.1258**	**3.1700e-003**	**0.1289**	**0.0000**	**567.0060**	**567.0060**	**0.0199**	**0.0000**	**567.5042**

3.4 Building Construction - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1333	1.2158	1.5683	2.6300e-003		0.0514	0.0514		0.0484	0.0484	0.0000	226.1212	226.1212	0.0532	0.0000	227.4501
Total	**0.1333**	**1.2158**	**1.5683**	**2.6300e-003**		**0.0514**	**0.0514**		**0.0484**	**0.0484**	**0.0000**	**226.1212**	**226.1212**	**0.0532**	**0.0000**	**227.4501**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0268	1.0631	0.2459	3.2600e-003	0.0774	1.2900e-003	0.0786	0.0226	1.2300e-003	0.0238	0.0000	314.3313	314.3313	0.0156	0.0000	314.7218
Worker	0.1184	0.0601	0.7771	2.7900e-003	0.3533	2.1000e-003	0.3554	0.0946	1.9400e-003	0.0965	0.0000	252.6747	252.6747	4.3100e-003	0.0000	252.7824
Total	**0.1453**	**1.1232**	**1.0230**	**6.0500e-003**	**0.4307**	**3.3900e-003**	**0.4340**	**0.1172**	**3.1700e-003**	**0.1203**	**0.0000**	**567.0060**	**567.0060**	**0.0199**	**0.0000**	**567.5042**

3.5 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0297	0.2789	0.4738	7.4000e-004		0.0136	0.0136		0.0125	0.0125	0.0000	65.0626	65.0626	0.0210	0.0000	65.5886
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0297**	**0.2789**	**0.4738**	**7.4000e-004**		**0.0136**	**0.0136**		**0.0125**	**0.0125**	**0.0000**	**65.0626**	**65.0626**	**0.0210**	**0.0000**	**65.5886**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3100e-003	7.3000e-004	8.9300e-003	3.0000e-005	9.7700e-003	2.0000e-005	9.7900e-003	2.4700e-003	2.0000e-005	2.4900e-003	0.0000	2.6237	2.6237	5.0000e-005	0.0000	2.6250
Total	**1.3100e-003**	**7.3000e-004**	**8.9300e-003**	**3.0000e-005**	**9.7700e-003**	**2.0000e-005**	**9.7900e-003**	**2.4700e-003**	**2.0000e-005**	**2.4900e-003**	**0.0000**	**2.6237**	**2.6237**	**5.0000e-005**	**0.0000**	**2.6250**

3.5 Paving - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0297	0.2789	0.4738	7.4000e-004		0.0136	0.0136		0.0125	0.0125	0.0000	65.0625	65.0625	0.0210	0.0000	65.5886
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0297**	**0.2789**	**0.4738**	**7.4000e-004**		**0.0136**	**0.0136**		**0.0125**	**0.0125**	**0.0000**	**65.0625**	**65.0625**	**0.0210**	**0.0000**	**65.5886**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3100e-003	7.3000e-004	8.9300e-003	3.0000e-005	8.9300e-003	2.0000e-005	8.9600e-003	2.2700e-003	2.0000e-005	2.2900e-003	0.0000	2.6237	2.6237	5.0000e-005	0.0000	2.6250
Total	**1.3100e-003**	**7.3000e-004**	**8.9300e-003**	**3.0000e-005**	**8.9300e-003**	**2.0000e-005**	**8.9600e-003**	**2.2700e-003**	**2.0000e-005**	**2.2900e-003**	**0.0000**	**2.6237**	**2.6237**	**5.0000e-005**	**0.0000**	**2.6250**

3.6 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.3710					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0168	0.1128	0.1782	2.9000e-004		5.0700e-003	5.0700e-003		5.0700e-003	5.0700e-003	0.0000	25.1496	25.1496	1.3700e-003	0.0000	25.1839
Total	**1.3879**	**0.1128**	**0.1782**	**2.9000e-004**		**5.0700e-003**	**5.0700e-003**		**5.0700e-003**	**5.0700e-003**	**0.0000**	**25.1496**	**25.1496**	**1.3700e-003**	**0.0000**	**25.1839**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0269	0.0145	0.1797	6.0000e-004	0.0774	4.8000e-004	0.0779	0.0206	4.4000e-004	0.0210	0.0000	54.6146	54.6146	1.0400e-003	0.0000	54.6406
Total	**0.0269**	**0.0145**	**0.1797**	**6.0000e-004**	**0.0774**	**4.8000e-004**	**0.0779**	**0.0206**	**4.4000e-004**	**0.0210**	**0.0000**	**54.6146**	**54.6146**	**1.0400e-003**	**0.0000**	**54.6406**

3.6 Architectural Coating - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.3710					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0168	0.1128	0.1782	2.9000e-004		5.0700e-003	5.0700e-003		5.0700e-003	5.0700e-003	0.0000	25.1495	25.1495	1.3700e-003	0.0000	25.1838
Total	**1.3879**	**0.1128**	**0.1782**	**2.9000e-004**		**5.0700e-003**	**5.0700e-003**		**5.0700e-003**	**5.0700e-003**	**0.0000**	**25.1495**	**25.1495**	**1.3700e-003**	**0.0000**	**25.1838**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0269	0.0145	0.1797	6.0000e-004	0.0714	4.8000e-004	0.0719	0.0191	4.4000e-004	0.0196	0.0000	54.6146	54.6146	1.0400e-003	0.0000	54.6406
Total	**0.0269**	**0.0145**	**0.1797**	**6.0000e-004**	**0.0714**	**4.8000e-004**	**0.0719**	**0.0191**	**4.4000e-004**	**0.0196**	**0.0000**	**54.6146**	**54.6146**	**1.0400e-003**	**0.0000**	**54.6406**

3.6 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8164					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3200	33.3200	1.8200e-003	0.0000	33.3654
Total	**1.8387**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3200**	**33.3200**	**1.8200e-003**	**0.0000**	**33.3654**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0337	0.0175	0.2221	7.7000e-004	0.1026	6.0000e-004	0.1032	0.0273	5.6000e-004	0.0278	0.0000	69.8579	69.8579	1.2600e-003	0.0000	69.8894
Total	**0.0337**	**0.0175**	**0.2221**	**7.7000e-004**	**0.1026**	**6.0000e-004**	**0.1032**	**0.0273**	**5.6000e-004**	**0.0278**	**0.0000**	**69.8579**	**69.8579**	**1.2600e-003**	**0.0000**	**69.8894**

3.6 Architectural Coating - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8164					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3199	33.3199	1.8200e-003	0.0000	33.3654
Total	**1.8387**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3199**	**33.3199**	**1.8200e-003**	**0.0000**	**33.3654**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0337	0.0175	0.2221	7.7000e-004	0.0946	6.0000e-004	0.0952	0.0253	5.6000e-004	0.0259	0.0000	69.8579	69.8579	1.2600e-003	0.0000	69.8894
Total	**0.0337**	**0.0175**	**0.2221**	**7.7000e-004**	**0.0946**	**6.0000e-004**	**0.0952**	**0.0253**	**5.6000e-004**	**0.0259**	**0.0000**	**69.8579**	**69.8579**	**1.2600e-003**	**0.0000**	**69.8894**

3.6 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8095					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0222	0.1489	0.2352	3.9000e-004		6.7000e-003	6.7000e-003		6.7000e-003	6.7000e-003	0.0000	33.1923	33.1923	1.8100e-003	0.0000	33.2376
Total	**1.8317**	**0.1489**	**0.2352**	**3.9000e-004**		**6.7000e-003**	**6.7000e-003**		**6.7000e-003**	**6.7000e-003**	**0.0000**	**33.1923**	**33.1923**	**1.8100e-003**	**0.0000**	**33.2376**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0316	0.0160	0.2072	7.4000e-004	0.1022	5.6000e-004	0.1027	0.0272	5.2000e-004	0.0277	0.0000	67.3799	67.3799	1.1500e-003	0.0000	67.4086
Total	**0.0316**	**0.0160**	**0.2072**	**7.4000e-004**	**0.1022**	**5.6000e-004**	**0.1027**	**0.0272**	**5.2000e-004**	**0.0277**	**0.0000**	**67.3799**	**67.3799**	**1.1500e-003**	**0.0000**	**67.4086**

3.6 Architectural Coating - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8095					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0222	0.1489	0.2352	3.9000e-004		6.7000e-003	6.7000e-003		6.7000e-003	6.7000e-003	0.0000	33.1923	33.1923	1.8100e-003	0.0000	33.2375
Total	**1.8317**	**0.1489**	**0.2352**	**3.9000e-004**		**6.7000e-003**	**6.7000e-003**		**6.7000e-003**	**6.7000e-003**	**0.0000**	**33.1923**	**33.1923**	**1.8100e-003**	**0.0000**	**33.2375**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0316	0.0160	0.2072	7.4000e-004	0.0942	5.6000e-004	0.0948	0.0252	5.2000e-004	0.0257	0.0000	67.3799	67.3799	1.1500e-003	0.0000	67.4086
Total	**0.0316**	**0.0160**	**0.2072**	**7.4000e-004**	**0.0942**	**5.6000e-004**	**0.0948**	**0.0252**	**5.2000e-004**	**0.0257**	**0.0000**	**67.3799**	**67.3799**	**1.1500e-003**	**0.0000**	**67.4086**

3.7 Site Preparation and Grading for Rancho Cordova Widening - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.7705	0.0000	1.7705	0.9732	0.0000	0.9732	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2423	2.4729	1.7554	3.7300e-003		0.1065	0.1065		0.0980	0.0980	0.0000	327.9765	327.9765	0.1061	0.0000	330.6283
Total	**0.2423**	**2.4729**	**1.7554**	**3.7300e-003**	**1.7705**	**0.1065**	**1.8770**	**0.9732**	**0.0980**	**1.0712**	**0.0000**	**327.9765**	**327.9765**	**0.1061**	**0.0000**	**330.6283**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2600e-003	2.2200e-003	0.0281	1.0000e-004	0.0130	8.0000e-005	0.0130	3.4500e-003	7.0000e-005	3.5200e-003	0.0000	8.8251	8.8251	1.6000e-004	0.0000	8.8291
Total	**4.2600e-003**	**2.2200e-003**	**0.0281**	**1.0000e-004**	**0.0130**	**8.0000e-005**	**0.0130**	**3.4500e-003**	**7.0000e-005**	**3.5200e-003**	**0.0000**	**8.8251**	**8.8251**	**1.6000e-004**	**0.0000**	**8.8291**

3.7 Site Preparation and Grading for Rancho Cordova Widening - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.7967	0.0000	0.7967	0.4379	0.0000	0.4379	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2423	2.4729	1.7554	3.7300e-003		0.1065	0.1065		0.0980	0.0980	0.0000	327.9761	327.9761	0.1061	0.0000	330.6279
Total	**0.2423**	**2.4729**	**1.7554**	**3.7300e-003**	**0.7967**	**0.1065**	**0.9032**	**0.4379**	**0.0980**	**0.5359**	**0.0000**	**327.9761**	**327.9761**	**0.1061**	**0.0000**	**330.6279**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2600e-003	2.2200e-003	0.0281	1.0000e-004	0.0120	8.0000e-005	0.0120	3.2000e-003	7.0000e-005	3.2700e-003	0.0000	8.8251	8.8251	1.6000e-004	0.0000	8.8291
Total	**4.2600e-003**	**2.2200e-003**	**0.0281**	**1.0000e-004**	**0.0120**	**8.0000e-005**	**0.0120**	**3.2000e-003**	**7.0000e-005**	**3.2700e-003**	**0.0000**	**8.8251**	**8.8251**	**1.6000e-004**	**0.0000**	**8.8291**

3.8 Paving for Rancho Cordova Widening - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0297	0.2789	0.4738	7.4000e-004		0.0136	0.0136		0.0125	0.0125	0.0000	65.0626	65.0626	0.0210	0.0000	65.5886
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0297**	**0.2789**	**0.4738**	**7.4000e-004**		**0.0136**	**0.0136**		**0.0125**	**0.0125**	**0.0000**	**65.0626**	**65.0626**	**0.0210**	**0.0000**	**65.5886**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1800e-003	6.1000e-004	7.7600e-003	3.0000e-005	3.5800e-003	2.0000e-005	3.6000e-003	9.5000e-004	2.0000e-005	9.7000e-004	0.0000	2.4389	2.4389	4.0000e-005	0.0000	2.4400
Total	**1.1800e-003**	**6.1000e-004**	**7.7600e-003**	**3.0000e-005**	**3.5800e-003**	**2.0000e-005**	**3.6000e-003**	**9.5000e-004**	**2.0000e-005**	**9.7000e-004**	**0.0000**	**2.4389**	**2.4389**	**4.0000e-005**	**0.0000**	**2.4400**

3.8 Paving for Rancho Cordova Widening - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0297	0.2789	0.4738	7.4000e-004		0.0136	0.0136		0.0125	0.0125	0.0000	65.0625	65.0625	0.0210	0.0000	65.5886
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0297**	**0.2789**	**0.4738**	**7.4000e-004**		**0.0136**	**0.0136**		**0.0125**	**0.0125**	**0.0000**	**65.0625**	**65.0625**	**0.0210**	**0.0000**	**65.5886**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1800e-003	6.1000e-004	7.7600e-003	3.0000e-005	3.3000e-003	2.0000e-005	3.3200e-003	8.8000e-004	2.0000e-005	9.0000e-004	0.0000	2.4389	2.4389	4.0000e-005	0.0000	2.4400
Total	**1.1800e-003**	**6.1000e-004**	**7.7600e-003**	**3.0000e-005**	**3.3000e-003**	**2.0000e-005**	**3.3200e-003**	**8.8000e-004**	**2.0000e-005**	**9.0000e-004**	**0.0000**	**2.4389**	**2.4389**	**4.0000e-005**	**0.0000**	**2.4400**

3.8 Paving for Rancho Cordova Widening - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.6100e-003	0.0901	0.1531	2.4000e-004		4.3900e-003	4.3900e-003		4.0400e-003	4.0400e-003	0.0000	21.0202	21.0202	6.8000e-003	0.0000	21.1902
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.6100e-003**	**0.0901**	**0.1531**	**2.4000e-004**		**4.3900e-003**	**4.3900e-003**		**4.0400e-003**	**4.0400e-003**	**0.0000**	**21.0202**	**21.0202**	**6.8000e-003**	**0.0000**	**21.1902**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	1.8000e-004	2.3500e-003	1.0000e-005	1.1600e-003	1.0000e-005	1.1600e-003	3.1000e-004	1.0000e-005	3.1000e-004	0.0000	0.7629	0.7629	1.0000e-005	0.0000	0.7633
Total	**3.6000e-004**	**1.8000e-004**	**2.3500e-003**	**1.0000e-005**	**1.1600e-003**	**1.0000e-005**	**1.1600e-003**	**3.1000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**0.7629**	**0.7629**	**1.0000e-005**	**0.0000**	**0.7633**

3.8 Paving for Rancho Cordova Widening - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.6100e-003	0.0901	0.1531	2.4000e-004		4.3900e-003	4.3900e-003		4.0400e-003	4.0400e-003	0.0000	21.0202	21.0202	6.8000e-003	0.0000	21.1902
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.6100e-003**	**0.0901**	**0.1531**	**2.4000e-004**		**4.3900e-003**	**4.3900e-003**		**4.0400e-003**	**4.0400e-003**	**0.0000**	**21.0202**	**21.0202**	**6.8000e-003**	**0.0000**	**21.1902**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	1.8000e-004	2.3500e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0700e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	0.7629	0.7629	1.0000e-005	0.0000	0.7633
Total	**3.6000e-004**	**1.8000e-004**	**2.3500e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0700e-003**	**2.9000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.7629**	**0.7629**	**1.0000e-005**	**0.0000**	**0.7633**

3.9 Site Prepration for Park - Lot D - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.7615	0.0000	1.7615	0.9682	0.0000	0.9682	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2411	2.4603	1.7464	3.7100e-003		0.1060	0.1060		0.0975	0.0975	0.0000	326.3031	326.3031	0.1055	0.0000	328.9414
Total	**0.2411**	**2.4603**	**1.7464**	**3.7100e-003**	**1.7615**	**0.1060**	**1.8674**	**0.9682**	**0.0975**	**1.0657**	**0.0000**	**326.3031**	**326.3031**	**0.1055**	**0.0000**	**328.9414**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9800e-003	2.0200e-003	0.0262	9.0000e-005	0.0129	7.0000e-005	0.0130	3.4300e-003	7.0000e-005	3.4900e-003	0.0000	8.5012	8.5012	1.4000e-004	0.0000	8.5048
Total	**3.9800e-003**	**2.0200e-003**	**0.0262**	**9.0000e-005**	**0.0129**	**7.0000e-005**	**0.0130**	**3.4300e-003**	**7.0000e-005**	**3.4900e-003**	**0.0000**	**8.5012**	**8.5012**	**1.4000e-004**	**0.0000**	**8.5048**

3.9 Site Prepration for Park - Lot D - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.7927	0.0000	0.7927	0.4357	0.0000	0.4357	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2411	2.4603	1.7464	3.7100e-003		0.1060	0.1060		0.0975	0.0975	0.0000	326.3027	326.3027	0.1055	0.0000	328.9411
Total	**0.2411**	**2.4603**	**1.7464**	**3.7100e-003**	**0.7927**	**0.1060**	**0.8986**	**0.4357**	**0.0975**	**0.5332**	**0.0000**	**326.3027**	**326.3027**	**0.1055**	**0.0000**	**328.9411**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9800e-003	2.0200e-003	0.0262	9.0000e-005	0.0119	7.0000e-005	0.0120	3.1800e-003	7.0000e-005	3.2500e-003	0.0000	8.5012	8.5012	1.4000e-004	0.0000	8.5048
Total	**3.9800e-003**	**2.0200e-003**	**0.0262**	**9.0000e-005**	**0.0119**	**7.0000e-005**	**0.0120**	**3.1800e-003**	**7.0000e-005**	**3.2500e-003**	**0.0000**	**8.5012**	**8.5012**	**1.4000e-004**	**0.0000**	**8.5048**

3.9 Site Prepration for Park - Lot D - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5872	0.0000	0.5872	0.3228	0.0000	0.3228	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0804	0.8201	0.5821	1.2400e-003		0.0353	0.0353		0.0325	0.0325	0.0000	108.7677	108.7677	0.0352	0.0000	109.6472
Total	**0.0804**	**0.8201**	**0.5821**	**1.2400e-003**	**0.5872**	**0.0353**	**0.6225**	**0.3228**	**0.0325**	**0.3553**	**0.0000**	**108.7677**	**108.7677**	**0.0352**	**0.0000**	**109.6472**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2400e-003	6.2000e-004	8.1500e-003	3.0000e-005	4.3000e-003	2.0000e-005	4.3200e-003	1.1400e-003	2.0000e-005	1.1600e-003	0.0000	2.7514	2.7514	4.0000e-005	0.0000	2.7525
Total	**1.2400e-003**	**6.2000e-004**	**8.1500e-003**	**3.0000e-005**	**4.3000e-003**	**2.0000e-005**	**4.3200e-003**	**1.1400e-003**	**2.0000e-005**	**1.1600e-003**	**0.0000**	**2.7514**	**2.7514**	**4.0000e-005**	**0.0000**	**2.7525**

3.9 Site Prepration for Park - Lot D - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2642	0.0000	0.2642	0.1452	0.0000	0.1452	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0804	0.8201	0.5821	1.2400e-003		0.0353	0.0353		0.0325	0.0325	0.0000	108.7676	108.7676	0.0352	0.0000	109.6470
Total	**0.0804**	**0.8201**	**0.5821**	**1.2400e-003**	**0.2642**	**0.0353**	**0.2995**	**0.1452**	**0.0325**	**0.1777**	**0.0000**	**108.7676**	**108.7676**	**0.0352**	**0.0000**	**109.6470**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2400e-003	6.2000e-004	8.1500e-003	3.0000e-005	3.9600e-003	2.0000e-005	3.9800e-003	1.0600e-003	2.0000e-005	1.0800e-003	0.0000	2.7514	2.7514	4.0000e-005	0.0000	2.7525
Total	**1.2400e-003**	**6.2000e-004**	**8.1500e-003**	**3.0000e-005**	**3.9600e-003**	**2.0000e-005**	**3.9800e-003**	**1.0600e-003**	**2.0000e-005**	**1.0800e-003**	**0.0000**	**2.7514**	**2.7514**	**4.0000e-005**	**0.0000**	**2.7525**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4990	2.5903	5.8155	0.0274	3.2166	0.0140	3.2306	0.8612	0.0130	0.8742	0.0000	2,536.2114	2,536.2114	0.0925	0.0000	2,538.5245
Unmitigated	0.4990	2.5903	5.8155	0.0274	3.2166	0.0140	3.2306	0.8612	0.0130	0.8742	0.0000	2,536.2114	2,536.2114	0.0925	0.0000	2,538.5245

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	106.40	102.24	93.76	266,875	266,875
City Park	1.93	23.28	17.13	13,200	13,200
City Park	2.99	35.95	26.45	20,380	20,380
City Park	17.20	207.03	152.33	117,380	117,380
Retirement Community	708.00	598.85	575.25	1,728,128	1,728,128
Single Family Housing	2,551.36	2,655.88	2310.16	6,496,963	6,496,963
Total	3,387.88	3,623.22	3,175.08	8,642,925	8,642,925

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	994.2215	994.2215	0.0488	0.0101	998.4540
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	994.2215	994.2215	0.0488	0.0101	998.4540
NaturalGas Mitigated	0.0574	0.4907	0.2088	3.1300e-003		0.0397	0.0397		0.0397	0.0397	0.0000	568.2599	568.2599	0.0109	0.0104	571.6368
NaturalGas Unmitigated	0.0574	0.4907	0.2088	3.1300e-003		0.0397	0.0397		0.0397	0.0397	0.0000	568.2599	568.2599	0.0109	0.0104	571.6368

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	155970	8.4000e-004	7.1900e-003	3.0600e-003	5.0000e-005		5.8000e-004	5.8000e-004		5.8000e-004	5.8000e-004	0.0000	8.3231	8.3231	1.6000e-004	1.5000e-004	8.3726
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	3.56912e+006	0.0193	0.1645	0.0700	1.0500e-003		0.0133	0.0133		0.0133	0.0133	0.0000	190.4620	190.4620	3.6500e-003	3.4900e-003	191.5938
Single Family Housing	6.9237e+006	0.0373	0.3190	0.1358	2.0400e-003		0.0258	0.0258		0.0258	0.0258	0.0000	369.4748	369.4748	7.0800e-003	6.7700e-003	371.6704
Total		**0.0574**	**0.4907**	**0.2088**	**3.1400e-003**		**0.0397**	**0.0397**		**0.0397**	**0.0397**	**0.0000**	**568.2599**	**568.2599**	**0.0109**	**0.0104**	**571.6368**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	155970	8.4000e-004	7.1900e-003	3.0600e-003	5.0000e-005		5.8000e-004	5.8000e-004		5.8000e-004	5.8000e-004	0.0000	8.3231	8.3231	1.6000e-004	1.5000e-004	8.3726
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	3.56912e+006	0.0193	0.1645	0.0700	1.0500e-003		0.0133	0.0133		0.0133	0.0133	0.0000	190.4620	190.4620	3.6500e-003	3.4900e-003	191.5938
Single Family Housing	6.9237e+006	0.0373	0.3190	0.1358	2.0400e-003		0.0258	0.0258		0.0258	0.0258	0.0000	369.4748	369.4748	7.0800e-003	6.7700e-003	371.6704
Total		**0.0574**	**0.4907**	**0.2088**	**3.1400e-003**		**0.0397**	**0.0397**		**0.0397**	**0.0397**	**0.0000**	**568.2599**	**568.2599**	**0.0109**	**0.0104**	**571.6368**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	68103.4	18.2354	9.0000e-004	1.9000e-004	18.3130
City Park	0	0.0000	0.0000	0.0000	0.0000
Retirement Community	1.38207e+006	370.0630	0.0182	3.7600e-003	371.6384
Single Family Housing	2.26293e+006	605.9232	0.0298	6.1600e-003	608.5027
Total		**994.2215**	**0.0489**	**0.0101**	**998.4540**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	68103.4	18.2354	9.0000e-004	1.9000e-004	18.3130
City Park	0	0.0000	0.0000	0.0000	0.0000
Retirement Community	1.38207e+006	370.0630	0.0182	3.7600e-003	371.6384
Single Family Housing	2.26293e+006	605.9232	0.0298	6.1600e-003	608.5027
Total		**994.2215**	**0.0489**	**0.0101**	**998.4540**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.8083	0.0687	5.9502	3.2000e-004		0.0331	0.0331		0.0331	0.0331	0.0000	9.7539	9.7539	9.2900e-003	0.0000	9.9860
Unmitigated	3.8083	0.0687	5.9502	3.2000e-004		0.0331	0.0331		0.0331	0.0331	0.0000	9.7539	9.7539	9.2900e-003	0.0000	9.9860

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4997					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.1307					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1779	0.0687	5.9502	3.2000e-004		0.0331	0.0331		0.0331	0.0331	0.0000	9.7539	9.7539	9.2900e-003	0.0000	9.9860
Total	**3.8083**	**0.0687**	**5.9502**	**3.2000e-004**		**0.0331**	**0.0331**		**0.0331**	**0.0331**	**0.0000**	**9.7539**	**9.7539**	**9.2900e-003**	**0.0000**	**9.9860**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4997					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.1307					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1779	0.0687	5.9502	3.2000e-004		0.0331	0.0331		0.0331	0.0331	0.0000	9.7539	9.7539	9.2900e-003	0.0000	9.9860
Total	**3.8083**	**0.0687**	**5.9502**	**3.2000e-004**		**0.0331**	**0.0331**		**0.0331**	**0.0331**	**0.0000**	**9.7539**	**9.7539**	**9.2900e-003**	**0.0000**	**9.9860**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	99.0287	0.0502	0.0299	109.1914
Unmitigated	99.0287	0.0502	0.0299	109.1914

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	1.04246 / 0.657206	2.3755	1.3700e-003	8.2000e-004	2.6548
City Park	0 / 13.9403	13.0643	6.4000e-004	1.3000e-004	13.1199
Retirement Community	19.2204 / 12.1172	43.7988	0.0252	0.0152	48.9483
Single Family Housing	17.4613 / 11.0082	39.7901	0.0229	0.0138	44.4683
Total		**99.0288**	**0.0501**	**0.0299**	**109.1914**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	1.04246 / 0.657206	2.3755	1.3700e-003	8.2000e-004	2.6548
City Park	0 / 13.9403	13.0643	6.4000e-004	1.3000e-004	13.1199
Retirement Community	19.2204 / 12.1172	43.7988	0.0252	0.0152	48.9483
Single Family Housing	17.4613 / 11.0082	39.7901	0.0229	0.0138	44.4683
Total		**99.0288**	**0.0501**	**0.0299**	**109.1914**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	81.5679	4.8205	0.0000	202.0809
Unmitigated	81.5679	4.8205	0.0000	202.0809

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	7.36	1.4940	0.0883	0.0000	3.7014
City Park	1.01	0.2050	0.0121	0.0000	0.5079
Retirement Community	135.7	27.5459	1.6279	0.0000	68.2437
Single Family Housing	257.76	52.3230	3.0922	0.0000	129.6279
Total		**81.5679**	**4.8205**	**0.0000**	**202.0809**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	7.36	1.4940	0.0883	0.0000	3.7014
City Park	1.01	0.2050	0.0121	0.0000	0.5079
Retirement Community	135.7	27.5459	1.6279	0.0000	68.2437
Single Family Housing	257.76	52.3230	3.0922	0.0000	129.6279
Total		**81.5679**	**4.8205**	**0.0000**	**202.0809**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	528.6770	0.0000	0.0000	528.6770

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	530.1 / 284.8	-1,057.2430	0.0000	0.0000	-1,057.2430
Total		**-1,057.2430**	**0.0000**	**0.0000**	**-1,057.2430**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	2240	1,585.9200	0.0000	0.0000	1,585.9200
Total		**1,585.9200**	**0.0000**	**0.0000**	**1,585.9200**

The Ranch - City of Rancho Cordova (Construction Only - Phase 3)

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	268.00	Dwelling Unit	28.39	482,400.00	716
Retirement Community	295.00	Dwelling Unit	36.49	295,000.00	788
Apartments Mid Rise	16.00	Dwelling Unit	0.42	16,000.00	33
City Park	1.02	Acre	1.23	44,576.40	0
City Park	1.58	Acre	1.58	68,824.80	0
City Park	9.10	Acre	9.28	396,396.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Estimated construction state date of February 2025 (provided by Applicant).

Land Use - This model run provides construction emissions only.

Construction Phase - Phase 3

Off-road Equipment -

Off-road Equipment - For building construction, assumes 1 crane, 2 forklifts, 1 generator set, 1 tractor/loader/backhoe, and 1 welder (as provided by the

applicant)
Off-road Equipment -

Off-road Equipment - D

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Assume grading truck haul length = 7 miles (Sacramento dump site).

Grading - Assume 104.38 acres graded (includes roadways). Assume 25,451 cy of material exported during this phase (total for all construction phases of 152,708 cy net export provided by applicant).

Architectural Coating -

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust - Project will not have unpaved roads during the project's operational phase. Therefore, project does not use CARB Unmitigated Unpaved Road Statewide Emission Inventory Method (per CalEEMod User Guidebook).

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 28.33% - reflects project person/du value (2.523) vs. statewide avg. (2.97) and latest statewide data (ARB). Parking Degreaser EF red. by 57.5% (corrects for walking paths modeled as 'parking lot').

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9

tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	60.00	43.00
tblConstructionPhase	NumDays	155.00	132.00
tblConstructionPhase	NumDays	110.00	65.00
tblConstructionPhase	NumDays	1,550.00	717.00
tblConstructionPhase	NumDays	110.00	718.00
tblConstructionPhase	NumDays	60.00	196.00
tblConstructionPhase	NumDays	110.00	86.00
tblConstructionPhase	NumDays	60.00	260.00
tblConstructionPhase	PhaseEndDate	4/25/2025	4/2/2025
tblConstructionPhase	PhaseEndDate	11/28/2025	10/28/2025
tblConstructionPhase	PhaseEndDate	4/9/2032	12/31/2025
tblConstructionPhase	PhaseEndDate	11/7/2031	9/29/2028
tblConstructionPhase	PhaseEndDate	9/10/2032	12/29/2028
tblConstructionPhase	PhaseStartDate	4/26/2025	4/28/2025
tblConstructionPhase	PhaseStartDate	11/8/2031	10/2/2025
tblConstructionPhase	PhaseStartDate	11/29/2025	1/1/2026
tblConstructionPhase	PhaseStartDate	4/10/2032	4/1/2026
tblGrading	AcresOfGrading	330.00	104.38
tblGrading	MaterialExported	0.00	25,451.00
tblLandUse	LandUseSquareFeet	44,576.25	44,576.40
tblLandUse	LotAcreage	87.01	28.39
tblLandUse	LotAcreage	59.00	36.49
tblLandUse	LotAcreage	1.02	1.23
tblLandUse	LotAcreage	9.10	9.28
tblLandUse	Population	43.00	33.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00

tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2025	3.9248	36.5723	41.6727	0.0872	18.7765	1.5511	19.8756	10.1090	1.4270	11.1206	0.0000	8,444.6697	8,444.6697	2.6616	0.0000	8,511.2099
2026	17.6287	25.5300	33.5186	0.1048	5.7558	0.6224	6.3782	1.5464	0.5881	2.1345	0.0000	10,520.1479	10,520.1479	0.8694	0.0000	10,541.8832
2027	20.0377	50.5329	50.8083	0.1423	23.9589	1.7079	25.6667	11.5133	1.5868	13.1001	0.0000	14,160.4026	14,160.4026	2.0558	0.0000	14,211.7962
2028	19.9204	50.3138	49.9411	0.1409	23.9588	1.7054	25.6642	11.5133	1.5844	13.0978	0.0000	14,016.8131	14,016.8131	2.0477	0.0000	14,068.0061
2029	2.5164	25.2512	18.2123	0.0391	18.2032	1.0875	19.2907	9.9670	1.0005	10.9675	0.0000	3,792.3297	3,792.3297	1.1948	0.0000	3,822.2000
Maximum	**20.0377**	**50.5329**	**50.8083**	**0.1423**	**23.9589**	**1.7079**	**25.6667**	**11.5133**	**1.5868**	**13.1001**	**0.0000**	**14,160.4026**	**14,160.4026**	**2.6616**	**0.0000**	**14,211.7962**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2025	3.9248	36.5723	41.6727	0.0872	8.7312	1.5511	9.8304	4.6267	1.4270	5.6384	0.0000	8,444.6697	8,444.6697	2.6616	0.0000	8,511.2099
2026	17.6287	25.5300	33.5186	0.1048	5.3177	0.6224	5.9401	1.4388	0.5881	2.0270	0.0000	10,520.1479	10,520.1479	0.8694	0.0000	10,541.8832
2027	20.0377	50.5329	50.8083	0.1423	13.5737	1.7079	15.2816	5.9413	1.5868	7.5281	0.0000	14,160.4026	14,160.4026	2.0558	0.0000	14,211.7962
2028	19.9204	50.3138	49.9411	0.1409	13.5737	1.7054	15.2790	5.9413	1.5844	7.5258	0.0000	14,016.8131	14,016.8131	2.0477	0.0000	14,068.0061
2029	2.5164	25.2512	18.2123	0.0391	8.2560	1.0875	9.3435	4.5025	1.0005	5.5030	0.0000	3,792.3297	3,792.3297	1.1948	0.0000	3,822.2000
Maximum	**20.0377**	**50.5329**	**50.8083**	**0.1423**	**13.5737**	**1.7079**	**15.2816**	**5.9413**	**1.5868**	**7.5281**	**0.0000**	**14,160.4026**	**14,160.4026**	**2.6616**	**0.0000**	**14,211.7962**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**45.45**	**0.00**	**42.53**	**49.72**	**0.00**	**44.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	21.3159	0.5492	47.6015	2.5200e-003		0.2649	0.2649		0.2649	0.2649	0.0000	86.0143	86.0143	0.0819	0.0000	88.0615
Energy	0.3146	2.6887	1.1441	0.0172		0.2174	0.2174		0.2174	0.2174		3,432.3252	3,432.3252	0.0658	0.0629	3,452.7218
Mobile	3.8495	15.2286	39.4850	0.1765	19.8919	0.0838	19.9756	5.3108	0.0778	5.3886		17,986.1847	17,986.1847	0.6171		18,001.6123
Total	**25.4800**	**18.4664**	**88.2306**	**0.1962**	**19.8919**	**0.5660**	**20.4579**	**5.3108**	**0.5601**	**5.8709**	**0.0000**	**21,504.5242**	**21,504.5242**	**0.7648**	**0.0629**	**21,542.3956**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	21.3159	0.5492	47.6015	2.5200e-003		0.2649	0.2649		0.2649	0.2649	0.0000	86.0143	86.0143	0.0819	0.0000	88.0615
Energy	0.3146	2.6887	1.1441	0.0172		0.2174	0.2174		0.2174	0.2174		3,432.3252	3,432.3252	0.0658	0.0629	3,452.7218
Mobile	3.8495	15.2286	39.4850	0.1765	19.8919	0.0838	19.9756	5.3108	0.0778	5.3886		17,986.1847	17,986.1847	0.6171		18,001.6123
Total	**25.4800**	**18.4664**	**88.2306**	**0.1962**	**19.8919**	**0.5660**	**20.4579**	**5.3108**	**0.5601**	**5.8709**	**0.0000**	**21,504.5242**	**21,504.5242**	**0.7648**	**0.0629**	**21,542.3956**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	2/1/2025	4/2/2025	5	43	
2	Grading	Grading	4/28/2025	10/28/2025	5	132	
3	Building Construction	Building Construction	1/1/2026	9/29/2028	5	717	
4	Paving	Paving	10/2/2025	12/31/2025	5	65	
5	Architectural Coating	Architectural Coating	4/1/2026	12/29/2028	5	718	
6	Site Preparation and Grading for Rancho Cordova Widening	Site Preparation	1/1/2027	10/1/2027	5	196	
7	Paving for Rancho Cordova Widening	Paving	10/2/2027	1/31/2028	5	86	
8	Site Prepration for Park - Lot D	Site Preparation	4/1/2028	3/30/2029	5	260	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 104.38

Acres of Paving: 0

Residential Indoor: 1,606,635; Residential Outdoor: 535,545; Non-Residential Indoor: 10,500; Non-Residential Outdoor: 3,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving for Rancho Cordova Widening	Pavers	2	8.00	130	0.42
Paving for Rancho Cordova Widening	Paving Equipment	2	8.00	132	0.36
Paving for Rancho Cordova Widening	Rollers	2	8.00	80	0.38
Site Preparation and Grading for Rancho Cordova Widening	Rubber Tired Dozers	3	8.00	247	0.40
Site Prepration for Park - Lot D	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation and Grading for Rancho Cordova Widening	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Prepration for Park - Lot D	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	3,181.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	535.00	145.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	107.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Paving for Rancho Cordova Widening	6	15.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Site Preparation and Grading for Rancho C	7	18.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Site Prepration for Park - Lot D	7	18.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.1887	0.0000	18.1887	9.9492	0.0000	9.9492			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999		3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.1887**	**1.0868**	**19.2755**	**9.9492**	**0.9999**	**10.9491**		**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1777	8.3941	1.6712	0.0236	0.4509	0.0115	0.4624	0.1234	0.0110	0.1344		2,532.8562	2,532.8562	0.1713		2,537.1381
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0558	0.0246	0.3928	1.1900e-003	0.1369	8.4000e-004	0.1378	0.0363	7.8000e-004	0.0371		118.1022	118.1022	2.4200e-003		118.1627
Total	**0.2335**	**8.4186**	**2.0640**	**0.0248**	**0.5879**	**0.0123**	**0.6002**	**0.1598**	**0.0118**	**0.1715**		**2,650.9584**	**2,650.9584**	**0.1737**		**2,655.3008**

3.2 Site Preparation - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1849	0.0000	8.1849	4.4772	0.0000	4.4772			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999	0.0000	3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**8.1849**	**1.0868**	**9.2717**	**4.4772**	**0.9999**	**5.4770**	**0.0000**	**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1777	8.3941	1.6712	0.0236	0.4201	0.0115	0.4316	0.1159	0.0110	0.1269		2,532.8562	2,532.8562	0.1713		2,537.1381
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0558	0.0246	0.3928	1.1900e-003	0.1262	8.4000e-004	0.1271	0.0337	7.8000e-004	0.0345		118.1022	118.1022	2.4200e-003		118.1627
Total	**0.2335**	**8.4186**	**2.0640**	**0.0248**	**0.5463**	**0.0123**	**0.5587**	**0.1496**	**0.0118**	**0.1614**		**2,650.9584**	**2,650.9584**	**0.1737**		**2,655.3008**

3.3 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.8607	0.0000	6.8607	3.4008	0.0000	3.4008			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404		6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**6.8607**	**1.1309**	**7.9916**	**3.4008**	**1.0404**	**4.4412**		**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0620	0.0273	0.4364	1.3200e-003	0.1521	9.4000e-004	0.1531	0.0404	8.6000e-004	0.0412		131.2246	131.2246	2.6900e-003		131.2918
Total	**0.0620**	**0.0273**	**0.4364**	**1.3200e-003**	**0.1521**	**9.4000e-004**	**0.1531**	**0.0404**	**8.6000e-004**	**0.0412**		**131.2246**	**131.2246**	**2.6900e-003**		**131.2918**

3.3 Grading - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.0873	0.0000	3.0873	1.5304	0.0000	1.5304			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404	0.0000	6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**3.0873**	**1.1309**	**4.2182**	**1.5304**	**1.0404**	**2.5708**	**0.0000**	**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0620	0.0273	0.4364	1.3200e-003	0.1402	9.4000e-004	0.1412	0.0374	8.6000e-004	0.0383		131.2246	131.2246	2.6900e-003		131.2918
Total	**0.0620**	**0.0273**	**0.4364**	**1.3200e-003**	**0.1402**	**9.4000e-004**	**0.1412**	**0.0374**	**8.6000e-004**	**0.0383**		**131.2246**	**131.2246**	**2.6900e-003**		**131.2918**

3.4 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2890	11.1146	2.5677	0.0341	0.8721	0.0141	0.8862	0.2509	0.0135	0.2644		3,626.4907	3,626.4907	0.1745		3,630.8537
Worker	1.5687	0.6668	10.8810	0.0339	4.0697	0.0243	4.0941	1.0795	0.0224	1.1019		3,379.7791	3,379.7791	0.0655		3,381.4163
Total	**1.8577**	**11.7815**	**13.4486**	**0.0680**	**4.9418**	**0.0385**	**4.9803**	**1.3305**	**0.0359**	**1.3664**		**7,006.2697**	**7,006.2697**	**0.2400**		**7,012.2700**

3.4 Building Construction - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2890	11.1146	2.5677	0.0341	0.8160	0.0141	0.8301	0.2372	0.0135	0.2507		3,626.4907	3,626.4907	0.1745		3,630.8537
Worker	1.5687	0.6668	10.8810	0.0339	3.7514	0.0243	3.7758	1.0014	0.0224	1.0238		3,379.7791	3,379.7791	0.0655		3,381.4163
Total	**1.8577**	**11.7815**	**13.4486**	**0.0680**	**4.5674**	**0.0385**	**4.6059**	**1.2386**	**0.0359**	**1.2745**		**7,006.2697**	**7,006.2697**	**0.2400**		**7,012.2700**

3.4 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2790	10.9309	2.4613	0.0339	0.8720	0.0135	0.8855	0.2509	0.0129	0.2638		3,607.8309	3,607.8309	0.1727		3,612.1476
Worker	1.4824	0.6103	10.1661	0.0327	4.0697	0.0231	4.0929	1.0795	0.0213	1.1008		3,263.1316	3,263.1316	0.0597		3,264.6240
Total	**1.7614**	**11.5412**	**12.6274**	**0.0667**	**4.9418**	**0.0366**	**4.9784**	**1.3304**	**0.0342**	**1.3646**		**6,870.9625**	**6,870.9625**	**0.2324**		**6,876.7716**

3.4 Building Construction - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2790	10.9309	2.4613	0.0339	0.8159	0.0135	0.8294	0.2371	0.0129	0.2500		3,607.8309	3,607.8309	0.1727		3,612.1476
Worker	1.4824	0.6103	10.1661	0.0327	3.7514	0.0231	3.7746	1.0014	0.0213	1.0227		3,263.1316	3,263.1316	0.0597		3,264.6240
Total	**1.7614**	**11.5412**	**12.6274**	**0.0667**	**4.5674**	**0.0366**	**4.6040**	**1.2385**	**0.0342**	**1.2727**		**6,870.9625**	**6,870.9625**	**0.2324**		**6,876.7716**

3.4 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2703	10.7737	2.3717	0.0338	0.8720	0.0129	0.8849	0.2509	0.0123	0.2632		3,591.8662	3,591.8662	0.1708		3,596.1360
Worker	1.3943	0.5602	9.5358	0.0317	4.0697	0.0216	4.0913	1.0795	0.0199	1.0994		3,159.6781	3,159.6781	0.0547		3,161.0460
Total	**1.6646**	**11.3339**	**11.9075**	**0.0655**	**4.9417**	**0.0345**	**4.9762**	**1.3304**	**0.0322**	**1.3626**		**6,751.5444**	**6,751.5444**	**0.2255**		**6,757.1820**

3.4 Building Construction - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2703	10.7737	2.3717	0.0338	0.8159	0.0129	0.8288	0.2371	0.0123	0.2494		3,591.8662	3,591.8662	0.1708		3,596.1360
Worker	1.3943	0.5602	9.5358	0.0317	3.7514	0.0216	3.7730	1.0014	0.0199	1.0213		3,159.6781	3,159.6781	0.0547		3,161.0460
Total	**1.6646**	**11.3339**	**11.9075**	**0.0655**	**4.5673**	**0.0345**	**4.6018**	**1.2385**	**0.0322**	**1.2707**		**6,751.5444**	**6,751.5444**	**0.2255**		**6,757.1820**

3.5 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9152**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0465	0.0205	0.3273	9.9000e-004	0.3124	7.0000e-004	0.3131	0.0790	6.5000e-004	0.0796		98.4185	98.4185	2.0200e-003		98.4689
Total	**0.0465**	**0.0205**	**0.3273**	**9.9000e-004**	**0.3124**	**7.0000e-004**	**0.3131**	**0.0790**	**6.5000e-004**	**0.0796**		**98.4185**	**98.4185**	**2.0200e-003**		**98.4689**

3.5 Paving - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9152**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0465	0.0205	0.3273	9.9000e-004	0.2857	7.0000e-004	0.2864	0.0724	6.5000e-004	0.0730		98.4185	98.4185	2.0200e-003		98.4689
Total	**0.0465**	**0.0205**	**0.3273**	**9.9000e-004**	**0.2857**	**7.0000e-004**	**0.2864**	**0.0724**	**6.5000e-004**	**0.0730**		**98.4185**	**98.4185**	**2.0200e-003**		**98.4689**

3.6 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.9191					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**14.0899**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3137	0.1334	2.1762	6.7800e-003	0.8140	4.8600e-003	0.8188	0.2159	4.4800e-003	0.2204		675.9558	675.9558	0.0131		676.2833
Total	**0.3137**	**0.1334**	**2.1762**	**6.7800e-003**	**0.8140**	**4.8600e-003**	**0.8188**	**0.2159**	**4.4800e-003**	**0.2204**		**675.9558**	**675.9558**	**0.0131**		**676.2833**

3.6 Architectural Coating - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.9191					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**14.0899**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3137	0.1334	2.1762	6.7800e-003	0.7503	4.8600e-003	0.7552	0.2003	4.4800e-003	0.2048		675.9558	675.9558	0.0131		676.2833
Total	**0.3137**	**0.1334**	**2.1762**	**6.7800e-003**	**0.7503**	**4.8600e-003**	**0.7552**	**0.2003**	**4.4800e-003**	**0.2048**		**675.9558**	**675.9558**	**0.0131**		**676.2833**

3.6 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.9191					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**14.0899**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2965	0.1221	2.0332	6.5500e-003	0.8140	4.6200e-003	0.8186	0.2159	4.2600e-003	0.2202		652.6263	652.6263	0.0119		652.9248
Total	**0.2965**	**0.1221**	**2.0332**	**6.5500e-003**	**0.8140**	**4.6200e-003**	**0.8186**	**0.2159**	**4.2600e-003**	**0.2202**		**652.6263**	**652.6263**	**0.0119**		**652.9248**

3.6 Architectural Coating - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.9191					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**14.0899**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2965	0.1221	2.0332	6.5500e-003	0.7503	4.6200e-003	0.7549	0.2003	4.2600e-003	0.2045		652.6263	652.6263	0.0119		652.9248
Total	**0.2965**	**0.1221**	**2.0332**	**6.5500e-003**	**0.7503**	**4.6200e-003**	**0.7549**	**0.2003**	**4.2600e-003**	**0.2045**		**652.6263**	**652.6263**	**0.0119**		**652.9248**

3.6 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.9191					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**14.0899**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2789	0.1120	1.9072	6.3400e-003	0.8140	4.3200e-003	0.8183	0.2159	3.9700e-003	0.2199		631.9356	631.9356	0.0109		632.2092
Total	**0.2789**	**0.1120**	**1.9072**	**6.3400e-003**	**0.8140**	**4.3200e-003**	**0.8183**	**0.2159**	**3.9700e-003**	**0.2199**		**631.9356**	**631.9356**	**0.0109**		**632.2092**

3.6 Architectural Coating - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.9191					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**14.0899**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2789	0.1120	1.9072	6.3400e-003	0.7503	4.3200e-003	0.7546	0.2003	3.9700e-003	0.2043		631.9356	631.9356	0.0109		632.2092
Total	**0.2789**	**0.1120**	**1.9072**	**6.3400e-003**	**0.7503**	**4.3200e-003**	**0.7546**	**0.2003**	**3.9700e-003**	**0.2043**		**631.9356**	**631.9356**	**0.0109**		**632.2092**

3.7 Site Preparation and Grading for Rancho Cordova Widening - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999		3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.0663**	**1.0868**	**19.1531**	**9.9307**	**0.9999**	**10.9305**		**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0499	0.0205	0.3420	1.1000e-003	0.1369	7.8000e-004	0.1377	0.0363	7.2000e-004	0.0370		109.7876	109.7876	2.0100e-003		109.8378
Total	**0.0499**	**0.0205**	**0.3420**	**1.1000e-003**	**0.1369**	**7.8000e-004**	**0.1377**	**0.0363**	**7.2000e-004**	**0.0370**		**109.7876**	**109.7876**	**2.0100e-003**		**109.8378**

3.7 Site Preparation and Grading for Rancho Cordova Widening - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999	0.0000	3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**8.1298**	**1.0868**	**9.2166**	**4.4688**	**0.9999**	**5.4687**	**0.0000**	**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0499	0.0205	0.3420	1.1000e-003	0.1262	7.8000e-004	0.1270	0.0337	7.2000e-004	0.0344		109.7876	109.7876	2.0100e-003		109.8378
Total	**0.0499**	**0.0205**	**0.3420**	**1.1000e-003**	**0.1262**	**7.8000e-004**	**0.1270**	**0.0337**	**7.2000e-004**	**0.0344**		**109.7876**	**109.7876**	**2.0100e-003**		**109.8378**

3.8 Paving for Rancho Cordova Widening - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9152**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0416	0.0171	0.2850	9.2000e-004	0.1141	6.5000e-004	0.1148	0.0303	6.0000e-004	0.0309		91.4897	91.4897	1.6700e-003		91.5315
Total	**0.0416**	**0.0171**	**0.2850**	**9.2000e-004**	**0.1141**	**6.5000e-004**	**0.1148**	**0.0303**	**6.0000e-004**	**0.0309**		**91.4897**	**91.4897**	**1.6700e-003**		**91.5315**

3.8 Paving for Rancho Cordova Widening - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9152**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0416	0.0171	0.2850	9.2000e-004	0.1052	6.5000e-004	0.1058	0.0281	6.0000e-004	0.0287		91.4897	91.4897	1.6700e-003		91.5315
Total	**0.0416**	**0.0171**	**0.2850**	**9.2000e-004**	**0.1052**	**6.5000e-004**	**0.1058**	**0.0281**	**6.0000e-004**	**0.0287**		**91.4897**	**91.4897**	**1.6700e-003**		**91.5315**

3.8 Paving for Rancho Cordova Widening - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9152**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0391	0.0157	0.2674	8.9000e-004	0.1141	6.1000e-004	0.1147	0.0303	5.6000e-004	0.0308		88.5891	88.5891	1.5300e-003		88.6275
Total	**0.0391**	**0.0157**	**0.2674**	**8.9000e-004**	**0.1141**	**6.1000e-004**	**0.1147**	**0.0303**	**5.6000e-004**	**0.0308**		**88.5891**	**88.5891**	**1.5300e-003**		**88.6275**

3.8 Paving for Rancho Cordova Widening - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9152**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0391	0.0157	0.2674	8.9000e-004	0.1052	6.1000e-004	0.1058	0.0281	5.6000e-004	0.0286		88.5891	88.5891	1.5300e-003		88.6275
Total	**0.0391**	**0.0157**	**0.2674**	**8.9000e-004**	**0.1052**	**6.1000e-004**	**0.1058**	**0.0281**	**5.6000e-004**	**0.0286**		**88.5891**	**88.5891**	**1.5300e-003**		**88.6275**

3.9 Site Prepration for Park - Lot D - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999		3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.0663**	**1.0868**	**19.1531**	**9.9307**	**0.9999**	**10.9305**		**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0469	0.0189	0.3208	1.0700e-003	0.1369	7.3000e-004	0.1377	0.0363	6.7000e-004	0.0370		106.3069	106.3069	1.8400e-003		106.3530
Total	**0.0469**	**0.0189**	**0.3208**	**1.0700e-003**	**0.1369**	**7.3000e-004**	**0.1377**	**0.0363**	**6.7000e-004**	**0.0370**		**106.3069**	**106.3069**	**1.8400e-003**		**106.3530**

3.9 Site Prepration for Park - Lot D - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999	0.0000	3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**8.1298**	**1.0868**	**9.2166**	**4.4688**	**0.9999**	**5.4687**	**0.0000**	**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0469	0.0189	0.3208	1.0700e-003	0.1262	7.3000e-004	0.1269	0.0337	6.7000e-004	0.0344		106.3069	106.3069	1.8400e-003		106.3530
Total	**0.0469**	**0.0189**	**0.3208**	**1.0700e-003**	**0.1262**	**7.3000e-004**	**0.1269**	**0.0337**	**6.7000e-004**	**0.0344**		**106.3069**	**106.3069**	**1.8400e-003**		**106.3530**

3.9 Site Prepration for Park - Lot D - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999		3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.0663**	**1.0868**	**19.1531**	**9.9307**	**0.9999**	**10.9305**		**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0437	0.0173	0.3005	1.0400e-003	0.1369	6.8000e-004	0.1376	0.0363	6.2000e-004	0.0369		103.2260	103.2260	1.6800e-003		103.2680
Total	**0.0437**	**0.0173**	**0.3005**	**1.0400e-003**	**0.1369**	**6.8000e-004**	**0.1376**	**0.0363**	**6.2000e-004**	**0.0369**		**103.2260**	**103.2260**	**1.6800e-003**		**103.2680**

3.9 Site Prepration for Park - Lot D - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999	0.0000	3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**8.1298**	**1.0868**	**9.2166**	**4.4688**	**0.9999**	**5.4687**	**0.0000**	**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0437	0.0173	0.3005	1.0400e-003	0.1262	6.8000e-004	0.1269	0.0337	6.2000e-004	0.0343		103.2260	103.2260	1.6800e-003		103.2680
Total	**0.0437**	**0.0173**	**0.3005**	**1.0400e-003**	**0.1262**	**6.8000e-004**	**0.1269**	**0.0337**	**6.2000e-004**	**0.0343**		**103.2260**	**103.2260**	**1.6800e-003**		**103.2680**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.8495	15.2286	39.4850	0.1765	19.8919	0.0838	19.9756	5.3108	0.0778	5.3886		17,986.1847	17,986.1847	0.6171		18,001.6123
Unmitigated	3.8495	15.2286	39.4850	0.1765	19.8919	0.0838	19.9756	5.3108	0.0778	5.3886		17,986.1847	17,986.1847	0.6171		18,001.6123

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	106.40	102.24	93.76	266,875	266,875
City Park	1.93	23.28	17.13	13,200	13,200
City Park	2.99	35.95	26.45	20,380	20,380
City Park	17.20	207.03	152.33	117,380	117,380
Retirement Community	708.00	598.85	575.25	1,728,128	1,728,128
Single Family Housing	2,551.36	2,655.88	2310.16	6,496,963	6,496,963
Total	3,387.88	3,623.22	3,175.08	8,642,925	8,642,925

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.3146	2.6887	1.1441	0.0172		0.2174	0.2174		0.2174	0.2174		3,432.3252	3,432.3252	0.0658	0.0629	3,452.7218
NaturalGas Unmitigated	0.3146	2.6887	1.1441	0.0172		0.2174	0.2174		0.2174	0.2174		3,432.3252	3,432.3252	0.0658	0.0629	3,452.7218

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	427.314	4.6100e-003	0.0394	0.0168	2.5000e-004		3.1800e-003	3.1800e-003		3.1800e-003	3.1800e-003		50.2722	50.2722	9.6000e-004	9.2000e-004	50.5710
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	9778.42	0.1055	0.9012	0.3835	5.7500e-003		0.0729	0.0729		0.0729	0.0729		1,150.4021	1,150.4021	0.0221	0.0211	1,157.2383
Single Family Housing	18969	0.2046	1.7481	0.7439	0.0112		0.1413	0.1413		0.1413	0.1413		2,231.6509	2,231.6509	0.0428	0.0409	2,244.9125
Total		**0.3146**	**2.6887**	**1.1441**	**0.0172**		**0.2174**	**0.2174**		**0.2174**	**0.2174**		**3,432.3252**	**3,432.3252**	**0.0658**	**0.0629**	**3,452.7218**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	0.427314	4.6100e-003	0.0394	0.0168	2.5000e-004		3.1800e-003	3.1800e-003		3.1800e-003	3.1800e-003		50.2722	50.2722	9.6000e-004	9.2000e-004	50.5710
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	9.77842	0.1055	0.9012	0.3835	5.7500e-003		0.0729	0.0729		0.0729	0.0729		1,150.4021	1,150.4021	0.0221	0.0211	1,157.2383
Single Family Housing	18.969	0.2046	1.7481	0.7439	0.0112		0.1413	0.1413		0.1413	0.1413		2,231.6509	2,231.6509	0.0428	0.0409	2,244.9125
Total		**0.3146**	**2.6887**	**1.1441**	**0.0172**		**0.2174**	**0.2174**		**0.2174**	**0.2174**		**3,432.3252**	**3,432.3252**	**0.0658**	**0.0629**	**3,452.7218**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	21.3159	0.5492	47.6015	2.5200e-003		0.2649	0.2649		0.2649	0.2649	0.0000	86.0143	86.0143	0.0819	0.0000	88.0615
Unmitigated	21.3159	0.5492	47.6015	2.5200e-003		0.2649	0.2649		0.2649	0.2649	0.0000	86.0143	86.0143	0.0819	0.0000	88.0615

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.7381					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	17.1545					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.4233	0.5492	47.6015	2.5200e-003		0.2649	0.2649		0.2649	0.2649		86.0143	86.0143	0.0819		88.0615
Total	**21.3159**	**0.5492**	**47.6015**	**2.5200e-003**		**0.2649**	**0.2649**		**0.2649**	**0.2649**	**0.0000**	**86.0143**	**86.0143**	**0.0819**	**0.0000**	**88.0615**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.7381					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	17.1545					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.4233	0.5492	47.6015	2.5200e-003		0.2649	0.2649		0.2649	0.2649		86.0143	86.0143	0.0819		88.0615
Total	**21.3159**	**0.5492**	**47.6015**	**2.5200e-003**		**0.2649**	**0.2649**		**0.2649**	**0.2649**	**0.0000**	**86.0143**	**86.0143**	**0.0819**	**0.0000**	**88.0615**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

The Ranch - City of Rancho Cordova (Construction Only - Phase 3)

Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	268.00	Dwelling Unit	28.39	482,400.00	716
Retirement Community	295.00	Dwelling Unit	36.49	295,000.00	788
Apartments Mid Rise	16.00	Dwelling Unit	0.42	16,000.00	33
City Park	1.02	Acre	1.23	44,576.40	0
City Park	1.58	Acre	1.58	68,824.80	0
City Park	9.10	Acre	9.28	396,396.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Estimated construction state date of February 2025 (provided by Applicant).

Land Use - This model run provides construction emissions only.

Construction Phase - Phase 3

Off-road Equipment -

Off-road Equipment - For building construction, assumes 1 crane, 2 forklifts, 1 generator set, 1 tractor/loader/backhoe, and 1 welder (as provided by the

applicant)
Off-road Equipment -

Off-road Equipment - D

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Assume grading truck haul length = 7 miles (Sacramento dump site).

Grading - Assume 104.38 acres graded (includes roadways). Assume 25,451 cy of material exported during this phase (total for all construction phases of 152,708 cy net export provided by applicant).

Architectural Coating -

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust - Project will not have unpaved roads during the project's operational phase. Therefore, project does not use CARB Unmitigated Unpaved Road Statewide Emission Inventory Method (per CalEEMod User Guidebook).

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 28.33% - reflects project person/du value (2.523) vs. statewide avg. (2.97) and latest statewide data (ARB). Parking Degreaser EF red. by 57.5% (corrects for walking paths modeled as 'parking lot').

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9

tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	60.00	43.00
tblConstructionPhase	NumDays	155.00	132.00
tblConstructionPhase	NumDays	110.00	65.00
tblConstructionPhase	NumDays	1,550.00	717.00
tblConstructionPhase	NumDays	110.00	718.00
tblConstructionPhase	NumDays	60.00	196.00
tblConstructionPhase	NumDays	110.00	86.00
tblConstructionPhase	NumDays	60.00	260.00
tblConstructionPhase	PhaseEndDate	4/25/2025	4/2/2025
tblConstructionPhase	PhaseEndDate	11/28/2025	10/28/2025
tblConstructionPhase	PhaseEndDate	4/9/2032	12/31/2025
tblConstructionPhase	PhaseEndDate	11/7/2031	9/29/2028
tblConstructionPhase	PhaseEndDate	9/10/2032	12/29/2028
tblConstructionPhase	PhaseStartDate	4/26/2025	4/28/2025
tblConstructionPhase	PhaseStartDate	11/8/2031	10/2/2025
tblConstructionPhase	PhaseStartDate	11/29/2025	1/1/2026
tblConstructionPhase	PhaseStartDate	4/10/2032	4/1/2026
tblGrading	AcresOfGrading	330.00	104.38
tblGrading	MaterialExported	0.00	25,451.00
tblLandUse	LandUseSquareFeet	44,576.25	44,576.40
tblLandUse	LotAcreage	87.01	28.39
tblLandUse	LotAcreage	59.00	36.49
tblLandUse	LotAcreage	1.02	1.23
tblLandUse	LotAcreage	9.10	9.28
tblLandUse	Population	43.00	33.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00

tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2025	3.9172	36.5834	41.5509	0.0869	18.7765	1.5511	19.8768	10.1090	1.4270	11.1217	0.0000	8,416.7643	8,416.7643	2.6610	0.0000	8,483.2896
2026	17.5197	25.8170	31.7945	0.0989	5.7558	0.6234	6.3792	1.5464	0.5891	2.1355	0.0000	9,934.9730	9,934.9730	0.8732	0.0000	9,956.8037
2027	19.9367	50.8038	49.1196	0.1366	23.9589	1.7088	25.6676	11.5133	1.5876	13.1010	0.0000	13,579.6212	13,579.6212	2.0599	0.0000	13,631.1192
2028	19.8282	50.5673	48.3376	0.1353	23.9588	1.7062	25.6650	11.5133	1.5852	13.0985	0.0000	13,452.1262	13,452.1262	2.0524	0.0000	13,503.4366
2029	2.5137	25.2551	18.1615	0.0390	18.2032	1.0875	19.2907	9.9670	1.0005	10.9675	0.0000	3,779.7663	3,779.7663	1.1946	0.0000	3,809.6310
Maximum	**19.9367**	**50.8038**	**49.1196**	**0.1366**	**23.9589**	**1.7088**	**25.6676**	**11.5133**	**1.5876**	**13.1010**	**0.0000**	**13,579.6212**	**13,579.6212**	**2.6610**	**0.0000**	**13,631.1192**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2025	3.9172	36.5834	41.5509	0.0869	8.7312	1.5511	9.8315	4.6267	1.4270	5.6395	0.0000	8,416.7643	8,416.7643	2.6610	0.0000	8,483.2895
2026	17.5197	25.8170	31.7945	0.0989	5.3177	0.6234	5.9411	1.4388	0.5891	2.0280	0.0000	9,934.9730	9,934.9730	0.8732	0.0000	9,956.8037
2027	19.9367	50.8038	49.1196	0.1366	13.5737	1.7088	15.2825	5.9413	1.5876	7.5289	0.0000	13,579.6212	13,579.6212	2.0599	0.0000	13,631.1192
2028	19.8282	50.5673	48.3376	0.1353	13.5737	1.7062	15.2798	5.9413	1.5852	7.5265	0.0000	13,452.1262	13,452.1262	2.0524	0.0000	13,503.4366
2029	2.5137	25.2551	18.1615	0.0390	8.2560	1.0875	9.3435	4.5025	1.0005	5.5030	0.0000	3,779.7663	3,779.7663	1.1946	0.0000	3,809.6310
Maximum	**19.9367**	**50.8038**	**49.1196**	**0.1366**	**13.5737**	**1.7088**	**15.2825**	**5.9413**	**1.5876**	**7.5289**	**0.0000**	**13,579.6212**	**13,579.6212**	**2.6610**	**0.0000**	**13,631.1192**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**45.45**	**0.00**	**42.53**	**49.72**	**0.00**	**44.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	21.3159	0.5492	47.6015	2.5200e-003		0.2649	0.2649		0.2649	0.2649	0.0000	86.0143	86.0143	0.0819	0.0000	88.0615
Energy	0.3146	2.6887	1.1441	0.0172		0.2174	0.2174		0.2174	0.2174		3,432.3252	3,432.3252	0.0658	0.0629	3,452.7218
Mobile	2.7932	15.8365	35.7184	0.1601	19.8919	0.0841	19.9760	5.3108	0.0782	5.3890		16,345.5907	16,345.5907	0.6262		16,361.2461
Total	**24.4237**	**19.0744**	**84.4641**	**0.1798**	**19.8919**	**0.5664**	**20.4583**	**5.3108**	**0.5605**	**5.8713**	**0.0000**	**19,863.9302**	**19,863.9302**	**0.7739**	**0.0629**	**19,902.0293**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	21.3159	0.5492	47.6015	2.5200e-003		0.2649	0.2649		0.2649	0.2649	0.0000	86.0143	86.0143	0.0819	0.0000	88.0615
Energy	0.3146	2.6887	1.1441	0.0172		0.2174	0.2174		0.2174	0.2174		3,432.3252	3,432.3252	0.0658	0.0629	3,452.7218
Mobile	2.7932	15.8365	35.7184	0.1601	19.8919	0.0841	19.9760	5.3108	0.0782	5.3890		16,345.5907	16,345.5907	0.6262		16,361.2461
Total	**24.4237**	**19.0744**	**84.4641**	**0.1798**	**19.8919**	**0.5664**	**20.4583**	**5.3108**	**0.5605**	**5.8713**	**0.0000**	**19,863.9302**	**19,863.9302**	**0.7739**	**0.0629**	**19,902.0293**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	2/1/2025	4/2/2025	5	43	
2	Grading	Grading	4/28/2025	10/28/2025	5	132	
3	Building Construction	Building Construction	1/1/2026	9/29/2028	5	717	
4	Paving	Paving	10/2/2025	12/31/2025	5	65	
5	Architectural Coating	Architectural Coating	4/1/2026	12/29/2028	5	718	
6	Site Preparation and Grading for Rancho Cordova Widening	Site Preparation	1/1/2027	10/1/2027	5	196	
7	Paving for Rancho Cordova Widening	Paving	10/2/2027	1/31/2028	5	86	
8	Site Prepration for Park - Lot D	Site Preparation	4/1/2028	3/30/2029	5	260	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 104.38

Acres of Paving: 0

Residential Indoor: 1,606,635; Residential Outdoor: 535,545; Non-Residential Indoor: 10,500; Non-Residential Outdoor: 3,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving for Rancho Cordova Widening	Pavers	2	8.00	130	0.42
Paving for Rancho Cordova Widening	Paving Equipment	2	8.00	132	0.36
Paving for Rancho Cordova Widening	Rollers	2	8.00	80	0.38
Site Preparation and Grading for Rancho Cordova Widening	Rubber Tired Dozers	3	8.00	247	0.40
Site Prepration for Park - Lot D	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation and Grading for Rancho Cordova Widening	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Prepration for Park - Lot D	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	3,181.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	535.00	145.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	107.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Paving for Rancho Cordova Widening	6	15.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Site Preparation and Grading for Rancho C	7	18.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Site Prepration for Park - Lot D	7	18.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.1887	0.0000	18.1887	9.9492	0.0000	9.9492			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999		3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.1887**	**1.0868**	**19.2755**	**9.9492**	**0.9999**	**10.9491**		**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1889	8.3845	1.9175	0.0227	0.4509	0.0126	0.4636	0.1234	0.0121	0.1355		2,441.1346	2,441.1346	0.1845		2,445.7464
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0518	0.0303	0.3301	1.0400e-003	0.1369	8.4000e-004	0.1378	0.0363	7.8000e-004	0.0371		103.7508	103.7508	2.1100e-003		103.8036
Total	**0.2407**	**8.4147**	**2.2476**	**0.0238**	**0.5879**	**0.0135**	**0.6013**	**0.1598**	**0.0129**	**0.1726**		**2,544.8854**	**2,544.8854**	**0.1866**		**2,549.5500**

3.2 Site Preparation - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1849	0.0000	8.1849	4.4772	0.0000	4.4772			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999	0.0000	3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**8.1849**	**1.0868**	**9.2717**	**4.4772**	**0.9999**	**5.4770**	**0.0000**	**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1889	8.3845	1.9175	0.0227	0.4201	0.0126	0.4328	0.1159	0.0121	0.1280		2,441.1346	2,441.1346	0.1845		2,445.7464
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0518	0.0303	0.3301	1.0400e-003	0.1262	8.4000e-004	0.1271	0.0337	7.8000e-004	0.0345		103.7508	103.7508	2.1100e-003		103.8036
Total	**0.2407**	**8.4147**	**2.2476**	**0.0238**	**0.5463**	**0.0135**	**0.5598**	**0.1496**	**0.0129**	**0.1625**		**2,544.8854**	**2,544.8854**	**0.1866**		**2,549.5500**

3.3 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.8607	0.0000	6.8607	3.4008	0.0000	3.4008			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404		6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**6.8607**	**1.1309**	**7.9916**	**3.4008**	**1.0404**	**4.4412**		**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0576	0.0336	0.3667	1.1600e-003	0.1521	9.4000e-004	0.1531	0.0404	8.6000e-004	0.0412		115.2787	115.2787	2.3400e-003		115.3373
Total	**0.0576**	**0.0336**	**0.3667**	**1.1600e-003**	**0.1521**	**9.4000e-004**	**0.1531**	**0.0404**	**8.6000e-004**	**0.0412**		**115.2787**	**115.2787**	**2.3400e-003**		**115.3373**

3.3 Grading - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.0873	0.0000	3.0873	1.5304	0.0000	1.5304			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404	0.0000	6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**3.0873**	**1.1309**	**4.2182**	**1.5304**	**1.0404**	**2.5708**	**0.0000**	**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0576	0.0336	0.3667	1.1600e-003	0.1402	9.4000e-004	0.1412	0.0374	8.6000e-004	0.0383		115.2787	115.2787	2.3400e-003		115.3373
Total	**0.0576**	**0.0336**	**0.3667**	**1.1600e-003**	**0.1402**	**9.4000e-004**	**0.1412**	**0.0374**	**8.6000e-004**	**0.0383**		**115.2787**	**115.2787**	**2.3400e-003**		**115.3373**

3.4 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3065	11.2157	2.9571	0.0333	0.8721	0.0151	0.8872	0.2509	0.0145	0.2654		3,534.0715	3,534.0715	0.1885		3,538.7841
Worker	1.4633	0.8218	9.1197	0.0298	4.0697	0.0243	4.0941	1.0795	0.0224	1.1019		2,969.1493	2,969.1493	0.0570		2,970.5747
Total	**1.7697**	**12.0374**	**12.0768**	**0.0631**	**4.9418**	**0.0395**	**4.9813**	**1.3305**	**0.0369**	**1.3673**		**6,503.2208**	**6,503.2208**	**0.2455**		**6,509.3588**

3.4 Building Construction - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3065	11.2157	2.9571	0.0333	0.8160	0.0151	0.8311	0.2372	0.0145	0.2516		3,534.0715	3,534.0715	0.1885		3,538.7841
Worker	1.4633	0.8218	9.1197	0.0298	3.7514	0.0243	3.7758	1.0014	0.0224	1.0238		2,969.1493	2,969.1493	0.0570		2,970.5747
Total	**1.7697**	**12.0374**	**12.0768**	**0.0631**	**4.5674**	**0.0395**	**4.6069**	**1.2386**	**0.0369**	**1.2754**		**6,503.2208**	**6,503.2208**	**0.2455**		**6,509.3588**

3.4 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2958	11.0272	2.8324	0.0331	0.8720	0.0144	0.8864	0.2509	0.0137	0.2646		3,516.2804	3,516.2804	0.1865		3,520.9426
Worker	1.3868	0.7519	8.4965	0.0288	4.0697	0.0231	4.0929	1.0795	0.0213	1.1008		2,866.5581	2,866.5581	0.0519		2,867.8551
Total	**1.6826**	**11.7791**	**11.3289**	**0.0618**	**4.9418**	**0.0375**	**4.9792**	**1.3304**	**0.0350**	**1.3655**		**6,382.8385**	**6,382.8385**	**0.2384**		**6,388.7977**

3.4 Building Construction - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2958	11.0272	2.8324	0.0331	0.8159	0.0144	0.8303	0.2371	0.0137	0.2509		3,516.2804	3,516.2804	0.1865		3,520.9426
Worker	1.3868	0.7519	8.4965	0.0288	3.7514	0.0231	3.7746	1.0014	0.0213	1.0227		2,866.5581	2,866.5581	0.0519		2,867.8551
Total	**1.6826**	**11.7791**	**11.3289**	**0.0618**	**4.5674**	**0.0375**	**4.6049**	**1.2385**	**0.0350**	**1.2736**		**6,382.8385**	**6,382.8385**	**0.2384**		**6,388.7977**

3.4 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2863	10.8672	2.7268	0.0329	0.8720	0.0137	0.8857	0.2509	0.0131	0.2640		3,501.1671	3,501.1671	0.1844		3,505.7778
Worker	1.3066	0.6898	7.9482	0.0278	4.0697	0.0216	4.0913	1.0795	0.0199	1.0994		2,775.4609	2,775.4609	0.0475		2,776.6475
Total	**1.5929**	**11.5571**	**10.6750**	**0.0608**	**4.9417**	**0.0353**	**4.9770**	**1.3304**	**0.0330**	**1.3634**		**6,276.6279**	**6,276.6279**	**0.2319**		**6,282.4253**

3.4 Building Construction - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2863	10.8672	2.7268	0.0329	0.8159	0.0137	0.8296	0.2371	0.0131	0.2502		3,501.1671	3,501.1671	0.1844		3,505.7778
Worker	1.3066	0.6898	7.9482	0.0278	3.7514	0.0216	3.7730	1.0014	0.0199	1.0213		2,775.4609	2,775.4609	0.0475		2,776.6475
Total	**1.5929**	**11.5571**	**10.6750**	**0.0608**	**4.5673**	**0.0353**	**4.6026**	**1.2385**	**0.0330**	**1.2715**		**6,276.6279**	**6,276.6279**	**0.2319**		**6,282.4253**

3.5 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9152**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0432	0.0252	0.2751	8.7000e-004	0.3124	7.0000e-004	0.3131	0.0790	6.5000e-004	0.0796		86.4590	86.4590	1.7600e-003		86.5030
Total	**0.0432**	**0.0252**	**0.2751**	**8.7000e-004**	**0.3124**	**7.0000e-004**	**0.3131**	**0.0790**	**6.5000e-004**	**0.0796**		**86.4590**	**86.4590**	**1.7600e-003**		**86.5030**

3.5 Paving - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9152**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0432	0.0252	0.2751	8.7000e-004	0.2857	7.0000e-004	0.2864	0.0724	6.5000e-004	0.0730		86.4590	86.4590	1.7600e-003		86.5030
Total	**0.0432**	**0.0252**	**0.2751**	**8.7000e-004**	**0.2857**	**7.0000e-004**	**0.2864**	**0.0724**	**6.5000e-004**	**0.0730**		**86.4590**	**86.4590**	**1.7600e-003**		**86.5030**

3.6 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.9191					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**14.0899**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2927	0.1644	1.8240	5.9600e-003	0.8140	4.8600e-003	0.8188	0.2159	4.4800e-003	0.2204		593.8299	593.8299	0.0114		594.1149
Total	**0.2927**	**0.1644**	**1.8240**	**5.9600e-003**	**0.8140**	**4.8600e-003**	**0.8188**	**0.2159**	**4.4800e-003**	**0.2204**		**593.8299**	**593.8299**	**0.0114**		**594.1149**

3.6 Architectural Coating - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.9191					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**14.0899**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2927	0.1644	1.8240	5.9600e-003	0.7503	4.8600e-003	0.7552	0.2003	4.4800e-003	0.2048		593.8299	593.8299	0.0114		594.1149
Total	**0.2927**	**0.1644**	**1.8240**	**5.9600e-003**	**0.7503**	**4.8600e-003**	**0.7552**	**0.2003**	**4.4800e-003**	**0.2048**		**593.8299**	**593.8299**	**0.0114**		**594.1149**

3.6 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.9191					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**14.0899**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2774	0.1504	1.6993	5.7500e-003	0.8140	4.6200e-003	0.8186	0.2159	4.2600e-003	0.2202		573.3116	573.3116	0.0104		573.5710
Total	**0.2774**	**0.1504**	**1.6993**	**5.7500e-003**	**0.8140**	**4.6200e-003**	**0.8186**	**0.2159**	**4.2600e-003**	**0.2202**		**573.3116**	**573.3116**	**0.0104**		**573.5710**

3.6 Architectural Coating - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.9191					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**14.0899**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2774	0.1504	1.6993	5.7500e-003	0.7503	4.6200e-003	0.7549	0.2003	4.2600e-003	0.2045		573.3116	573.3116	0.0104		573.5710
Total	**0.2774**	**0.1504**	**1.6993**	**5.7500e-003**	**0.7503**	**4.6200e-003**	**0.7549**	**0.2003**	**4.2600e-003**	**0.2045**		**573.3116**	**573.3116**	**0.0104**		**573.5710**

3.6 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.9191					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**14.0899**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2613	0.1380	1.5896	5.5700e-003	0.8140	4.3200e-003	0.8183	0.2159	3.9700e-003	0.2199		555.0922	555.0922	9.4900e-003		555.3295
Total	**0.2613**	**0.1380**	**1.5896**	**5.5700e-003**	**0.8140**	**4.3200e-003**	**0.8183**	**0.2159**	**3.9700e-003**	**0.2199**		**555.0922**	**555.0922**	**9.4900e-003**		**555.3295**

3.6 Architectural Coating - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.9191					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**14.0899**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2613	0.1380	1.5896	5.5700e-003	0.7503	4.3200e-003	0.7546	0.2003	3.9700e-003	0.2043		555.0922	555.0922	9.4900e-003		555.3295
Total	**0.2613**	**0.1380**	**1.5896**	**5.5700e-003**	**0.7503**	**4.3200e-003**	**0.7546**	**0.2003**	**3.9700e-003**	**0.2043**		**555.0922**	**555.0922**	**9.4900e-003**		**555.3295**

3.7 Site Preparation and Grading for Rancho Cordova Widening - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999		3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.0663**	**1.0868**	**19.1531**	**9.9307**	**0.9999**	**10.9305**		**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0467	0.0253	0.2859	9.7000e-004	0.1369	7.8000e-004	0.1377	0.0363	7.2000e-004	0.0370		96.4449	96.4449	1.7500e-003		96.4886
Total	**0.0467**	**0.0253**	**0.2859**	**9.7000e-004**	**0.1369**	**7.8000e-004**	**0.1377**	**0.0363**	**7.2000e-004**	**0.0370**		**96.4449**	**96.4449**	**1.7500e-003**		**96.4886**

3.7 Site Preparation and Grading for Rancho Cordova Widening - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999	0.0000	3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**8.1298**	**1.0868**	**9.2166**	**4.4688**	**0.9999**	**5.4687**	**0.0000**	**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0467	0.0253	0.2859	9.7000e-004	0.1262	7.8000e-004	0.1270	0.0337	7.2000e-004	0.0344		96.4449	96.4449	1.7500e-003		96.4886
Total	**0.0467**	**0.0253**	**0.2859**	**9.7000e-004**	**0.1262**	**7.8000e-004**	**0.1270**	**0.0337**	**7.2000e-004**	**0.0344**		**96.4449**	**96.4449**	**1.7500e-003**		**96.4886**

3.8 Paving for Rancho Cordova Widening - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9152**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0389	0.0211	0.2382	8.1000e-004	0.1141	6.5000e-004	0.1148	0.0303	6.0000e-004	0.0309		80.3708	80.3708	1.4500e-003		80.4072
Total	**0.0389**	**0.0211**	**0.2382**	**8.1000e-004**	**0.1141**	**6.5000e-004**	**0.1148**	**0.0303**	**6.0000e-004**	**0.0309**		**80.3708**	**80.3708**	**1.4500e-003**		**80.4072**

3.8 Paving for Rancho Cordova Widening - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9152**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0389	0.0211	0.2382	8.1000e-004	0.1052	6.5000e-004	0.1058	0.0281	6.0000e-004	0.0287		80.3708	80.3708	1.4500e-003		80.4072
Total	**0.0389**	**0.0211**	**0.2382**	**8.1000e-004**	**0.1052**	**6.5000e-004**	**0.1058**	**0.0281**	**6.0000e-004**	**0.0287**		**80.3708**	**80.3708**	**1.4500e-003**		**80.4072**

3.8 Paving for Rancho Cordova Widening - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9152**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0366	0.0193	0.2229	7.8000e-004	0.1141	6.1000e-004	0.1147	0.0303	5.6000e-004	0.0308		77.8167	77.8167	1.3300e-003		77.8499
Total	**0.0366**	**0.0193**	**0.2229**	**7.8000e-004**	**0.1141**	**6.1000e-004**	**0.1147**	**0.0303**	**5.6000e-004**	**0.0308**		**77.8167**	**77.8167**	**1.3300e-003**		**77.8499**

3.8 Paving for Rancho Cordova Widening - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9152**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0366	0.0193	0.2229	7.8000e-004	0.1052	6.1000e-004	0.1058	0.0281	5.6000e-004	0.0286		77.8167	77.8167	1.3300e-003		77.8499
Total	**0.0366**	**0.0193**	**0.2229**	**7.8000e-004**	**0.1052**	**6.1000e-004**	**0.1058**	**0.0281**	**5.6000e-004**	**0.0286**		**77.8167**	**77.8167**	**1.3300e-003**		**77.8499**

3.9 Site Prepration for Park - Lot D - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999		3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.0663**	**1.0868**	**19.1531**	**9.9307**	**0.9999**	**10.9305**		**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0440	0.0232	0.2674	9.4000e-004	0.1369	7.3000e-004	0.1377	0.0363	6.7000e-004	0.0370		93.3800	93.3800	1.6000e-003		93.4199
Total	**0.0440**	**0.0232**	**0.2674**	**9.4000e-004**	**0.1369**	**7.3000e-004**	**0.1377**	**0.0363**	**6.7000e-004**	**0.0370**		**93.3800**	**93.3800**	**1.6000e-003**		**93.4199**

3.9 Site Prepration for Park - Lot D - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999	0.0000	3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**8.1298**	**1.0868**	**9.2166**	**4.4688**	**0.9999**	**5.4687**	**0.0000**	**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0440	0.0232	0.2674	9.4000e-004	0.1262	7.3000e-004	0.1269	0.0337	6.7000e-004	0.0344		93.3800	93.3800	1.6000e-003		93.4199
Total	**0.0440**	**0.0232**	**0.2674**	**9.4000e-004**	**0.1262**	**7.3000e-004**	**0.1269**	**0.0337**	**6.7000e-004**	**0.0344**		**93.3800**	**93.3800**	**1.6000e-003**		**93.4199**

3.9 Site Prepration for Park - Lot D - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999		3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.0663**	**1.0868**	**19.1531**	**9.9307**	**0.9999**	**10.9305**		**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0410	0.0213	0.2497	9.1000e-004	0.1369	6.8000e-004	0.1376	0.0363	6.2000e-004	0.0369		90.6626	90.6626	1.4600e-003		90.6990
Total	**0.0410**	**0.0213**	**0.2497**	**9.1000e-004**	**0.1369**	**6.8000e-004**	**0.1376**	**0.0363**	**6.2000e-004**	**0.0369**		**90.6626**	**90.6626**	**1.4600e-003**		**90.6990**

3.9 Site Prepration for Park - Lot D - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999	0.0000	3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**8.1298**	**1.0868**	**9.2166**	**4.4688**	**0.9999**	**5.4687**	**0.0000**	**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0410	0.0213	0.2497	9.1000e-004	0.1262	6.8000e-004	0.1269	0.0337	6.2000e-004	0.0343		90.6626	90.6626	1.4600e-003		90.6990
Total	**0.0410**	**0.0213**	**0.2497**	**9.1000e-004**	**0.1262**	**6.8000e-004**	**0.1269**	**0.0337**	**6.2000e-004**	**0.0343**		**90.6626**	**90.6626**	**1.4600e-003**		**90.6990**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.7932	15.8365	35.7184	0.1601	19.8919	0.0841	19.9760	5.3108	0.0782	5.3890		16,345.5907	16,345.5907	0.6262		16,361.2461
Unmitigated	2.7932	15.8365	35.7184	0.1601	19.8919	0.0841	19.9760	5.3108	0.0782	5.3890		16,345.5907	16,345.5907	0.6262		16,361.2461

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	106.40	102.24	93.76	266,875	266,875
City Park	1.93	23.28	17.13	13,200	13,200
City Park	2.99	35.95	26.45	20,380	20,380
City Park	17.20	207.03	152.33	117,380	117,380
Retirement Community	708.00	598.85	575.25	1,728,128	1,728,128
Single Family Housing	2,551.36	2,655.88	2310.16	6,496,963	6,496,963
Total	3,387.88	3,623.22	3,175.08	8,642,925	8,642,925

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.3146	2.6887	1.1441	0.0172		0.2174	0.2174		0.2174	0.2174		3,432.3252	3,432.3252	0.0658	0.0629	3,452.7218
NaturalGas Unmitigated	0.3146	2.6887	1.1441	0.0172		0.2174	0.2174		0.2174	0.2174		3,432.3252	3,432.3252	0.0658	0.0629	3,452.7218

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	427.314	4.6100e-003	0.0394	0.0168	2.5000e-004		3.1800e-003	3.1800e-003		3.1800e-003	3.1800e-003		50.2722	50.2722	9.6000e-004	9.2000e-004	50.5710
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	9778.42	0.1055	0.9012	0.3835	5.7500e-003		0.0729	0.0729		0.0729	0.0729		1,150.4021	1,150.4021	0.0221	0.0211	1,157.2383
Single Family Housing	18969	0.2046	1.7481	0.7439	0.0112		0.1413	0.1413		0.1413	0.1413		2,231.6509	2,231.6509	0.0428	0.0409	2,244.9125
Total		**0.3146**	**2.6887**	**1.1441**	**0.0172**		**0.2174**	**0.2174**		**0.2174**	**0.2174**		**3,432.3252**	**3,432.3252**	**0.0658**	**0.0629**	**3,452.7218**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	0.427314	4.6100e-003	0.0394	0.0168	2.5000e-004		3.1800e-003	3.1800e-003		3.1800e-003	3.1800e-003		50.2722	50.2722	9.6000e-004	9.2000e-004	50.5710
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	9.77842	0.1055	0.9012	0.3835	5.7500e-003		0.0729	0.0729		0.0729	0.0729		1,150.4021	1,150.4021	0.0221	0.0211	1,157.2383
Single Family Housing	18.969	0.2046	1.7481	0.7439	0.0112		0.1413	0.1413		0.1413	0.1413		2,231.6509	2,231.6509	0.0428	0.0409	2,244.9125
Total		**0.3146**	**2.6887**	**1.1441**	**0.0172**		**0.2174**	**0.2174**		**0.2174**	**0.2174**		**3,432.3252**	**3,432.3252**	**0.0658**	**0.0629**	**3,452.7218**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	21.3159	0.5492	47.6015	2.5200e-003		0.2649	0.2649		0.2649	0.2649	0.0000	86.0143	86.0143	0.0819	0.0000	88.0615
Unmitigated	21.3159	0.5492	47.6015	2.5200e-003		0.2649	0.2649		0.2649	0.2649	0.0000	86.0143	86.0143	0.0819	0.0000	88.0615

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.7381					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	17.1545					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.4233	0.5492	47.6015	2.5200e-003		0.2649	0.2649		0.2649	0.2649		86.0143	86.0143	0.0819		88.0615
Total	**21.3159**	**0.5492**	**47.6015**	**2.5200e-003**		**0.2649**	**0.2649**		**0.2649**	**0.2649**	**0.0000**	**86.0143**	**86.0143**	**0.0819**	**0.0000**	**88.0615**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.7381					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	17.1545					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.4233	0.5492	47.6015	2.5200e-003		0.2649	0.2649		0.2649	0.2649		86.0143	86.0143	0.0819		88.0615
Total	**21.3159**	**0.5492**	**47.6015**	**2.5200e-003**		**0.2649**	**0.2649**		**0.2649**	**0.2649**	**0.0000**	**86.0143**	**86.0143**	**0.0819**	**0.0000**	**88.0615**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

The Ranch - City of Rancho Cordova (Construction Only - Phase 4)

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	215.00	Dwelling Unit	7.17	215,000.00	621
Retirement Community	22.00	Dwelling Unit	0.73	22,000.00	45

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Estimated construction start date for Phase 4 of March 2030 (provided by Applicant).

Land Use - This model run provides construction emissions only.

Construction Phase - Phase 4

Off-road Equipment -

Off-road Equipment - For building construction, assumes 1 crane, 2 forklifts, 1 generator set, 1 tractor/loader/backhoe, and 1 welder (as provided by the applicant)

Off-road Equipment -

Off-road Equipment - D

Off-road Equipment -

Trips and VMT - Assume grading truck haul length = 7 miles (Sacramento dump site).
Grading - Assume 10.66 acres grading during this phase, based on project components to be built during this phase. Net export of cut and fill is 25,451 cy.

Architectural Coating - Assumes interior coatings use flat coatings.

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust -

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 28.33% - reflects project person/du value (2.523) vs. statewide avg. (2.97) and latest statewide data (ARB). Parking Degreaser EF red. by 57.5% (corrects for walking paths modeled as 'parking lot').

Area Coating -

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	41.00
tblConstructionPhase	NumDays	20.00	85.00
tblConstructionPhase	NumDays	20.00	65.00
tblConstructionPhase	NumDays	230.00	459.00
tblConstructionPhase	NumDays	20.00	108.00
tblGrading	AcresOfGrading	42.50	10.66
tblGrading	MaterialExported	0.00	25,451.00
tblLandUse	LotAcreage	5.66	7.17
tblLandUse	LotAcreage	4.40	0.73
tblLandUse	Population	574.00	621.00
tblLandUse	Population	59.00	45.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripNumber	2,516.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2030	0.1686	0.8434	1.4955	3.5300e-003	0.6687	0.0297	0.6984	0.3543	0.0297	0.3840	0.0000	304.2583	304.2583	0.0134	0.0000	304.5940
2031	0.1637	0.9744	1.8368	4.4400e-003	0.1381	0.0153	0.1534	0.0371	0.0153	0.0523	0.0000	388.3836	388.3836	0.0141	0.0000	388.7355
2032	0.2144	1.2916	2.4254	5.8800e-003	0.1837	0.0203	0.2040	0.0493	0.0203	0.0696	0.0000	514.2273	514.2273	0.0186	0.0000	514.6916
2033	0.9368	0.0476	0.1170	2.5000e-004	0.0135	1.1500e-003	0.0146	3.5900e-003	1.1400e-003	4.7300e-003	0.0000	21.6710	21.6710	6.6000e-004	0.0000	21.6874
Maximum	**0.9368**	**1.2916**	**2.4254**	**5.8800e-003**	**0.6687**	**0.0297**	**0.6984**	**0.3543**	**0.0297**	**0.3840**	**0.0000**	**514.2273**	**514.2273**	**0.0186**	**0.0000**	**514.6916**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2030	0.1686	0.8434	1.4955	3.5300e-003	0.3180	0.0297	0.3477	0.1638	0.0297	0.1935	0.0000	304.2580	304.2580	0.0134	0.0000	304.5936
2031	0.1637	0.9744	1.8368	4.4400e-003	0.1276	0.0153	0.1429	0.0345	0.0153	0.0498	0.0000	388.3833	388.3833	0.0141	0.0000	388.7352
2032	0.2144	1.2916	2.4254	5.8800e-003	0.1696	0.0203	0.1900	0.0459	0.0203	0.0661	0.0000	514.2269	514.2269	0.0186	0.0000	514.6912
2033	0.9368	0.0476	0.1170	2.5000e-004	0.0124	1.1500e-003	0.0136	3.3300e-003	1.1400e-003	4.4700e-003	0.0000	21.6710	21.6710	6.6000e-004	0.0000	21.6874
Maximum	**0.9368**	**1.2916**	**2.4254**	**5.8800e-003**	**0.3180**	**0.0297**	**0.3477**	**0.1638**	**0.0297**	**0.1935**	**0.0000**	**514.2269**	**514.2269**	**0.0186**	**0.0000**	**514.6912**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**37.48**	**0.00**	**35.15**	**44.29**	**0.00**	**38.53**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**3-1-2030**	**5-31-2030**	0.4434	0.4434
2	**6-1-2030**	**8-31-2030**	0.3751	0.3751
3	**9-1-2030**	**11-30-2030**	0.1884	0.1884
5	**3-1-2031**	**5-31-2031**	0.2519	0.2519
6	**6-1-2031**	**8-31-2031**	0.3800	0.3800
7	**9-1-2031**	**11-30-2031**	0.3765	0.3765
8	**12-1-2031**	**2-29-2032**	0.3754	0.3754
9	**3-1-2032**	**5-31-2032**	0.3783	0.3783

10	**6-1-2032**	**8-31-2032**	0.3780	0.3780
11	**9-1-2032**	**11-30-2032**	0.3745	0.3745
12	**12-1-2032**	**2-28-2033**	0.5054	0.5054
13	**3-1-2033**	**5-31-2033**	0.5992	0.5992
14	**6-1-2033**	**8-31-2033**	0.0065	0.0065
		Highest	0.5992	0.5992

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.1467	0.0281	2.4355	1.3000e-004		0.0136	0.0136		0.0136	0.0136	0.0000	3.9924	3.9924	3.8000e-003	0.0000	4.0874
Energy	0.0127	0.1088	0.0463	6.9000e-004		8.8000e-003	8.8000e-003		8.8000e-003	8.8000e-003	0.0000	398.6816	398.6816	0.0158	5.0800e-003	400.5913
Mobile	0.2136	1.1087	2.4964	0.0118	1.3826	6.0100e-003	1.3886	0.3702	5.5900e-003	0.3758	0.0000	1,089.6171	1,089.6171	0.0397	0.0000	1,090.6097
Waste						0.0000	0.0000		0.0000	0.0000	22.1301	0.0000	22.1301	1.3079	0.0000	54.8263
Water						0.0000	0.0000		0.0000	0.0000	5.4632	29.7243	35.1875	0.0203	0.0122	39.3246
Total	**1.3731**	**1.2457**	**4.9782**	**0.0126**	**1.3826**	**0.0284**	**1.4109**	**0.3702**	**0.0279**	**0.3981**	**27.5933**	**1,522.0154**	**1,549.6087**	**1.3874**	**0.0173**	**1,589.4393**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.1467	0.0281	2.4355	1.3000e-004		0.0136	0.0136		0.0136	0.0136	0.0000	3.9924	3.9924	3.8000e-003	0.0000	4.0874
Energy	0.0127	0.1088	0.0463	6.9000e-004		8.8000e-003	8.8000e-003		8.8000e-003	8.8000e-003	0.0000	398.6816	398.6816	0.0158	5.0800e-003	400.5913
Mobile	0.2136	1.1087	2.4964	0.0118	1.3826	6.0100e-003	1.3886	0.3702	5.5900e-003	0.3758	0.0000	1,089.6171	1,089.6171	0.0397	0.0000	1,090.6097
Waste						0.0000	0.0000		0.0000	0.0000	22.1301	0.0000	22.1301	1.3079	0.0000	54.8263
Water						0.0000	0.0000		0.0000	0.0000	5.4632	29.7243	35.1875	0.0203	0.0122	39.3246
Total	**1.3731**	**1.2457**	**4.9782**	**0.0126**	**1.3826**	**0.0284**	**1.4109**	**0.3702**	**0.0279**	**0.3981**	**27.5933**	**1,522.0154**	**1,549.6087**	**1.3874**	**0.0173**	**1,589.4393**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	1,585.9200
Vegetation Land Change	-1,057.2430
Total	**528.6770**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation for Commercial and MFR	Site Preparation	3/1/2030	4/26/2030	5	41	
2	Grading and improvements	Grading	4/28/2030	8/23/2030	5	85	
3	Paving	Paving	8/2/2030	10/31/2030	5	65	
4	Building Construction	Building Construction	4/1/2031	12/31/2032	5	459	
5	Architectural Coating	Architectural Coating	1/2/2033	6/1/2033	5	108	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 479,925; Residential Outdoor: 159,975; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation for Commercial and MFR	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation for Commercial and MFR	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading and improvements	Excavators	1	8.00	158	0.38
Grading and improvements	Graders	1	8.00	187	0.41
Grading and improvements	Rubber Tired Dozers	1	8.00	247	0.40
Grading and improvements	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

The Ranch - City of Rancho Cordova (Construction Only - Phase 4) - Sacramento County, Annual

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation for Commercial and MFR	7	18.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Grading and improvements	6	15.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	171.00	25.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	34.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation for Commercial and MFR - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3704	0.0000	0.3704	0.2036	0.0000	0.2036	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0500	0.2802	0.3340	9.5000e-004		8.9500e-003	8.9500e-003		8.9500e-003	8.9500e-003	0.0000	82.0095	82.0095	4.0500e-003	0.0000	82.1106
Total	**0.0500**	**0.2802**	**0.3340**	**9.5000e-004**	**0.3704**	**8.9500e-003**	**0.3793**	**0.2036**	**8.9500e-003**	**0.2125**	**0.0000**	**82.0095**	**82.0095**	**4.0500e-003**	**0.0000**	**82.1106**

3.2 Site Preparation for Commercial and MFR - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3000e-004	3.6000e-004	4.8200e-003	2.0000e-005	2.7100e-003	1.0000e-005	2.7200e-003	7.2000e-004	1.0000e-005	7.3000e-004	0.0000	1.6897	1.6897	3.0000e-005	0.0000	1.6903
Total	**7.3000e-004**	**3.6000e-004**	**4.8200e-003**	**2.0000e-005**	**2.7100e-003**	**1.0000e-005**	**2.7200e-003**	**7.2000e-004**	**1.0000e-005**	**7.3000e-004**	**0.0000**	**1.6897**	**1.6897**	**3.0000e-005**	**0.0000**	**1.6903**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1667	0.0000	0.1667	0.0916	0.0000	0.0916	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0500	0.2802	0.3340	9.5000e-004		8.9500e-003	8.9500e-003		8.9500e-003	8.9500e-003	0.0000	82.0094	82.0094	4.0500e-003	0.0000	82.1105
Total	**0.0500**	**0.2802**	**0.3340**	**9.5000e-004**	**0.1667**	**8.9500e-003**	**0.1756**	**0.0916**	**8.9500e-003**	**0.1006**	**0.0000**	**82.0094**	**82.0094**	**4.0500e-003**	**0.0000**	**82.1105**

3.2 Site Preparation for Commercial and MFR - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3000e-004	3.6000e-004	4.8200e-003	2.0000e-005	2.5000e-003	1.0000e-005	2.5100e-003	6.7000e-004	1.0000e-005	6.8000e-004	0.0000	1.6897	1.6897	3.0000e-005	0.0000	1.6903
Total	**7.3000e-004**	**3.6000e-004**	**4.8200e-003**	**2.0000e-005**	**2.5000e-003**	**1.0000e-005**	**2.5100e-003**	**6.7000e-004**	**1.0000e-005**	**6.8000e-004**	**0.0000**	**1.6897**	**1.6897**	**3.0000e-005**	**0.0000**	**1.6903**

3.3 Grading and improvements - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2616	0.0000	0.2616	0.1413	0.0000	0.1413	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0688	0.3294	0.6142	1.5400e-003		9.9500e-003	9.9500e-003		9.9500e-003	9.9500e-003	0.0000	132.6196	132.6196	5.5400e-003	0.0000	132.7581
Total	**0.0688**	**0.3294**	**0.6142**	**1.5400e-003**	**0.2616**	**9.9500e-003**	**0.2715**	**0.1413**	**9.9500e-003**	**0.1512**	**0.0000**	**132.6196**	**132.6196**	**5.5400e-003**	**0.0000**	**132.7581**

3.3 Grading and improvements - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2500e-003	6.2000e-004	8.3200e-003	3.0000e-005	4.6800e-003	2.0000e-005	4.7000e-003	1.2500e-003	2.0000e-005	1.2700e-003	0.0000	2.9192	2.9192	4.0000e-005	0.0000	2.9203
Total	**1.2500e-003**	**6.2000e-004**	**8.3200e-003**	**3.0000e-005**	**4.6800e-003**	**2.0000e-005**	**4.7000e-003**	**1.2500e-003**	**2.0000e-005**	**1.2700e-003**	**0.0000**	**2.9192**	**2.9192**	**4.0000e-005**	**0.0000**	**2.9203**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1177	0.0000	0.1177	0.0636	0.0000	0.0636	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0688	0.3294	0.6142	1.5400e-003		9.9500e-003	9.9500e-003		9.9500e-003	9.9500e-003	0.0000	132.6195	132.6195	5.5400e-003	0.0000	132.7579
Total	**0.0688**	**0.3294**	**0.6142**	**1.5400e-003**	**0.1177**	**9.9500e-003**	**0.1277**	**0.0636**	**9.9500e-003**	**0.0735**	**0.0000**	**132.6195**	**132.6195**	**5.5400e-003**	**0.0000**	**132.7579**

3.3 Grading and improvements - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2500e-003	6.2000e-004	8.3200e-003	3.0000e-005	4.3200e-003	2.0000e-005	4.3400e-003	1.1600e-003	2.0000e-005	1.1800e-003	0.0000	2.9192	2.9192	4.0000e-005	0.0000	2.9203
Total	**1.2500e-003**	**6.2000e-004**	**8.3200e-003**	**3.0000e-005**	**4.3200e-003**	**2.0000e-005**	**4.3400e-003**	**1.1600e-003**	**2.0000e-005**	**1.1800e-003**	**0.0000**	**2.9192**	**2.9192**	**4.0000e-005**	**0.0000**	**2.9203**

3.4 Paving - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0450	0.2314	0.5151	9.1000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	78.3234	78.3234	3.6700e-003	0.0000	78.4152
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0450**	**0.2314**	**0.5151**	**9.1000e-004**		**0.0108**	**0.0108**		**0.0108**	**0.0108**	**0.0000**	**78.3234**	**78.3234**	**3.6700e-003**	**0.0000**	**78.4152**

3.4 Paving - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8700e-003	1.4200e-003	0.0191	7.0000e-005	0.0293	5.0000e-005	0.0294	7.4100e-003	5.0000e-005	7.4600e-003	0.0000	6.6969	6.6969	1.0000e-004	0.0000	6.6995
Total	**2.8700e-003**	**1.4200e-003**	**0.0191**	**7.0000e-005**	**0.0293**	**5.0000e-005**	**0.0294**	**7.4100e-003**	**5.0000e-005**	**7.4600e-003**	**0.0000**	**6.6969**	**6.6969**	**1.0000e-004**	**0.0000**	**6.6995**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0450	0.2314	0.5151	9.1000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	78.3233	78.3233	3.6700e-003	0.0000	78.4151
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0450**	**0.2314**	**0.5151**	**9.1000e-004**		**0.0108**	**0.0108**		**0.0108**	**0.0108**	**0.0000**	**78.3233**	**78.3233**	**3.6700e-003**	**0.0000**	**78.4151**

3.4 Paving - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8700e-003	1.4200e-003	0.0191	7.0000e-005	0.0268	5.0000e-005	0.0269	6.8000e-003	5.0000e-005	6.8500e-003	0.0000	6.6969	6.6969	1.0000e-004	0.0000	6.6995
Total	**2.8700e-003**	**1.4200e-003**	**0.0191**	**7.0000e-005**	**0.0268**	**5.0000e-005**	**0.0269**	**6.8000e-003**	**5.0000e-005**	**6.8500e-003**	**0.0000**	**6.6969**	**6.6969**	**1.0000e-004**	**0.0000**	**6.6995**

3.5 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1290	0.7816	1.5915	3.0500e-003		0.0146	0.0146		0.0146	0.0146	0.0000	258.9181	258.9181	0.0104	0.0000	259.1778
Total	**0.1290**	**0.7816**	**1.5915**	**3.0500e-003**		**0.0146**	**0.0146**		**0.0146**	**0.0146**	**0.0000**	**258.9181**	**258.9181**	**0.0104**	**0.0000**	**259.1778**

3.5 Building Construction - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.3100e-003	0.1779	0.0394	5.6000e-004	0.0144	1.9000e-004	0.0146	4.1600e-003	1.8000e-004	4.3400e-003	0.0000	54.1705	54.1705	2.6300e-003	0.0000	54.2363
Worker	0.0304	0.0149	0.2059	8.3000e-004	0.1237	5.5000e-004	0.1243	0.0329	5.0000e-004	0.0334	0.0000	75.2950	75.2950	1.0600e-003	0.0000	75.3215
Total	**0.0348**	**0.1928**	**0.2453**	**1.3900e-003**	**0.1381**	**7.4000e-004**	**0.1388**	**0.0371**	**6.8000e-004**	**0.0378**	**0.0000**	**129.4655**	**129.4655**	**3.6900e-003**	**0.0000**	**129.5577**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1290	0.7816	1.5915	3.0500e-003		0.0146	0.0146		0.0146	0.0146	0.0000	258.9178	258.9178	0.0104	0.0000	259.1775
Total	**0.1290**	**0.7816**	**1.5915**	**3.0500e-003**		**0.0146**	**0.0146**		**0.0146**	**0.0146**	**0.0000**	**258.9178**	**258.9178**	**0.0104**	**0.0000**	**259.1775**

3.5 Building Construction - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.3100e-003	0.1779	0.0394	5.6000e-004	0.0135	1.9000e-004	0.0137	3.9300e-003	1.8000e-004	4.1200e-003	0.0000	54.1705	54.1705	2.6300e-003	0.0000	54.2363
Worker	0.0304	0.0149	0.2059	8.3000e-004	0.1141	5.5000e-004	0.1146	0.0305	5.0000e-004	0.0310	0.0000	75.2950	75.2950	1.0600e-003	0.0000	75.3215
Total	**0.0348**	**0.1928**	**0.2453**	**1.3900e-003**	**0.1276**	**7.4000e-004**	**0.1283**	**0.0345**	**6.8000e-004**	**0.0352**	**0.0000**	**129.4655**	**129.4655**	**3.6900e-003**	**0.0000**	**129.5577**

3.5 Building Construction - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1715	1.0394	2.1166	4.0600e-003		0.0194	0.0194		0.0194	0.0194	0.0000	344.3479	344.3479	0.0138	0.0000	344.6933
Total	**0.1715**	**1.0394**	**2.1166**	**4.0600e-003**		**0.0194**	**0.0194**		**0.0194**	**0.0194**	**0.0000**	**344.3479**	**344.3479**	**0.0138**	**0.0000**	**344.6933**

3.5 Building Construction - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.6200e-003	0.2339	0.0514	7.4000e-004	0.0191	2.5000e-004	0.0194	5.5300e-003	2.4000e-004	5.7600e-003	0.0000	71.8635	71.8635	3.4700e-003	0.0000	71.9502
Worker	0.0373	0.0183	0.2574	1.0800e-003	0.1645	6.8000e-004	0.1652	0.0438	6.2000e-004	0.0444	0.0000	98.0159	98.0159	1.2900e-003	0.0000	98.0481
Total	**0.0429**	**0.2521**	**0.3088**	**1.8200e-003**	**0.1837**	**9.3000e-004**	**0.1846**	**0.0493**	**8.6000e-004**	**0.0501**	**0.0000**	**169.8794**	**169.8794**	**4.7600e-003**	**0.0000**	**169.9983**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1715	1.0394	2.1166	4.0600e-003		0.0194	0.0194		0.0194	0.0194	0.0000	344.3475	344.3475	0.0138	0.0000	344.6929
Total	**0.1715**	**1.0394**	**2.1166**	**4.0600e-003**		**0.0194**	**0.0194**		**0.0194**	**0.0194**	**0.0000**	**344.3475**	**344.3475**	**0.0138**	**0.0000**	**344.6929**

3.5 Building Construction - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.6200e-003	0.2339	0.0514	7.4000e-004	0.0179	2.5000e-004	0.0182	5.2300e-003	2.4000e-004	5.4700e-003	0.0000	71.8635	71.8635	3.4700e-003	0.0000	71.9502
Worker	0.0373	0.0183	0.2574	1.0800e-003	0.1517	6.8000e-004	0.1524	0.0406	6.2000e-004	0.0412	0.0000	98.0159	98.0159	1.2900e-003	0.0000	98.0481
Total	**0.0429**	**0.2521**	**0.3088**	**1.8200e-003**	**0.1696**	**9.3000e-004**	**0.1706**	**0.0459**	**8.6000e-004**	**0.0467**	**0.0000**	**169.8794**	**169.8794**	**4.7600e-003**	**0.0000**	**169.9983**

3.6 Architectural Coating - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.9269					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0600e-003	0.0462	0.0971	1.6000e-004		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003	0.0000	13.7876	13.7876	5.6000e-004	0.0000	13.8015
Total	**0.9339**	**0.0462**	**0.0971**	**1.6000e-004**		**1.1000e-003**	**1.1000e-003**		**1.1000e-003**	**1.1000e-003**	**0.0000**	**13.7876**	**13.7876**	**5.6000e-004**	**0.0000**	**13.8015**

3.6 Architectural Coating - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8400e-003	1.3900e-003	0.0200	9.0000e-005	0.0135	5.0000e-005	0.0135	3.5900e-003	5.0000e-005	3.6300e-003	0.0000	7.8835	7.8835	1.0000e-004	0.0000	7.8859
Total	**2.8400e-003**	**1.3900e-003**	**0.0200**	**9.0000e-005**	**0.0135**	**5.0000e-005**	**0.0135**	**3.5900e-003**	**5.0000e-005**	**3.6300e-003**	**0.0000**	**7.8835**	**7.8835**	**1.0000e-004**	**0.0000**	**7.8859**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.9269					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0600e-003	0.0462	0.0971	1.6000e-004		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003	0.0000	13.7876	13.7876	5.6000e-004	0.0000	13.8015
Total	**0.9339**	**0.0462**	**0.0971**	**1.6000e-004**		**1.1000e-003**	**1.1000e-003**		**1.1000e-003**	**1.1000e-003**	**0.0000**	**13.7876**	**13.7876**	**5.6000e-004**	**0.0000**	**13.8015**

3.6 Architectural Coating - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8400e-003	1.3900e-003	0.0200	9.0000e-005	0.0124	5.0000e-005	0.0125	3.3300e-003	5.0000e-005	3.3800e-003	0.0000	7.8835	7.8835	1.0000e-004	0.0000	7.8859
Total	**2.8400e-003**	**1.3900e-003**	**0.0200**	**9.0000e-005**	**0.0124**	**5.0000e-005**	**0.0125**	**3.3300e-003**	**5.0000e-005**	**3.3800e-003**	**0.0000**	**7.8835**	**7.8835**	**1.0000e-004**	**0.0000**	**7.8859**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2136	1.1087	2.4964	0.0118	1.3826	6.0100e-003	1.3886	0.3702	5.5900e-003	0.3758	0.0000	1,089.6171	1,089.6171	0.0397	0.0000	1,090.6097
Unmitigated	0.2136	1.1087	2.4964	0.0118	1.3826	6.0100e-003	1.3886	0.3702	5.5900e-003	0.3758	0.0000	1,089.6171	1,089.6171	0.0397	0.0000	1,090.6097

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,429.75	1,373.85	1259.90	3,586,137	3,586,137
Retirement Community	52.80	44.66	42.90	128,877	128,877
Total	1,482.55	1,418.51	1,302.80	3,715,015	3,715,015

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	272.6356	272.6356	0.0134	2.7700e-003	273.7962
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	272.6356	272.6356	0.0134	2.7700e-003	273.7962
NaturalGas Mitigated	0.0127	0.1088	0.0463	6.9000e-004		8.8000e-003	8.8000e-003		8.8000e-003	8.8000e-003	0.0000	126.0460	126.0460	2.4200e-003	2.3100e-003	126.7951
NaturalGas Unmitigated	0.0127	0.1088	0.0463	6.9000e-004		8.8000e-003	8.8000e-003		8.8000e-003	8.8000e-003	0.0000	126.0460	126.0460	2.4200e-003	2.3100e-003	126.7951

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.09584e+006	0.0113	0.0966	0.0411	6.2000e-004		7.8100e-003	7.8100e-003		7.8100e-003	7.8100e-003	0.0000	111.8421	111.8421	2.1400e-003	2.0500e-003	112.5067
Retirement Community	266172	1.4400e-003	0.0123	5.2200e-003	8.0000e-005		9.9000e-004	9.9000e-004		9.9000e-004	9.9000e-004	0.0000	14.2039	14.2039	2.7000e-004	2.6000e-004	14.2884
Total		**0.0127**	**0.1088**	**0.0463**	**7.0000e-004**		**8.8000e-003**	**8.8000e-003**		**8.8000e-003**	**8.8000e-003**	**0.0000**	**126.0460**	**126.0460**	**2.4100e-003**	**2.3100e-003**	**126.7951**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.09584e+006	0.0113	0.0966	0.0411	6.2000e-004		7.8100e-003	7.8100e-003		7.8100e-003	7.8100e-003	0.0000	111.8421	111.8421	2.1400e-003	2.0500e-003	112.5067
Retirement Community	266172	1.4400e-003	0.0123	5.2200e-003	8.0000e-005		9.9000e-004	9.9000e-004		9.9000e-004	9.9000e-004	0.0000	14.2039	14.2039	2.7000e-004	2.6000e-004	14.2884
Total		**0.0127**	**0.1088**	**0.0463**	**7.0000e-004**		**8.8000e-003**	**8.8000e-003**		**8.8000e-003**	**8.8000e-003**	**0.0000**	**126.0460**	**126.0460**	**2.4100e-003**	**2.3100e-003**	**126.7951**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	915139	245.0377	0.0120	2.4900e-003	246.0808
Retirement Community	103070	27.5979	1.3600e-003	2.8000e-004	27.7154
Total		**272.6356**	**0.0134**	**2.7700e-003**	**273.7962**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	915139	245.0377	0.0120	2.4900e-003	246.0808
Retirement Community	103070	27.5979	1.3600e-003	2.8000e-004	27.7154
Total		**272.6356**	**0.0134**	**2.7700e-003**	**273.7962**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.1467	0.0281	2.4355	1.3000e-004		0.0136	0.0136		0.0136	0.0136	0.0000	3.9924	3.9924	3.8000e-003	0.0000	4.0874
Unmitigated	1.1467	0.0281	2.4355	1.3000e-004		0.0136	0.0136		0.0136	0.0136	0.0000	3.9924	3.9924	3.8000e-003	0.0000	4.0874

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1483					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.9256					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0728	0.0281	2.4355	1.3000e-004		0.0136	0.0136		0.0136	0.0136	0.0000	3.9924	3.9924	3.8000e-003	0.0000	4.0874
Total	**1.1467**	**0.0281**	**2.4355**	**1.3000e-004**		**0.0136**	**0.0136**		**0.0136**	**0.0136**	**0.0000**	**3.9924**	**3.9924**	**3.8000e-003**	**0.0000**	**4.0874**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1483					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.9256					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0728	0.0281	2.4355	1.3000e-004		0.0136	0.0136		0.0136	0.0136	0.0000	3.9924	3.9924	3.8000e-003	0.0000	4.0874
Total	**1.1467**	**0.0281**	**2.4355**	**1.3000e-004**		**0.0136**	**0.0136**		**0.0136**	**0.0136**	**0.0000**	**3.9924**	**3.9924**	**3.8000e-003**	**0.0000**	**4.0874**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	35.1875	0.0203	0.0122	39.3246
Unmitigated	35.1875	0.0203	0.0122	39.3246

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	14.0081 / 8.8312	31.9212	0.0184	0.0111	35.6742
Retirement Community	1.43339 / 0.903658	3.2664	1.8800e-003	1.1300e-003	3.6504
Total		**35.1875**	**0.0203**	**0.0122**	**39.3246**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	14.0081 / 8.8312	31.9212	0.0184	0.0111	35.6742
Retirement Community	1.43339 / 0.903658	3.2664	1.8800e-003	1.1300e-003	3.6504
Total		**35.1875**	**0.0203**	**0.0122**	**39.3246**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	22.1301	1.3079	0.0000	54.8263
Unmitigated	22.1301	1.3079	0.0000	54.8263

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	98.9	20.0758	1.1865	0.0000	49.7370
Retirement Community	10.12	2.0543	0.1214	0.0000	5.0894
Total		**22.1301**	**1.3079**	**0.0000**	**54.8263**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	98.9	20.0758	1.1865	0.0000	49.7370
Retirement Community	10.12	2.0543	0.1214	0.0000	5.0894
Total		**22.1301**	**1.3079**	**0.0000**	**54.8263**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	528.6770	0.0000	0.0000	528.6770

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	530.1 / 284.8	-1,057.2430	0.0000	0.0000	-1,057.2430
Total		**-1,057.2430**	**0.0000**	**0.0000**	**-1,057.2430**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	2240	1,585.9200	0.0000	0.0000	1,585.9200
Total		**1,585.9200**	**0.0000**	**0.0000**	**1,585.9200**

The Ranch - City of Rancho Cordova (Construction Only - Phase 4)

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	215.00	Dwelling Unit	7.17	215,000.00	621
Retirement Community	22.00	Dwelling Unit	0.73	22,000.00	45

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Estimated construction start date for Phase 4 of March 2030 (provided by Applicant).

Land Use - This model run provides construction emissions only.

Construction Phase - Phase 4

Off-road Equipment -

Off-road Equipment - For building construction, assumes 1 crane, 2 forklifts, 1 generator set, 1 tractor/loader/backhoe, and 1 welder (as provided by the applicant)

Off-road Equipment -

Off-road Equipment - D

Off-road Equipment -

Trips and VMT - Assume grading truck haul length = 7 miles (Sacramento dump site).
Grading - Assume 10.66 acres grading during this phase, based on project components to be built during this phase. Net export of cut and fill is 25,451 cy.

Architectural Coating - Assumes interior coatings use flat coatings.

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust -

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 28.33% - reflects project person/du value (2.523) vs. statewide avg. (2.97) and latest statewide data (ARB). Parking Degreaser EF red. by 57.5% (corrects for walking paths modeled as 'parking lot').

Area Coating -

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	41.00
tblConstructionPhase	NumDays	20.00	85.00
tblConstructionPhase	NumDays	20.00	65.00
tblConstructionPhase	NumDays	230.00	459.00
tblConstructionPhase	NumDays	20.00	108.00
tblGrading	AcresOfGrading	42.50	10.66
tblGrading	MaterialExported	0.00	25,451.00
tblLandUse	LotAcreage	5.66	7.17
tblLandUse	LotAcreage	4.40	0.73
tblLandUse	Population	574.00	621.00
tblLandUse	Population	59.00	45.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripNumber	2,516.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2030	3.1377	14.9232	31.2422	0.0677	18.2032	0.5667	18.6405	9.9670	0.5666	10.4042	0.0000	6,431.2842	6,431.2842	0.2733	0.0000	6,438.1174
2031	1.7063	9.8582	19.0507	0.0461	1.4511	0.1556	1.6067	0.3883	0.1551	0.5434	0.0000	4,442.5102	4,442.5102	0.1581	0.0000	4,446.4630
2032	1.6774	9.8268	18.8986	0.0459	1.4511	0.1552	1.6063	0.3883	0.1547	0.5430	0.0000	4,421.3145	4,421.3145	0.1568	0.0000	4,425.2335
2033	17.3550	0.8797	2.2450	4.7500e-003	0.2586	0.0213	0.2799	0.0686	0.0212	0.0898	0.0000	459.5436	459.5436	0.0137	0.0000	459.8848
Maximum	**17.3550**	**14.9232**	**31.2422**	**0.0677**	**18.2032**	**0.5667**	**18.6405**	**9.9670**	**0.5666**	**10.4042**	**0.0000**	**6,431.2842**	**6,431.2842**	**0.2733**	**0.0000**	**6,438.1174**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2030	3.1377	14.9232	31.2422	0.0677	8.2560	0.5667	8.6933	4.5025	0.5666	4.9397	0.0000	6,431.2842	6,431.2842	0.2733	0.0000	6,438.1174
2031	1.7063	9.8582	19.0507	0.0461	1.3397	0.1556	1.4954	0.3610	0.1551	0.5161	0.0000	4,442.5102	4,442.5102	0.1581	0.0000	4,446.4630
2032	1.6774	9.8268	18.8986	0.0459	1.3397	0.1552	1.4949	0.3610	0.1547	0.5156	0.0000	4,421.3145	4,421.3145	0.1568	0.0000	4,425.2335
2033	17.3550	0.8797	2.2450	4.7500e-003	0.2384	0.0213	0.2597	0.0636	0.0212	0.0848	0.0000	459.5436	459.5436	0.0137	0.0000	459.8848
Maximum	**17.3550**	**14.9232**	**31.2422**	**0.0677**	**8.2560**	**0.5667**	**8.6933**	**4.5025**	**0.5666**	**4.9397**	**0.0000**	**6,431.2842**	**6,431.2842**	**0.2733**	**0.0000**	**6,438.1174**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**47.70**	**0.00**	**46.04**	**51.09**	**0.00**	**47.70**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.4670	0.2248	19.4841	1.0300e-003		0.1084	0.1084		0.1084	0.1084	0.0000	35.2069	35.2069	0.0335	0.0000	36.0448
Energy	0.0698	0.5964	0.2538	3.8100e-003		0.0482	0.0482		0.0482	0.0482		761.3258	761.3258	0.0146	0.0140	765.8500
Mobile	1.5374	6.0865	15.9394	0.0714	8.0538	0.0338	8.0876	2.1502	0.0314	2.1817		7,271.9791	7,271.9791	0.2487		7,278.1968
Total	**8.0742**	**6.9077**	**35.6772**	**0.0762**	**8.0538**	**0.1905**	**8.2443**	**2.1502**	**0.1881**	**2.3383**	**0.0000**	**8,068.5118**	**8,068.5118**	**0.2968**	**0.0140**	**8,080.0915**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.4670	0.2248	19.4841	1.0300e-003		0.1084	0.1084		0.1084	0.1084	0.0000	35.2069	35.2069	0.0335	0.0000	36.0448
Energy	0.0698	0.5964	0.2538	3.8100e-003		0.0482	0.0482		0.0482	0.0482		761.3258	761.3258	0.0146	0.0140	765.8500
Mobile	1.5374	6.0865	15.9394	0.0714	8.0538	0.0338	8.0876	2.1502	0.0314	2.1817		7,271.9791	7,271.9791	0.2487		7,278.1968
Total	**8.0742**	**6.9077**	**35.6772**	**0.0762**	**8.0538**	**0.1905**	**8.2443**	**2.1502**	**0.1881**	**2.3383**	**0.0000**	**8,068.5118**	**8,068.5118**	**0.2968**	**0.0140**	**8,080.0915**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation for Commercial and MFR	Site Preparation	3/1/2030	4/26/2030	5	41	
2	Grading and improvements	Grading	4/28/2030	8/23/2030	5	85	
3	Paving	Paving	8/2/2030	10/31/2030	5	65	
4	Building Construction	Building Construction	4/1/2031	12/31/2032	5	459	
5	Architectural Coating	Architectural Coating	1/2/2033	6/1/2033	5	108	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 479,925; Residential Outdoor: 159,975; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation for Commercial and MFR	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation for Commercial and MFR	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading and improvements	Excavators	1	8.00	158	0.38
Grading and improvements	Graders	1	8.00	187	0.41
Grading and improvements	Rubber Tired Dozers	1	8.00	247	0.40
Grading and improvements	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation for Commercial and MFR	7	18.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Grading and improvements	6	15.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	171.00	25.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	34.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation for Commercial and MFR - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.4399	13.6680	16.2918	0.0466		0.4367	0.4367		0.4367	0.4367		4,409.7537	4,409.7537	0.2176		4,415.1936
Total	**2.4399**	**13.6680**	**16.2918**	**0.0466**	**18.0663**	**0.4367**	**18.5029**	**9.9307**	**0.4367**	**10.3673**		**4,409.7537**	**4,409.7537**	**0.2176**		**4,415.1936**

3.2 Site Preparation for Commercial and MFR - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0406	0.0159	0.2823	1.0100e-003	0.1369	6.3000e-004	0.1376	0.0363	5.8000e-004	0.0369		100.5142	100.5142	1.5400e-003		100.5527
Total	**0.0406**	**0.0159**	**0.2823**	**1.0100e-003**	**0.1369**	**6.3000e-004**	**0.1376**	**0.0363**	**5.8000e-004**	**0.0369**		**100.5142**	**100.5142**	**1.5400e-003**		**100.5527**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	2.4399	13.6680	16.2918	0.0466		0.4367	0.4367		0.4367	0.4367	0.0000	4,409.7537	4,409.7537	0.2176		4,415.1936
Total	**2.4399**	**13.6680**	**16.2918**	**0.0466**	**8.1298**	**0.4367**	**8.5665**	**4.4688**	**0.4367**	**4.9055**	**0.0000**	**4,409.7537**	**4,409.7537**	**0.2176**		**4,415.1936**

3.2 Site Preparation for Commercial and MFR - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0406	0.0159	0.2823	1.0100e-003	0.1262	6.3000e-004	0.1269	0.0337	5.8000e-004	0.0343		100.5142	100.5142	1.5400e-003		100.5527
Total	**0.0406**	**0.0159**	**0.2823**	**1.0100e-003**	**0.1262**	**6.3000e-004**	**0.1269**	**0.0337**	**5.8000e-004**	**0.0343**		**100.5142**	**100.5142**	**1.5400e-003**		**100.5527**

3.3 Grading and improvements - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1551	0.0000	6.1551	3.3246	0.0000	3.3246			0.0000			0.0000
Off-Road	1.6179	7.7501	14.4518	0.0363		0.2340	0.2340		0.2340	0.2340		3,439.7201	3,439.7201	0.1437		3,443.3117
Total	**1.6179**	**7.7501**	**14.4518**	**0.0363**	**6.1551**	**0.2340**	**6.3891**	**3.3246**	**0.2340**	**3.5586**		**3,439.7201**	**3,439.7201**	**0.1437**		**3,443.3117**

3.3 Grading and improvements - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0338	0.0132	0.2352	8.4000e-004	0.1141	5.2000e-004	0.1146	0.0303	4.8000e-004	0.0308		83.7618	83.7618	1.2800e-003		83.7939
Total	**0.0338**	**0.0132**	**0.2352**	**8.4000e-004**	**0.1141**	**5.2000e-004**	**0.1146**	**0.0303**	**4.8000e-004**	**0.0308**		**83.7618**	**83.7618**	**1.2800e-003**		**83.7939**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7698	0.0000	2.7698	1.4961	0.0000	1.4961			0.0000			0.0000
Off-Road	1.6179	7.7501	14.4518	0.0363		0.2340	0.2340		0.2340	0.2340	0.0000	3,439.7201	3,439.7201	0.1437		3,443.3117
Total	**1.6179**	**7.7501**	**14.4518**	**0.0363**	**2.7698**	**0.2340**	**3.0038**	**1.4961**	**0.2340**	**1.7301**	**0.0000**	**3,439.7201**	**3,439.7201**	**0.1437**		**3,443.3117**

3.3 Grading and improvements - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0338	0.0132	0.2352	8.4000e-004	0.1052	5.2000e-004	0.1057	0.0281	4.8000e-004	0.0286		83.7618	83.7618	1.2800e-003		83.7939
Total	**0.0338**	**0.0132**	**0.2352**	**8.4000e-004**	**0.1052**	**5.2000e-004**	**0.1057**	**0.0281**	**4.8000e-004**	**0.0286**		**83.7618**	**83.7618**	**1.2800e-003**		**83.7939**

3.4 Paving - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3845	7.1202	15.8495	0.0281		0.3306	0.3306		0.3306	0.3306		2,656.5168	2,656.5168	0.1245		2,659.6302
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3845**	**7.1202**	**15.8495**	**0.0281**		**0.3306**	**0.3306**		**0.3306**	**0.3306**		**2,656.5168**	**2,656.5168**	**0.1245**		**2,659.6302**

3.4 Paving - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1014	0.0396	0.7057	2.5200e-003	0.9373	1.5700e-003	0.9388	0.2368	1.4500e-003	0.2383		251.2855	251.2855	3.8500e-003		251.3817
Total	**0.1014**	**0.0396**	**0.7057**	**2.5200e-003**	**0.9373**	**1.5700e-003**	**0.9388**	**0.2368**	**1.4500e-003**	**0.2383**		**251.2855**	**251.2855**	**3.8500e-003**		**251.3817**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3845	7.1202	15.8495	0.0281		0.3306	0.3306		0.3306	0.3306	0.0000	2,656.5168	2,656.5168	0.1245		2,659.6302
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3845**	**7.1202**	**15.8495**	**0.0281**		**0.3306**	**0.3306**		**0.3306**	**0.3306**	**0.0000**	**2,656.5168**	**2,656.5168**	**0.1245**		**2,659.6302**

3.4 Paving - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1014	0.0396	0.7057	2.5200e-003	0.8570	1.5700e-003	0.8585	0.2171	1.4500e-003	0.2186		251.2855	251.2855	3.8500e-003		251.3817
Total	**0.1014**	**0.0396**	**0.7057**	**2.5200e-003**	**0.8570**	**1.5700e-003**	**0.8585**	**0.2171**	**1.4500e-003**	**0.2186**		**251.2855**	**251.2855**	**3.8500e-003**		**251.3817**

3.5 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

3.5 Building Construction - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0430	1.7856	0.3768	5.7600e-003	0.1503	1.9300e-003	0.1522	0.0433	1.8400e-003	0.0451		612.6547	612.6547	0.0285		613.3673
Worker	0.3543	0.1380	2.5169	9.3500e-003	1.3008	5.5700e-003	1.3064	0.3451	5.1200e-003	0.3502		932.3088	932.3088	0.0134		932.6428
Total	**0.3972**	**1.9236**	**2.8937**	**0.0151**	**1.4511**	**7.5000e-003**	**1.4586**	**0.3883**	**6.9600e-003**	**0.3953**		**1,544.9635**	**1,544.9635**	**0.0419**		**1,546.0101**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

3.5 Building Construction - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0430	1.7856	0.3768	5.7600e-003	0.1407	1.9300e-003	0.1426	0.0409	1.8400e-003	0.0427		612.6547	612.6547	0.0285		613.3673
Worker	0.3543	0.1380	2.5169	9.3500e-003	1.1991	5.5700e-003	1.2046	0.3201	5.1200e-003	0.3252		932.3088	932.3088	0.0134		932.6428
Total	**0.3972**	**1.9236**	**2.8937**	**0.0151**	**1.3397**	**7.5000e-003**	**1.3472**	**0.3610**	**6.9600e-003**	**0.3679**		**1,544.9635**	**1,544.9635**	**0.0419**		**1,546.0101**

3.5 Building Construction - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

3.5 Building Construction - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0421	1.7652	0.3700	5.7400e-003	0.1503	1.8500e-003	0.1522	0.0432	1.7700e-003	0.0450		611.1096	611.1096	0.0283		611.8158
Worker	0.3262	0.1270	2.3717	9.1500e-003	1.3008	5.1800e-003	1.3060	0.3451	4.7600e-003	0.3498		912.6582	912.6582	0.0123		912.9648
Total	**0.3683**	**1.8922**	**2.7417**	**0.0149**	**1.4511**	**7.0300e-003**	**1.4581**	**0.3883**	**6.5300e-003**	**0.3948**		**1,523.7678**	**1,523.7678**	**0.0405**		**1,524.7806**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

3.5 Building Construction - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0421	1.7652	0.3700	5.7400e-003	0.1406	1.8500e-003	0.1425	0.0409	1.7700e-003	0.0426		611.1096	611.1096	0.0283		611.8158
Worker	0.3262	0.1270	2.3717	9.1500e-003	1.1991	5.1800e-003	1.2042	0.3201	4.7600e-003	0.3248		912.6582	912.6582	0.0123		912.9648
Total	**0.3683**	**1.8922**	**2.7417**	**0.0149**	**1.3397**	**7.0300e-003**	**1.3467**	**0.3610**	**6.5300e-003**	**0.3675**		**1,523.7678**	**1,523.7678**	**0.0405**		**1,524.7806**

3.6 Architectural Coating - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	17.1640					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**17.2947**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0603	0.0235	0.4472	1.7800e-003	0.2586	9.6000e-004	0.2596	0.0686	8.8000e-004	0.0695		178.0956	178.0956	2.2600e-003		178.1520
Total	**0.0603**	**0.0235**	**0.4472**	**1.7800e-003**	**0.2586**	**9.6000e-004**	**0.2596**	**0.0686**	**8.8000e-004**	**0.0695**		**178.0956**	**178.0956**	**2.2600e-003**		**178.1520**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	17.1640					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**17.2947**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0603	0.0235	0.4472	1.7800e-003	0.2384	9.6000e-004	0.2394	0.0636	8.8000e-004	0.0645		178.0956	178.0956	2.2600e-003		178.1520
Total	**0.0603**	**0.0235**	**0.4472**	**1.7800e-003**	**0.2384**	**9.6000e-004**	**0.2394**	**0.0636**	**8.8000e-004**	**0.0645**		**178.0956**	**178.0956**	**2.2600e-003**		**178.1520**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.5374	6.0865	15.9394	0.0714	8.0538	0.0338	8.0876	2.1502	0.0314	2.1817		7,271.9791	7,271.9791	0.2487		7,278.1968
Unmitigated	1.5374	6.0865	15.9394	0.0714	8.0538	0.0338	8.0876	2.1502	0.0314	2.1817		7,271.9791	7,271.9791	0.2487		7,278.1968

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,429.75	1,373.85	1259.90	3,586,137	3,586,137
Retirement Community	52.80	44.66	42.90	128,877	128,877
Total	1,482.55	1,418.51	1,302.80	3,715,015	3,715,015

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0698	0.5964	0.2538	3.8100e-003		0.0482	0.0482		0.0482	0.0482		761.3258	761.3258	0.0146	0.0140	765.8500
NaturalGas Unmitigated	0.0698	0.5964	0.2538	3.8100e-003		0.0482	0.0482		0.0482	0.0482		761.3258	761.3258	0.0146	0.0140	765.8500

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	5742.03	0.0619	0.5292	0.2252	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5331	675.5331	0.0130	0.0124	679.5475
Retirement Community	729.238	7.8600e-003	0.0672	0.0286	4.3000e-004		5.4300e-003	5.4300e-003		5.4300e-003	5.4300e-003		85.7927	85.7927	1.6400e-003	1.5700e-003	86.3025
Total		**0.0698**	**0.5964**	**0.2538**	**3.8100e-003**		**0.0482**	**0.0482**		**0.0482**	**0.0482**		**761.3258**	**761.3258**	**0.0146**	**0.0140**	**765.8500**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	5.74203	0.0619	0.5292	0.2252	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5331	675.5331	0.0130	0.0124	679.5475
Retirement Community	0.729238	7.8600e-003	0.0672	0.0286	4.3000e-004		5.4300e-003	5.4300e-003		5.4300e-003	5.4300e-003		85.7927	85.7927	1.6400e-003	1.5700e-003	86.3025
Total		**0.0698**	**0.5964**	**0.2538**	**3.8100e-003**		**0.0482**	**0.0482**		**0.0482**	**0.0482**		**761.3258**	**761.3258**	**0.0146**	**0.0140**	**765.8500**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.4670	0.2248	19.4841	1.0300e-003		0.1084	0.1084		0.1084	0.1084	0.0000	35.2069	35.2069	0.0335	0.0000	36.0448
Unmitigated	6.4670	0.2248	19.4841	1.0300e-003		0.1084	0.1084		0.1084	0.1084	0.0000	35.2069	35.2069	0.0335	0.0000	36.0448

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.8126					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.0718					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5826	0.2248	19.4841	1.0300e-003		0.1084	0.1084		0.1084	0.1084		35.2069	35.2069	0.0335		36.0448
Total	**6.4670**	**0.2248**	**19.4841**	**1.0300e-003**		**0.1084**	**0.1084**		**0.1084**	**0.1084**	**0.0000**	**35.2069**	**35.2069**	**0.0335**	**0.0000**	**36.0448**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.8126					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.0718					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5826	0.2248	19.4841	1.0300e-003		0.1084	0.1084		0.1084	0.1084		35.2069	35.2069	0.0335		36.0448
Total	**6.4670**	**0.2248**	**19.4841**	**1.0300e-003**		**0.1084**	**0.1084**		**0.1084**	**0.1084**	**0.0000**	**35.2069**	**35.2069**	**0.0335**	**0.0000**	**36.0448**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

The Ranch - City of Rancho Cordova (Construction Only - Phase 4)

Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	215.00	Dwelling Unit	7.17	215,000.00	621
Retirement Community	22.00	Dwelling Unit	0.73	22,000.00	45

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Estimated construction start date for Phase 4 of March 2030 (provided by Applicant).

Land Use - This model run provides construction emissions only.

Construction Phase - Phase 4

Off-road Equipment -

Off-road Equipment - For building construction, assumes 1 crane, 2 forklifts, 1 generator set, 1 tractor/loader/backhoe, and 1 welder (as provided by the applicant)

Off-road Equipment -

Off-road Equipment - D

Off-road Equipment -

Trips and VMT - Assume grading truck haul length = 7 miles (Sacramento dump site).
Grading - Assume 10.66 acres grading during this phase, based on project components to be built during this phase. Net export of cut and fill is 25,451 cy.

Architectural Coating - Assumes interior coatings use flat coatings.

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust -

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 28.33% - reflects project person/du value (2.523) vs. statewide avg. (2.97) and latest statewide data (ARB). Parking Degreaser EF red. by 57.5% (corrects for walking paths modeled as 'parking lot').

Area Coating -

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	41.00
tblConstructionPhase	NumDays	20.00	85.00
tblConstructionPhase	NumDays	20.00	65.00
tblConstructionPhase	NumDays	230.00	459.00
tblConstructionPhase	NumDays	20.00	108.00
tblGrading	AcresOfGrading	42.50	10.66
tblGrading	MaterialExported	0.00	25,451.00
tblLandUse	LotAcreage	5.66	7.17
tblLandUse	LotAcreage	4.40	0.73
tblLandUse	Population	574.00	621.00
tblLandUse	Population	59.00	45.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	7.00
tblTripsAndVMT	HaulingTripNumber	2,516.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2030	3.1295	14.9354	31.0803	0.0673	18.2032	0.5667	18.6405	9.9670	0.5666	10.4042	0.0000	6,390.4638	6,390.4638	0.2726	0.0000	6,397.2795
2031	1.6879	9.9047	18.6639	0.0448	1.4511	0.1557	1.6068	0.3883	0.1552	0.5435	0.0000	4,313.4743	4,313.4743	0.1585	0.0000	4,317.4371
2032	1.6610	9.8704	18.5279	0.0446	1.4511	0.1553	1.6064	0.3883	0.1548	0.5430	0.0000	4,294.6102	4,294.6102	0.1573	0.0000	4,298.5415
2033	17.3517	0.8851	2.1636	4.5400e-003	0.2586	0.0213	0.2799	0.0686	0.0212	0.0898	0.0000	437.7724	437.7724	0.0133	0.0000	438.1055
Maximum	**17.3517**	**14.9354**	**31.0803**	**0.0673**	**18.2032**	**0.5667**	**18.6405**	**9.9670**	**0.5666**	**10.4042**	**0.0000**	**6,390.4638**	**6,390.4638**	**0.2726**	**0.0000**	**6,397.2795**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2030	3.1295	14.9354	31.0803	0.0673	8.2560	0.5667	8.6933	4.5025	0.5666	4.9397	0.0000	6,390.4638	6,390.4638	0.2726	0.0000	6,397.2795
2031	1.6879	9.9047	18.6639	0.0448	1.3397	0.1557	1.4954	0.3610	0.1552	0.5161	0.0000	4,313.4743	4,313.4743	0.1585	0.0000	4,317.4371
2032	1.6610	9.8704	18.5279	0.0446	1.3397	0.1553	1.4950	0.3610	0.1548	0.5157	0.0000	4,294.6102	4,294.6102	0.1573	0.0000	4,298.5415
2033	17.3517	0.8851	2.1636	4.5400e-003	0.2384	0.0213	0.2597	0.0636	0.0212	0.0848	0.0000	437.7724	437.7724	0.0133	0.0000	438.1054
Maximum	**17.3517**	**14.9354**	**31.0803**	**0.0673**	**8.2560**	**0.5667**	**8.6933**	**4.5025**	**0.5666**	**4.9397**	**0.0000**	**6,390.4638**	**6,390.4638**	**0.2726**	**0.0000**	**6,397.2795**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**47.70**	**0.00**	**46.04**	**51.09**	**0.00**	**47.70**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.4670	0.2248	19.4841	1.0300e-003		0.1084	0.1084		0.1084	0.1084	0.0000	35.2069	35.2069	0.0335	0.0000	36.0448
Energy	0.0698	0.5964	0.2538	3.8100e-003		0.0482	0.0482		0.0482	0.0482		761.3258	761.3258	0.0146	0.0140	765.8500
Mobile	1.1182	6.3338	14.3936	0.0648	8.0538	0.0340	8.0878	2.1502	0.0316	2.1818		6,608.6976	6,608.6976	0.2522		6,615.0022
Total	**7.6549**	**7.1549**	**34.1314**	**0.0696**	**8.0538**	**0.1906**	**8.2444**	**2.1502**	**0.1882**	**2.3385**	**0.0000**	**7,405.2303**	**7,405.2303**	**0.3003**	**0.0140**	**7,416.8970**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.4670	0.2248	19.4841	1.0300e-003		0.1084	0.1084		0.1084	0.1084	0.0000	35.2069	35.2069	0.0335	0.0000	36.0448
Energy	0.0698	0.5964	0.2538	3.8100e-003		0.0482	0.0482		0.0482	0.0482		761.3258	761.3258	0.0146	0.0140	765.8500
Mobile	1.1182	6.3338	14.3936	0.0648	8.0538	0.0340	8.0878	2.1502	0.0316	2.1818		6,608.6976	6,608.6976	0.2522		6,615.0022
Total	**7.6549**	**7.1549**	**34.1314**	**0.0696**	**8.0538**	**0.1906**	**8.2444**	**2.1502**	**0.1882**	**2.3385**	**0.0000**	**7,405.2303**	**7,405.2303**	**0.3003**	**0.0140**	**7,416.8970**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation for Commercial and MFR	Site Preparation	3/1/2030	4/26/2030	5	41	
2	Grading and improvements	Grading	4/28/2030	8/23/2030	5	85	
3	Paving	Paving	8/2/2030	10/31/2030	5	65	
4	Building Construction	Building Construction	4/1/2031	12/31/2032	5	459	
5	Architectural Coating	Architectural Coating	1/2/2033	6/1/2033	5	108	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 479,925; Residential Outdoor: 159,975; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

The Ranch - City of Rancho Cordova (Construction Only - Phase 4) - Sacramento County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation for Commercial and MFR	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation for Commercial and MFR	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading and improvements	Excavators	1	8.00	158	0.38
Grading and improvements	Graders	1	8.00	187	0.41
Grading and improvements	Rubber Tired Dozers	1	8.00	247	0.40
Grading and improvements	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation for Commercial and MFR	7	18.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Grading and improvements	6	15.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	171.00	25.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	34.00	0.00	0.00	10.00	6.50	7.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation for Commercial and MFR - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.4399	13.6680	16.2918	0.0466		0.4367	0.4367		0.4367	0.4367		4,409.7537	4,409.7537	0.2176		4,415.1936
Total	**2.4399**	**13.6680**	**16.2918**	**0.0466**	**18.0663**	**0.4367**	**18.5029**	**9.9307**	**0.4367**	**10.3673**		**4,409.7537**	**4,409.7537**	**0.2176**		**4,415.1936**

3.2 Site Preparation for Commercial and MFR - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0381	0.0195	0.2337	8.8000e-004	0.1369	6.3000e-004	0.1376	0.0363	5.8000e-004	0.0369		88.2681	88.2681	1.3300e-003		88.3013
Total	**0.0381**	**0.0195**	**0.2337**	**8.8000e-004**	**0.1369**	**6.3000e-004**	**0.1376**	**0.0363**	**5.8000e-004**	**0.0369**		**88.2681**	**88.2681**	**1.3300e-003**		**88.3013**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	2.4399	13.6680	16.2918	0.0466		0.4367	0.4367		0.4367	0.4367	0.0000	4,409.7537	4,409.7537	0.2176		4,415.1936
Total	**2.4399**	**13.6680**	**16.2918**	**0.0466**	**8.1298**	**0.4367**	**8.5665**	**4.4688**	**0.4367**	**4.9055**	**0.0000**	**4,409.7537**	**4,409.7537**	**0.2176**		**4,415.1936**

3.2 Site Preparation for Commercial and MFR - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0381	0.0195	0.2337	8.8000e-004	0.1262	6.3000e-004	0.1269	0.0337	5.8000e-004	0.0343		88.2681	88.2681	1.3300e-003		88.3013
Total	**0.0381**	**0.0195**	**0.2337**	**8.8000e-004**	**0.1262**	**6.3000e-004**	**0.1269**	**0.0337**	**5.8000e-004**	**0.0343**		**88.2681**	**88.2681**	**1.3300e-003**		**88.3013**

3.3 Grading and improvements - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1551	0.0000	6.1551	3.3246	0.0000	3.3246			0.0000			0.0000
Off-Road	1.6179	7.7501	14.4518	0.0363		0.2340	0.2340		0.2340	0.2340		3,439.7201	3,439.7201	0.1437		3,443.3117
Total	**1.6179**	**7.7501**	**14.4518**	**0.0363**	**6.1551**	**0.2340**	**6.3891**	**3.3246**	**0.2340**	**3.5586**		**3,439.7201**	**3,439.7201**	**0.1437**		**3,443.3117**

3.3 Grading and improvements - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0318	0.0163	0.1948	7.4000e-004	0.1141	5.2000e-004	0.1146	0.0303	4.8000e-004	0.0308		73.5567	73.5567	1.1100e-003		73.5844
Total	**0.0318**	**0.0163**	**0.1948**	**7.4000e-004**	**0.1141**	**5.2000e-004**	**0.1146**	**0.0303**	**4.8000e-004**	**0.0308**		**73.5567**	**73.5567**	**1.1100e-003**		**73.5844**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7698	0.0000	2.7698	1.4961	0.0000	1.4961			0.0000			0.0000
Off-Road	1.6179	7.7501	14.4518	0.0363		0.2340	0.2340		0.2340	0.2340	0.0000	3,439.7201	3,439.7201	0.1437		3,443.3117
Total	**1.6179**	**7.7501**	**14.4518**	**0.0363**	**2.7698**	**0.2340**	**3.0038**	**1.4961**	**0.2340**	**1.7301**	**0.0000**	**3,439.7201**	**3,439.7201**	**0.1437**		**3,443.3117**

3.3 Grading and improvements - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0318	0.0163	0.1948	7.4000e-004	0.1052	5.2000e-004	0.1057	0.0281	4.8000e-004	0.0286		73.5567	73.5567	1.1100e-003		73.5844
Total	**0.0318**	**0.0163**	**0.1948**	**7.4000e-004**	**0.1052**	**5.2000e-004**	**0.1057**	**0.0281**	**4.8000e-004**	**0.0286**		**73.5567**	**73.5567**	**1.1100e-003**		**73.5844**

3.4 Paving - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3845	7.1202	15.8495	0.0281		0.3306	0.3306		0.3306	0.3306		2,656.5168	2,656.5168	0.1245		2,659.6302
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3845**	**7.1202**	**15.8495**	**0.0281**		**0.3306**	**0.3306**		**0.3306**	**0.3306**		**2,656.5168**	**2,656.5168**	**0.1245**		**2,659.6302**

3.4 Paving - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0953	0.0488	0.5843	2.2100e-003	0.9373	1.5700e-003	0.9388	0.2368	1.4500e-003	0.2383		220.6702	220.6702	3.3200e-003		220.7533
Total	**0.0953**	**0.0488**	**0.5843**	**2.2100e-003**	**0.9373**	**1.5700e-003**	**0.9388**	**0.2368**	**1.4500e-003**	**0.2383**		**220.6702**	**220.6702**	**3.3200e-003**		**220.7533**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3845	7.1202	15.8495	0.0281		0.3306	0.3306		0.3306	0.3306	0.0000	2,656.5168	2,656.5168	0.1245		2,659.6302
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3845**	**7.1202**	**15.8495**	**0.0281**		**0.3306**	**0.3306**		**0.3306**	**0.3306**	**0.0000**	**2,656.5168**	**2,656.5168**	**0.1245**		**2,659.6302**

3.4 Paving - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0953	0.0488	0.5843	2.2100e-003	0.8570	1.5700e-003	0.8585	0.2171	1.4500e-003	0.2186		220.6702	220.6702	3.3200e-003		220.7533
Total	**0.0953**	**0.0488**	**0.5843**	**2.2100e-003**	**0.8570**	**1.5700e-003**	**0.8585**	**0.2171**	**1.4500e-003**	**0.2186**		**220.6702**	**220.6702**	**3.3200e-003**		**220.7533**

3.5 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

3.5 Building Construction - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0454	1.8006	0.4318	5.6200e-003	0.1503	2.0100e-003	0.1523	0.0433	1.9200e-003	0.0452		597.3425	597.3425	0.0308		598.1115
Worker	0.3333	0.1695	2.0751	8.2000e-003	1.3008	5.5700e-003	1.3064	0.3451	5.1200e-003	0.3502		818.5851	818.5851	0.0115		818.8727
Total	**0.3787**	**1.9700**	**2.5069**	**0.0138**	**1.4511**	**7.5800e-003**	**1.4587**	**0.3883**	**7.0400e-003**	**0.3953**		**1,415.9276**	**1,415.9276**	**0.0423**		**1,416.9842**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

3.5 Building Construction - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0454	1.8006	0.4318	5.6200e-003	0.1407	2.0100e-003	0.1427	0.0409	1.9200e-003	0.0428		597.3425	597.3425	0.0308		598.1115
Worker	0.3333	0.1695	2.0751	8.2000e-003	1.1991	5.5700e-003	1.2046	0.3201	5.1200e-003	0.3252		818.5851	818.5851	0.0115		818.8727
Total	**0.3787**	**1.9700**	**2.5069**	**0.0138**	**1.3397**	**7.5800e-003**	**1.3473**	**0.3610**	**7.0400e-003**	**0.3680**		**1,415.9276**	**1,415.9276**	**0.0423**		**1,416.9842**

3.5 Building Construction - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

3.5 Building Construction - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0445	1.7799	0.4236	5.6000e-003	0.1503	1.9300e-003	0.1522	0.0432	1.8400e-003	0.0451		595.8603	595.8603	0.0305		596.6223
Worker	0.3074	0.1558	1.9474	8.0300e-003	1.3008	5.1800e-003	1.3060	0.3451	4.7600e-003	0.3498		801.2032	801.2032	0.0105		801.4663
Total	**0.3519**	**1.9358**	**2.3710**	**0.0136**	**1.4511**	**7.1100e-003**	**1.4582**	**0.3883**	**6.6000e-003**	**0.3949**		**1,397.0635**	**1,397.0635**	**0.0410**		**1,398.0887**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

3.5 Building Construction - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0445	1.7799	0.4236	5.6000e-003	0.1406	1.9300e-003	0.1426	0.0409	1.8400e-003	0.0427		595.8603	595.8603	0.0305		596.6223
Worker	0.3074	0.1558	1.9474	8.0300e-003	1.1991	5.1800e-003	1.2042	0.3201	4.7600e-003	0.3248		801.2032	801.2032	0.0105		801.4663
Total	**0.3519**	**1.9358**	**2.3710**	**0.0136**	**1.3397**	**7.1100e-003**	**1.3468**	**0.3610**	**6.6000e-003**	**0.3676**		**1,397.0635**	**1,397.0635**	**0.0410**		**1,398.0887**

3.6 Architectural Coating - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	17.1640					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**17.2947**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0569	0.0288	0.3658	1.5700e-003	0.2586	9.6000e-004	0.2596	0.0686	8.8000e-004	0.0695		156.3244	156.3244	1.9300e-003		156.3726
Total	**0.0569**	**0.0288**	**0.3658**	**1.5700e-003**	**0.2586**	**9.6000e-004**	**0.2596**	**0.0686**	**8.8000e-004**	**0.0695**		**156.3244**	**156.3244**	**1.9300e-003**		**156.3726**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	17.1640					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**17.2947**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0569	0.0288	0.3658	1.5700e-003	0.2384	9.6000e-004	0.2394	0.0636	8.8000e-004	0.0645		156.3244	156.3244	1.9300e-003		156.3726
Total	**0.0569**	**0.0288**	**0.3658**	**1.5700e-003**	**0.2384**	**9.6000e-004**	**0.2394**	**0.0636**	**8.8000e-004**	**0.0645**		**156.3244**	**156.3244**	**1.9300e-003**		**156.3726**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.1182	6.3338	14.3936	0.0648	8.0538	0.0340	8.0878	2.1502	0.0316	2.1818		6,608.6976	6,608.6976	0.2522		6,615.0022
Unmitigated	1.1182	6.3338	14.3936	0.0648	8.0538	0.0340	8.0878	2.1502	0.0316	2.1818		6,608.6976	6,608.6976	0.2522		6,615.0022

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,429.75	1,373.85	1259.90	3,586,137	3,586,137
Retirement Community	52.80	44.66	42.90	128,877	128,877
Total	1,482.55	1,418.51	1,302.80	3,715,015	3,715,015

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0698	0.5964	0.2538	3.8100e-003		0.0482	0.0482		0.0482	0.0482		761.3258	761.3258	0.0146	0.0140	765.8500
NaturalGas Unmitigated	0.0698	0.5964	0.2538	3.8100e-003		0.0482	0.0482		0.0482	0.0482		761.3258	761.3258	0.0146	0.0140	765.8500

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	5742.03	0.0619	0.5292	0.2252	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5331	675.5331	0.0130	0.0124	679.5475
Retirement Community	729.238	7.8600e-003	0.0672	0.0286	4.3000e-004		5.4300e-003	5.4300e-003		5.4300e-003	5.4300e-003		85.7927	85.7927	1.6400e-003	1.5700e-003	86.3025
Total		**0.0698**	**0.5964**	**0.2538**	**3.8100e-003**		**0.0482**	**0.0482**		**0.0482**	**0.0482**		**761.3258**	**761.3258**	**0.0146**	**0.0140**	**765.8500**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	5.74203	0.0619	0.5292	0.2252	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5331	675.5331	0.0130	0.0124	679.5475
Retirement Community	0.729238	7.8600e-003	0.0672	0.0286	4.3000e-004		5.4300e-003	5.4300e-003		5.4300e-003	5.4300e-003		85.7927	85.7927	1.6400e-003	1.5700e-003	86.3025
Total		**0.0698**	**0.5964**	**0.2538**	**3.8100e-003**		**0.0482**	**0.0482**		**0.0482**	**0.0482**		**761.3258**	**761.3258**	**0.0146**	**0.0140**	**765.8500**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.4670	0.2248	19.4841	1.0300e-003		0.1084	0.1084		0.1084	0.1084	0.0000	35.2069	35.2069	0.0335	0.0000	36.0448
Unmitigated	6.4670	0.2248	19.4841	1.0300e-003		0.1084	0.1084		0.1084	0.1084	0.0000	35.2069	35.2069	0.0335	0.0000	36.0448

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.8126					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.0718					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5826	0.2248	19.4841	1.0300e-003		0.1084	0.1084		0.1084	0.1084		35.2069	35.2069	0.0335		36.0448
Total	**6.4670**	**0.2248**	**19.4841**	**1.0300e-003**		**0.1084**	**0.1084**		**0.1084**	**0.1084**	**0.0000**	**35.2069**	**35.2069**	**0.0335**	**0.0000**	**36.0448**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.8126					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.0718					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5826	0.2248	19.4841	1.0300e-003		0.1084	0.1084		0.1084	0.1084		35.2069	35.2069	0.0335		36.0448
Total	**6.4670**	**0.2248**	**19.4841**	**1.0300e-003**		**0.1084**	**0.1084**		**0.1084**	**0.1084**	**0.0000**	**35.2069**	**35.2069**	**0.0335**	**0.0000**	**36.0448**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

The Ranch - City of Rancho Cordova (Construction Only - Phase 5)

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Regional Shopping Center	32.00	1000sqft	5.16	32,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Estimated construction start date for Phase 5 of March 2034 (provided by Applicant).

Land Use - This model run provides construction emissions only.

Construction Phase - Phase 5

Off-road Equipment -

Off-road Equipment - For building construction, assumes 1 crane, 2 forklifts, 1 generator set, 1 tractor/loader/backhoe, and 1 welder (as provided by the applicant)

Off-road Equipment -

Off-road Equipment - D

Off-road Equipment -

Trips and VMT - Assume grading truck haul length = 7 miles (Sacramento dump site).

Grading - Assume 6.96 acres grading during this phase, based on project components to be built during this phase. Net export of cut and fill during this phase is 25,451 cy.

Architectural Coating - It was assumed that flat coatings are used for interior coatings.

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust -

Woodstoves - No fireplaces.

Consumer Products -

Area Coating -

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	42.00
tblConstructionPhase	NumDays	20.00	67.00
tblConstructionPhase	NumDays	20.00	24.00
tblConstructionPhase	NumDays	230.00	260.00
tblConstructionPhase	NumDays	20.00	86.00
tblConstructionPhase	PhaseEndDate	3/14/2034	4/27/2034
tblConstructionPhase	PhaseEndDate	4/11/2034	7/31/2034
tblConstructionPhase	PhaseEndDate	3/27/2035	9/1/2034
tblConstructionPhase	PhaseEndDate	2/27/2035	9/28/2035
tblConstructionPhase	PhaseEndDate	4/24/2035	12/31/2035
tblConstructionPhase	PhaseStartDate	3/15/2034	4/28/2034
tblConstructionPhase	PhaseStartDate	2/28/2035	8/1/2034
tblConstructionPhase	PhaseStartDate	4/12/2034	10/1/2034
tblConstructionPhase	PhaseStartDate	3/28/2035	9/1/2035
tblGrading	AcresOfGrading	33.50	6.96
tblGrading	MaterialExported	0.00	25,451.00
tblLandUse	LotAcreage	0.73	5.16
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblTripsAndVMT	HaulingTripNumber	3,181.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2034	0.1674	0.9026	1.5620	3.6600e-003	0.6081	0.0259	0.6339	0.3256	0.0258	0.3515	0.0000	313.8175	313.8175	0.0136	0.0000	314.1562
2035	0.2187	0.7653	1.6664	3.3000e-003	0.0106	9.3000e-003	0.0199	2.9000e-003	9.3000e-003	0.0122	0.0000	282.3236	282.3236	0.0105	0.0000	282.5862
Maximum	**0.2187**	**0.9026**	**1.6664**	**3.6600e-003**	**0.6081**	**0.0259**	**0.6339**	**0.3256**	**0.0258**	**0.3515**	**0.0000**	**313.8175**	**313.8175**	**0.0136**	**0.0000**	**314.1562**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2034	0.1674	0.9026	1.5620	3.6600e-003	0.2833	0.0259	0.3092	0.1491	0.0258	0.1749	0.0000	313.8171	313.8171	0.0136	0.0000	314.1558
2035	0.2187	0.7653	1.6664	3.3000e-003	9.8500e-003	9.3000e-003	0.0192	2.7000e-003	9.3000e-003	0.0120	0.0000	282.3232	282.3232	0.0105	0.0000	282.5859
Maximum	**0.2187**	**0.9026**	**1.6664**	**3.6600e-003**	**0.2833**	**0.0259**	**0.3092**	**0.1491**	**0.0258**	**0.1749**	**0.0000**	**313.8171**	**313.8171**	**0.0136**	**0.0000**	**314.1558**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**52.62**	**0.00**	**49.79**	**53.80**	**0.00**	**48.60**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	3-1-2034	5-31-2034	0.4487	0.4487
2	6-1-2034	8-31-2034	0.3001	0.3001
3	9-1-2034	11-30-2034	0.2128	0.2128
4	12-1-2034	2-28-2035	0.2910	0.2910
5	3-1-2035	5-31-2035	0.2876	0.2876
6	6-1-2035	8-31-2035	0.2875	0.2875
7	9-1-2035	9-30-2035	0.1200	0.1200
		Highest	0.4487	0.4487

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1399	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.9000e-004	7.9000e-004	0.0000	0.0000	8.5000e-004
Energy	9.4000e-004	8.5000e-003	7.1400e-003	5.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	108.3909	108.3909	5.0500e-003	1.1800e-003	108.8680
Mobile	0.1587	0.8344	1.4414	6.1900e-003	0.6863	3.3600e-003	0.6897	0.1838	3.1200e-003	0.1869	0.0000	573.1534	573.1534	0.0238	0.0000	573.7474
Waste						0.0000	0.0000		0.0000	0.0000	6.8205	0.0000	6.8205	0.4031	0.0000	16.8975
Water						0.0000	0.0000		0.0000	0.0000	0.8386	4.5238	5.3625	3.1100e-003	1.8700e-003	5.9973
Total	**0.2995**	**0.8429**	**1.4490**	**6.2400e-003**	**0.6863**	**4.0100e-003**	**0.6903**	**0.1838**	**3.7700e-003**	**0.1875**	**7.6591**	**686.0690**	**693.7281**	**0.4350**	**3.0500e-003**	**705.5111**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1399	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.9000e-004	7.9000e-004	0.0000	0.0000	8.5000e-004
Energy	9.4000e-004	8.5000e-003	7.1400e-003	5.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	108.3909	108.3909	5.0500e-003	1.1800e-003	108.8680
Mobile	0.1587	0.8344	1.4414	6.1900e-003	0.6863	3.3600e-003	0.6897	0.1838	3.1200e-003	0.1869	0.0000	573.1534	573.1534	0.0238	0.0000	573.7474
Waste						0.0000	0.0000		0.0000	0.0000	6.8205	0.0000	6.8205	0.4031	0.0000	16.8975
Water						0.0000	0.0000		0.0000	0.0000	0.8386	4.5238	5.3625	3.1100e-003	1.8700e-003	5.9973
Total	**0.2995**	**0.8429**	**1.4490**	**6.2400e-003**	**0.6863**	**4.0100e-003**	**0.6903**	**0.1838**	**3.7700e-003**	**0.1875**	**7.6591**	**686.0690**	**693.7281**	**0.4350**	**3.0500e-003**	**705.5111**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	1,585.9200
Vegetation Land Change	-1,057.2430
Total	**528.6770**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation for Commercial and MFR	Site Preparation	3/1/2034	4/27/2034	5	42	
2	Grading and improvements	Grading	4/28/2034	7/31/2034	5	67	
3	Building Construction	Building Construction	10/1/2034	9/28/2035	5	260	
4	Paving	Paving	8/1/2034	9/1/2034	5	24	
5	Architectural Coating	Architectural Coating	9/1/2035	12/31/2035	5	86	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 48,000; Non-Residential Outdoor: 16,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading and improvements	Excavators	1	8.00	158	0.38
Grading and improvements	Graders	1	8.00	187	0.41
Grading and improvements	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation for Commercial and MFR	Rubber Tired Dozers	3	8.00	247	0.40
Grading and improvements	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation for Commercial and MFR	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	10.00	5.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading and improvements	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation for Commercial and MFR	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation for Commercial and MFR - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3794	0.0000	0.3794	0.2085	0.0000	0.2085	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0512	0.2870	0.3421	9.8000e-004		9.1700e-003	9.1700e-003		9.1700e-003	9.1700e-003	0.0000	84.0097	84.0097	4.1500e-003	0.0000	84.1133
Total	**0.0512**	**0.2870**	**0.3421**	**9.8000e-004**	**0.3794**	**9.1700e-003**	**0.3886**	**0.2085**	**9.1700e-003**	**0.2177**	**0.0000**	**84.0097**	**84.0097**	**4.1500e-003**	**0.0000**	**84.1133**

3.2 Site Preparation for Commercial and MFR - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.5000e-004	2.7000e-004	3.8900e-003	2.0000e-005	2.7800e-003	1.0000e-005	2.7900e-003	7.4000e-004	1.0000e-005	7.5000e-004	0.0000	1.5964	1.5964	2.0000e-005	0.0000	1.5969
Total	**5.5000e-004**	**2.7000e-004**	**3.8900e-003**	**2.0000e-005**	**2.7800e-003**	**1.0000e-005**	**2.7900e-003**	**7.4000e-004**	**1.0000e-005**	**7.5000e-004**	**0.0000**	**1.5964**	**1.5964**	**2.0000e-005**	**0.0000**	**1.5969**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1707	0.0000	0.1707	0.0938	0.0000	0.0938	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0512	0.2870	0.3421	9.8000e-004		9.1700e-003	9.1700e-003		9.1700e-003	9.1700e-003	0.0000	84.0096	84.0096	4.1500e-003	0.0000	84.1132
Total	**0.0512**	**0.2870**	**0.3421**	**9.8000e-004**	**0.1707**	**9.1700e-003**	**0.1799**	**0.0938**	**9.1700e-003**	**0.1030**	**0.0000**	**84.0096**	**84.0096**	**4.1500e-003**	**0.0000**	**84.1132**

3.2 Site Preparation for Commercial and MFR - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.5000e-004	2.7000e-004	3.8900e-003	2.0000e-005	2.5600e-003	1.0000e-005	2.5700e-003	6.9000e-004	1.0000e-005	6.9000e-004	0.0000	1.5964	1.5964	2.0000e-005	0.0000	1.5969
Total	**5.5000e-004**	**2.7000e-004**	**3.8900e-003**	**2.0000e-005**	**2.5600e-003**	**1.0000e-005**	**2.5700e-003**	**6.9000e-004**	**1.0000e-005**	**6.9000e-004**	**0.0000**	**1.5964**	**1.5964**	**2.0000e-005**	**0.0000**	**1.5969**

3.3 Grading and improvements - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2081	0.0000	0.2081	0.1117	0.0000	0.1117	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0542	0.2596	0.4841	1.2200e-003		7.8400e-003	7.8400e-003		7.8400e-003	7.8400e-003	0.0000	104.5355	104.5355	4.3700e-003	0.0000	104.6446
Total	**0.0542**	**0.2596**	**0.4841**	**1.2200e-003**	**0.2081**	**7.8400e-003**	**0.2159**	**0.1117**	**7.8400e-003**	**0.1195**	**0.0000**	**104.5355**	**104.5355**	**4.3700e-003**	**0.0000**	**104.6446**

3.3 Grading and improvements - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3000e-004	3.6000e-004	5.1700e-003	2.0000e-005	3.6900e-003	1.0000e-005	3.7000e-003	9.8000e-004	1.0000e-005	9.9000e-004	0.0000	2.1222	2.1222	2.0000e-005	0.0000	2.1228
Total	**7.3000e-004**	**3.6000e-004**	**5.1700e-003**	**2.0000e-005**	**3.6900e-003**	**1.0000e-005**	**3.7000e-003**	**9.8000e-004**	**1.0000e-005**	**9.9000e-004**	**0.0000**	**2.1222**	**2.1222**	**2.0000e-005**	**0.0000**	**2.1228**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0936	0.0000	0.0936	0.0503	0.0000	0.0503	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0542	0.2596	0.4841	1.2200e-003		7.8400e-003	7.8400e-003		7.8400e-003	7.8400e-003	0.0000	104.5353	104.5353	4.3700e-003	0.0000	104.6445
Total	**0.0542**	**0.2596**	**0.4841**	**1.2200e-003**	**0.0936**	**7.8400e-003**	**0.1015**	**0.0503**	**7.8400e-003**	**0.0581**	**0.0000**	**104.5353**	**104.5353**	**4.3700e-003**	**0.0000**	**104.6445**

3.3 Grading and improvements - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3000e-004	3.6000e-004	5.1700e-003	2.0000e-005	3.4000e-003	1.0000e-005	3.4200e-003	9.1000e-004	1.0000e-005	9.2000e-004	0.0000	2.1222	2.1222	2.0000e-005	0.0000	2.1228
Total	**7.3000e-004**	**3.6000e-004**	**5.1700e-003**	**2.0000e-005**	**3.4000e-003**	**1.0000e-005**	**3.4200e-003**	**9.1000e-004**	**1.0000e-005**	**9.2000e-004**	**0.0000**	**2.1222**	**2.1222**	**2.0000e-005**	**0.0000**	**2.1228**

3.4 Building Construction - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0426	0.2579	0.5251	1.0100e-003		4.8100e-003	4.8100e-003		4.8100e-003	4.8100e-003	0.0000	85.4298	85.4298	3.4300e-003	0.0000	85.5155
Total	**0.0426**	**0.2579**	**0.5251**	**1.0100e-003**		**4.8100e-003**	**4.8100e-003**		**4.8100e-003**	**4.8100e-003**	**0.0000**	**85.4298**	**85.4298**	**3.4300e-003**	**0.0000**	**85.5155**

3.4 Building Construction - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.7000e-004	0.0114	2.4700e-003	4.0000e-005	9.5000e-004	1.0000e-005	9.6000e-004	2.7000e-004	1.0000e-005	2.9000e-004	0.0000	3.5514	3.5514	1.7000e-004	0.0000	3.5556
Worker	4.7000e-004	2.3000e-004	3.3400e-003	2.0000e-005	2.3900e-003	1.0000e-005	2.4000e-003	6.3000e-004	1.0000e-005	6.4000e-004	0.0000	1.3726	1.3726	2.0000e-005	0.0000	1.3730
Total	**7.4000e-004**	**0.0116**	**5.8100e-003**	**6.0000e-005**	**3.3400e-003**	**2.0000e-005**	**3.3600e-003**	**9.0000e-004**	**2.0000e-005**	**9.3000e-004**	**0.0000**	**4.9239**	**4.9239**	**1.9000e-004**	**0.0000**	**4.9286**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0426	0.2579	0.5251	1.0100e-003		4.8100e-003	4.8100e-003		4.8100e-003	4.8100e-003	0.0000	85.4297	85.4297	3.4300e-003	0.0000	85.5154
Total	**0.0426**	**0.2579**	**0.5251**	**1.0100e-003**		**4.8100e-003**	**4.8100e-003**		**4.8100e-003**	**4.8100e-003**	**0.0000**	**85.4297**	**85.4297**	**3.4300e-003**	**0.0000**	**85.5154**

3.4 Building Construction - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.7000e-004	0.0114	2.4700e-003	4.0000e-005	8.9000e-004	1.0000e-005	9.0000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	3.5514	3.5514	1.7000e-004	0.0000	3.5556
Worker	4.7000e-004	2.3000e-004	3.3400e-003	2.0000e-005	2.2000e-003	1.0000e-005	2.2100e-003	5.9000e-004	1.0000e-005	6.0000e-004	0.0000	1.3726	1.3726	2.0000e-005	0.0000	1.3730
Total	**7.4000e-004**	**0.0116**	**5.8100e-003**	**6.0000e-005**	**3.0900e-003**	**2.0000e-005**	**3.1100e-003**	**8.5000e-004**	**2.0000e-005**	**8.7000e-004**	**0.0000**	**4.9239**	**4.9239**	**1.9000e-004**	**0.0000**	**4.9286**

3.4 Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1186	0.6982	1.5715	3.0200e-003		8.8200e-003	8.8200e-003		8.8200e-003	8.8200e-003	0.0000	256.2895	256.2895	9.5500e-003	0.0000	256.5281
Total	**0.1186**	**0.6982**	**1.5715**	**3.0200e-003**		**8.8200e-003**	**8.8200e-003**		**8.8200e-003**	**8.8200e-003**	**0.0000**	**256.2895**	**256.2895**	**9.5500e-003**	**0.0000**	**256.5281**

3.4 Building Construction - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.0000e-004	0.0338	7.3300e-003	1.1000e-004	2.8500e-003	3.0000e-005	2.8800e-003	8.2000e-004	3.0000e-005	8.5000e-004	0.0000	10.6379	10.6379	5.0000e-004	0.0000	10.6505
Worker	1.3300e-003	6.5000e-004	9.5400e-003	4.0000e-005	7.1600e-003	2.0000e-005	7.1800e-003	1.9000e-003	2.0000e-005	1.9300e-003	0.0000	4.0592	4.0592	4.0000e-005	0.0000	4.0603
Total	**2.1300e-003**	**0.0345**	**0.0169**	**1.5000e-004**	**0.0100**	**5.0000e-005**	**0.0101**	**2.7200e-003**	**5.0000e-005**	**2.7800e-003**	**0.0000**	**14.6970**	**14.6970**	**5.4000e-004**	**0.0000**	**14.7108**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1186	0.6982	1.5715	3.0200e-003		8.8200e-003	8.8200e-003		8.8200e-003	8.8200e-003	0.0000	256.2892	256.2892	9.5500e-003	0.0000	256.5278
Total	**0.1186**	**0.6982**	**1.5715**	**3.0200e-003**		**8.8200e-003**	**8.8200e-003**		**8.8200e-003**	**8.8200e-003**	**0.0000**	**256.2892**	**256.2892**	**9.5500e-003**	**0.0000**	**256.5278**

3.4 Building Construction - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.0000e-004	0.0338	7.3300e-003	1.1000e-004	2.6700e-003	3.0000e-005	2.7000e-003	7.8000e-004	3.0000e-005	8.1000e-004	0.0000	10.6379	10.6379	5.0000e-004	0.0000	10.6505
Worker	1.3300e-003	6.5000e-004	9.5400e-003	4.0000e-005	6.6000e-003	2.0000e-005	6.6300e-003	1.7700e-003	2.0000e-005	1.7900e-003	0.0000	4.0592	4.0592	4.0000e-005	0.0000	4.0603
Total	**2.1300e-003**	**0.0345**	**0.0169**	**1.5000e-004**	**9.2700e-003**	**5.0000e-005**	**9.3300e-003**	**2.5500e-003**	**5.0000e-005**	**2.6000e-003**	**0.0000**	**14.6970**	**14.6970**	**5.4000e-004**	**0.0000**	**14.7108**

3.5 Paving - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0166	0.0854	0.1902	3.4000e-004		3.9700e-003	3.9700e-003		3.9700e-003	3.9700e-003	0.0000	28.9194	28.9194	1.3600e-003	0.0000	28.9533
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0166**	**0.0854**	**0.1902**	**3.4000e-004**		**3.9700e-003**	**3.9700e-003**		**3.9700e-003**	**3.9700e-003**	**0.0000**	**28.9194**	**28.9194**	**1.3600e-003**	**0.0000**	**28.9533**

3.5 Paving - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	3.8000e-004	5.5600e-003	3.0000e-005	0.0108	1.0000e-005	0.0108	2.7400e-003	1.0000e-005	2.7500e-003	0.0000	2.2806	2.2806	3.0000e-005	0.0000	2.2812
Total	**7.8000e-004**	**3.8000e-004**	**5.5600e-003**	**3.0000e-005**	**0.0108**	**1.0000e-005**	**0.0108**	**2.7400e-003**	**1.0000e-005**	**2.7500e-003**	**0.0000**	**2.2806**	**2.2806**	**3.0000e-005**	**0.0000**	**2.2812**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0166	0.0854	0.1902	3.4000e-004		3.9700e-003	3.9700e-003		3.9700e-003	3.9700e-003	0.0000	28.9194	28.9194	1.3600e-003	0.0000	28.9533
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0166**	**0.0854**	**0.1902**	**3.4000e-004**		**3.9700e-003**	**3.9700e-003**		**3.9700e-003**	**3.9700e-003**	**0.0000**	**28.9194**	**28.9194**	**1.3600e-003**	**0.0000**	**28.9533**

3.5 Paving - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	3.8000e-004	5.5600e-003	3.0000e-005	9.9000e-003	1.0000e-005	9.9100e-003	2.5100e-003	1.0000e-005	2.5200e-003	0.0000	2.2806	2.2806	3.0000e-005	0.0000	2.2812
Total	**7.8000e-004**	**3.8000e-004**	**5.5600e-003**	**3.0000e-005**	**9.9000e-003**	**1.0000e-005**	**9.9100e-003**	**2.5100e-003**	**1.0000e-005**	**2.5200e-003**	**0.0000**	**2.2806**	**2.2806**	**3.0000e-005**	**0.0000**	**2.2812**

3.6 Architectural Coating - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0927					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0700e-003	0.0326	0.0772	1.3000e-004		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	10.9790	10.9790	4.1000e-004	0.0000	10.9891
Total	**0.0978**	**0.0326**	**0.0772**	**1.3000e-004**		**4.3000e-004**	**4.3000e-004**		**4.3000e-004**	**4.3000e-004**	**0.0000**	**10.9790**	**10.9790**	**4.1000e-004**	**0.0000**	**10.9891**

3.6 Architectural Coating - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	6.0000e-005	8.4000e-004	0.0000	6.3000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.3580	0.3580	0.0000	0.0000	0.3581
Total	**1.2000e-004**	**6.0000e-005**	**8.4000e-004**	**0.0000**	**6.3000e-004**	**0.0000**	**6.3000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.3580**	**0.3580**	**0.0000**	**0.0000**	**0.3581**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0927					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0700e-003	0.0326	0.0772	1.3000e-004		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	10.9790	10.9790	4.1000e-004	0.0000	10.9891
Total	**0.0978**	**0.0326**	**0.0772**	**1.3000e-004**		**4.3000e-004**	**4.3000e-004**		**4.3000e-004**	**4.3000e-004**	**0.0000**	**10.9790**	**10.9790**	**4.1000e-004**	**0.0000**	**10.9891**

3.6 Architectural Coating - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	6.0000e-005	8.4000e-004	0.0000	5.8000e-004	0.0000	5.8000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.3580	0.3580	0.0000	0.0000	0.3581
Total	**1.2000e-004**	**6.0000e-005**	**8.4000e-004**	**0.0000**	**5.8000e-004**	**0.0000**	**5.8000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.3580**	**0.3580**	**0.0000**	**0.0000**	**0.3581**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1587	0.8344	1.4414	6.1900e-003	0.6863	3.3600e-003	0.6897	0.1838	3.1200e-003	0.1869	0.0000	573.1534	573.1534	0.0238	0.0000	573.7474
Unmitigated	0.1587	0.8344	1.4414	6.1900e-003	0.6863	3.3600e-003	0.6897	0.1838	3.1200e-003	0.1869	0.0000	573.1534	573.1534	0.0238	0.0000	573.7474

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Regional Shopping Center	1,366.40	1,599.04	807.68	1,844,187	1,844,187
Total	1,366.40	1,599.04	807.68	1,844,187	1,844,187

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Regional Shopping Center	10.00	5.00	6.50	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Regional Shopping Center	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	99.1355	99.1355	4.8700e-003	1.0100e-003	99.5575
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	99.1355	99.1355	4.8700e-003	1.0100e-003	99.5575
NaturalGas Mitigated	9.4000e-004	8.5000e-003	7.1400e-003	5.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	9.2554	9.2554	1.8000e-004	1.7000e-004	9.3104
NaturalGas Unmitigated	9.4000e-004	8.5000e-003	7.1400e-003	5.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	9.2554	9.2554	1.8000e-004	1.7000e-004	9.3104

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Regional Shopping Center	173440	9.4000e-004	8.5000e-003	7.1400e-003	5.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	9.2554	9.2554	1.8000e-004	1.7000e-004	9.3104
Total		**9.4000e-004**	**8.5000e-003**	**7.1400e-003**	**5.0000e-005**		**6.5000e-004**	**6.5000e-004**		**6.5000e-004**	**6.5000e-004**	**0.0000**	**9.2554**	**9.2554**	**1.8000e-004**	**1.7000e-004**	**9.3104**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Regional Shopping Center	173440	9.4000e-004	8.5000e-003	7.1400e-003	5.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	9.2554	9.2554	1.8000e-004	1.7000e-004	9.3104
Total		**9.4000e-004**	**8.5000e-003**	**7.1400e-003**	**5.0000e-005**		**6.5000e-004**	**6.5000e-004**		**6.5000e-004**	**6.5000e-004**	**0.0000**	**9.2554**	**9.2554**	**1.8000e-004**	**1.7000e-004**	**9.3104**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Regional Shopping Center	370240	99.1355	4.8700e-003	1.0100e-003	99.5575
Total		**99.1355**	**4.8700e-003**	**1.0100e-003**	**99.5575**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Regional Shopping Center	370240	99.1355	4.8700e-003	1.0100e-003	99.5575
Total		**99.1355**	**4.8700e-003**	**1.0100e-003**	**99.5575**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1399	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.9000e-004	7.9000e-004	0.0000	0.0000	8.5000e-004
Unmitigated	0.1399	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.9000e-004	7.9000e-004	0.0000	0.0000	8.5000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0148					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1250					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.9000e-004	7.9000e-004	0.0000	0.0000	8.5000e-004
Total	**0.1399**	**0.0000**	**4.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**7.9000e-004**	**7.9000e-004**	**0.0000**	**0.0000**	**8.5000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0148					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1250					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.9000e-004	7.9000e-004	0.0000	0.0000	8.5000e-004
Total	**0.1399**	**0.0000**	**4.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**7.9000e-004**	**7.9000e-004**	**0.0000**	**0.0000**	**8.5000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	5.3625	3.1100e-003	1.8700e-003	5.9973
Unmitigated	5.3625	3.1100e-003	1.8700e-003	5.9973

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Regional Shopping Center	2.37032 / 1.45278	5.3625	3.1100e-003	1.8700e-003	5.9973
Total		**5.3625**	**3.1100e-003**	**1.8700e-003**	**5.9973**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Regional Shopping Center	2.37032 / 1.45278	5.3625	3.1100e-003	1.8700e-003	5.9973
Total		**5.3625**	**3.1100e-003**	**1.8700e-003**	**5.9973**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	6.8205	0.4031	0.0000	16.8975
Unmitigated	6.8205	0.4031	0.0000	16.8975

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Regional Shopping Center	33.6	6.8205	0.4031	0.0000	16.8975
Total		**6.8205**	**0.4031**	**0.0000**	**16.8975**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Regional Shopping Center	33.6	6.8205	0.4031	0.0000	16.8975
Total		**6.8205**	**0.4031**	**0.0000**	**16.8975**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	528.6770	0.0000	0.0000	528.6770

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	530.1 / 284.8	-1,057.2430	0.0000	0.0000	-1,057.2430
Total		**-1,057.2430**	**0.0000**	**0.0000**	**-1,057.2430**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	2240	1,585.9200	0.0000	0.0000	1,585.9200
Total		**1,585.9200**	**0.0000**	**0.0000**	**1,585.9200**

The Ranch - City of Rancho Cordova (Construction Only - Phase 5)

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Regional Shopping Center	32.00	1000sqft	5.16	32,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Estimated construction start date for Phase 5 of March 2034 (provided by Applicant).

Land Use - This model run provides construction emissions only.

Construction Phase - Phase 5

Off-road Equipment -

Off-road Equipment - For building construction, assumes 1 crane, 2 forklifts, 1 generator set, 1 tractor/loader/backhoe, and 1 welder (as provided by the applicant)

Off-road Equipment -

Off-road Equipment - D

Off-road Equipment -

Trips and VMT - Assume grading truck haul length = 7 miles (Sacramento dump site).

The Ranch - City of Rancho Cordova (Construction Only - Phase 5) - Sacramento County, Summer

Grading - Assume 6.96 acres grading during this phase, based on project components to be built during this phase. Net export of cut and fill during this phase is 25,451 cy.

Architectural Coating - It was assumed that flat coatings are used for interior coatings.

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust -

Woodstoves - No fireplaces.

Consumer Products -

Area Coating -

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	42.00
tblConstructionPhase	NumDays	20.00	67.00
tblConstructionPhase	NumDays	20.00	24.00
tblConstructionPhase	NumDays	230.00	260.00
tblConstructionPhase	NumDays	20.00	86.00
tblConstructionPhase	PhaseEndDate	3/14/2034	4/27/2034
tblConstructionPhase	PhaseEndDate	4/11/2034	7/31/2034
tblConstructionPhase	PhaseEndDate	3/27/2035	9/1/2034
tblConstructionPhase	PhaseEndDate	2/27/2035	9/28/2035
tblConstructionPhase	PhaseEndDate	4/24/2035	12/31/2035
tblConstructionPhase	PhaseStartDate	3/15/2034	4/28/2034
tblConstructionPhase	PhaseStartDate	2/28/2035	8/1/2034
tblConstructionPhase	PhaseStartDate	4/12/2034	10/1/2034
tblConstructionPhase	PhaseStartDate	3/28/2035	9/1/2035
tblGrading	AcresOfGrading	33.50	6.96
tblGrading	MaterialExported	0.00	25,451.00
tblLandUse	LotAcreage	0.73	5.16
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblTripsAndVMT	HaulingTripNumber	3,181.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2034	2.4697	13.6796	16.5164	0.0475	18.2032	0.4371	18.6403	9.9670	0.4371	10.4041	0.0000	4,502.4991	4,502.4991	0.2187	0.0000	4,507.9666
2035	3.5171	8.2694	18.1257	0.0357	0.1213	0.1010	0.2223	0.0329	0.1009	0.1338	0.0000	3,361.4948	3,361.4948	0.1245	0.0000	3,364.6081
Maximum	**3.5171**	**13.6796**	**18.1257**	**0.0475**	**18.2032**	**0.4371**	**18.6403**	**9.9670**	**0.4371**	**10.4041**	**0.0000**	**4,502.4991**	**4,502.4991**	**0.2187**	**0.0000**	**4,507.9666**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2034	2.4697	13.6796	16.5164	0.0475	8.2560	0.4371	8.6932	4.5025	0.4371	4.9396	0.0000	4,502.4991	4,502.4991	0.2187	0.0000	4,507.9666
2035	3.5171	8.2694	18.1257	0.0357	0.1123	0.1010	0.2132	0.0306	0.1009	0.1315	0.0000	3,361.4948	3,361.4948	0.1245	0.0000	3,364.6081
Maximum	**3.5171**	**13.6796**	**18.1257**	**0.0475**	**8.2560**	**0.4371**	**8.6932**	**4.5025**	**0.4371**	**4.9396**	**0.0000**	**4,502.4991**	**4,502.4991**	**0.2187**	**0.0000**	**4,507.9666**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**54.33**	**0.00**	**52.78**	**54.67**	**0.00**	**51.88**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.7664	3.0000e-005	3.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.0000e-003	7.0000e-003	2.0000e-005		7.4500e-003
Energy	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355
Mobile	1.4116	5.4795	10.4989	0.0443	4.7301	0.0223	4.7524	1.2629	0.0207	1.2836		4,517.5501	4,517.5501	0.1736		4,521.8909
Total	**2.1831**	**5.5261**	**10.5413**	**0.0446**	**4.7301**	**0.0258**	**4.7559**	**1.2629**	**0.0243**	**1.2871**		**4,573.4604**	**4,573.4604**	**0.1747**	**1.0200e-003**	**4,578.1339**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.7664	3.0000e-005	3.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.0000e-003	7.0000e-003	2.0000e-005		7.4500e-003
Energy	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355
Mobile	1.4116	5.4795	10.4989	0.0443	4.7301	0.0223	4.7524	1.2629	0.0207	1.2836		4,517.5501	4,517.5501	0.1736		4,521.8909
Total	**2.1831**	**5.5261**	**10.5413**	**0.0446**	**4.7301**	**0.0258**	**4.7559**	**1.2629**	**0.0243**	**1.2871**		**4,573.4604**	**4,573.4604**	**0.1747**	**1.0200e-003**	**4,578.1339**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation for Commercial and MFR	Site Preparation	3/1/2034	4/27/2034	5	42	
2	Grading and improvements	Grading	4/28/2034	7/31/2034	5	67	
3	Building Construction	Building Construction	10/1/2034	9/28/2035	5	260	
4	Paving	Paving	8/1/2034	9/1/2034	5	24	
5	Architectural Coating	Architectural Coating	9/1/2035	12/31/2035	5	86	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 48,000; Non-Residential Outdoor: 16,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

The Ranch - City of Rancho Cordova (Construction Only - Phase 5) - Sacramento County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading and improvements	Excavators	1	8.00	158	0.38
Grading and improvements	Graders	1	8.00	187	0.41
Grading and improvements	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation for Commercial and MFR	Rubber Tired Dozers	3	8.00	247	0.40
Grading and improvements	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation for Commercial and MFR	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	10.00	5.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading and improvements	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation for Commercial and MFR	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation for Commercial and MFR - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.4399	13.6680	16.2918	0.0466		0.4367	0.4367		0.4367	0.4367		4,409.7537	4,409.7537	0.2176		4,415.1936
Total	**2.4399**	**13.6680**	**16.2918**	**0.0466**	**18.0663**	**0.4367**	**18.5029**	**9.9307**	**0.4367**	**10.3673**		**4,409.7537**	**4,409.7537**	**0.2176**		**4,415.1936**

3.2 Site Preparation for Commercial and MFR - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0297	0.0116	0.2246	9.3000e-004	0.1369	4.7000e-004	0.1374	0.0363	4.4000e-004	0.0368		92.7454	92.7454	1.1100e-003		92.7730
Total	**0.0297**	**0.0116**	**0.2246**	**9.3000e-004**	**0.1369**	**4.7000e-004**	**0.1374**	**0.0363**	**4.4000e-004**	**0.0368**		**92.7454**	**92.7454**	**1.1100e-003**		**92.7730**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	2.4399	13.6680	16.2918	0.0466		0.4367	0.4367		0.4367	0.4367	0.0000	4,409.7537	4,409.7537	0.2176		4,415.1936
Total	**2.4399**	**13.6680**	**16.2918**	**0.0466**	**8.1298**	**0.4367**	**8.5665**	**4.4688**	**0.4367**	**4.9055**	**0.0000**	**4,409.7537**	**4,409.7537**	**0.2176**		**4,415.1936**

3.2 Site Preparation for Commercial and MFR - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0297	0.0116	0.2246	9.3000e-004	0.1262	4.7000e-004	0.1267	0.0337	4.4000e-004	0.0341		92.7454	92.7454	1.1100e-003		92.7730
Total	**0.0297**	**0.0116**	**0.2246**	**9.3000e-004**	**0.1262**	**4.7000e-004**	**0.1267**	**0.0337**	**4.4000e-004**	**0.0341**		**92.7454**	**92.7454**	**1.1100e-003**		**92.7730**

3.3 Grading and improvements - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2108	0.0000	6.2108	3.3340	0.0000	3.3340			0.0000			0.0000
Off-Road	1.6179	7.7501	14.4518	0.0363		0.2340	0.2340		0.2340	0.2340		3,439.7201	3,439.7201	0.1437		3,443.3117
Total	**1.6179**	**7.7501**	**14.4518**	**0.0363**	**6.2108**	**0.2340**	**6.4448**	**3.3340**	**0.2340**	**3.5680**		**3,439.7201**	**3,439.7201**	**0.1437**		**3,443.3117**

3.3 Grading and improvements - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0248	9.6800e-003	0.1871	7.7000e-004	0.1141	4.0000e-004	0.1145	0.0303	3.6000e-004	0.0306		77.2878	77.2878	9.2000e-004		77.3109
Total	**0.0248**	**9.6800e-003**	**0.1871**	**7.7000e-004**	**0.1141**	**4.0000e-004**	**0.1145**	**0.0303**	**3.6000e-004**	**0.0306**		**77.2878**	**77.2878**	**9.2000e-004**		**77.3109**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7949	0.0000	2.7949	1.5003	0.0000	1.5003			0.0000			0.0000
Off-Road	1.6179	7.7501	14.4518	0.0363		0.2340	0.2340		0.2340	0.2340	0.0000	3,439.7201	3,439.7201	0.1437		3,443.3117
Total	**1.6179**	**7.7501**	**14.4518**	**0.0363**	**2.7949**	**0.2340**	**3.0289**	**1.5003**	**0.2340**	**1.7343**	**0.0000**	**3,439.7201**	**3,439.7201**	**0.1437**		**3,443.3117**

3.3 Grading and improvements - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0248	9.6800e-003	0.1871	7.7000e-004	0.1052	4.0000e-004	0.1056	0.0281	3.6000e-004	0.0284		77.2878	77.2878	9.2000e-004		77.3109
Total	**0.0248**	**9.6800e-003**	**0.1871**	**7.7000e-004**	**0.1052**	**4.0000e-004**	**0.1056**	**0.0281**	**3.6000e-004**	**0.0284**		**77.2878**	**77.2878**	**9.2000e-004**		**77.3109**

3.4 Building Construction - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

3.4 Building Construction - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.1400e-003	0.3461	0.0718	1.1400e-003	0.0301	3.5000e-004	0.0304	8.6500e-003	3.3000e-004	8.9800e-003		121.7279	121.7279	5.5600e-003		121.8670
Worker	0.0165	6.4500e-003	0.1248	5.2000e-004	0.0761	2.6000e-004	0.0763	0.0202	2.4000e-004	0.0204		51.5252	51.5252	6.1000e-004		51.5406
Total	**0.0247**	**0.3525**	**0.1965**	**1.6600e-003**	**0.1061**	**6.1000e-004**	**0.1067**	**0.0288**	**5.7000e-004**	**0.0294**		**173.2531**	**173.2531**	**6.1700e-003**		**173.4075**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

3.4 Building Construction - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.1400e-003	0.3461	0.0718	1.1400e-003	0.0281	3.5000e-004	0.0285	8.1700e-003	3.3000e-004	8.5000e-003		121.7279	121.7279	5.5600e-003		121.8670
Worker	0.0165	6.4500e-003	0.1248	5.2000e-004	0.0701	2.6000e-004	0.0704	0.0187	2.4000e-004	0.0190		51.5252	51.5252	6.1000e-004		51.5406
Total	**0.0247**	**0.3525**	**0.1965**	**1.6600e-003**	**0.0983**	**6.1000e-004**	**0.0989**	**0.0269**	**5.7000e-004**	**0.0275**		**173.2531**	**173.2531**	**6.1700e-003**		**173.4075**

3.4 Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

3.4 Building Construction - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.0200e-003	0.3431	0.0709	1.1400e-003	0.0301	3.3000e-004	0.0304	8.6500e-003	3.2000e-004	8.9700e-003		121.5433	121.5433	5.5200e-003		121.6814
Worker	0.0155	6.1000e-003	0.1190	5.1000e-004	0.0761	2.5000e-004	0.0763	0.0202	2.3000e-004	0.0204		50.7973	50.7973	5.7000e-004		50.8115
Total	**0.0235**	**0.3492**	**0.1899**	**1.6500e-003**	**0.1061**	**5.8000e-004**	**0.1067**	**0.0288**	**5.5000e-004**	**0.0294**		**172.3406**	**172.3406**	**6.0900e-003**		**172.4930**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

3.4 Building Construction - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.0200e-003	0.3431	0.0709	1.1400e-003	0.0281	3.3000e-004	0.0285	8.1700e-003	3.2000e-004	8.4900e-003		121.5433	121.5433	5.5200e-003		121.6814
Worker	0.0155	6.1000e-003	0.1190	5.1000e-004	0.0701	2.5000e-004	0.0704	0.0187	2.3000e-004	0.0189		50.7973	50.7973	5.7000e-004		50.8115
Total	**0.0235**	**0.3492**	**0.1899**	**1.6500e-003**	**0.0983**	**5.8000e-004**	**0.0988**	**0.0269**	**5.5000e-004**	**0.0274**		**172.3406**	**172.3406**	**6.0900e-003**		**172.4930**

3.5 Paving - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3845	7.1202	15.8495	0.0281		0.3306	0.3306		0.3306	0.3306		2,656.5168	2,656.5168	0.1245		2,659.6302
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3845**	**7.1202**	**15.8495**	**0.0281**		**0.3306**	**0.3306**		**0.3306**	**0.3306**		**2,656.5168**	**2,656.5168**	**0.1245**		**2,659.6302**

3.5 Paving - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0743	0.0290	0.5614	2.3200e-003	0.9373	1.1900e-003	0.9385	0.2368	1.0900e-003	0.2379		231.8635	231.8635	2.7600e-003		231.9326
Total	**0.0743**	**0.0290**	**0.5614**	**2.3200e-003**	**0.9373**	**1.1900e-003**	**0.9385**	**0.2368**	**1.0900e-003**	**0.2379**		**231.8635**	**231.8635**	**2.7600e-003**		**231.9326**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3845	7.1202	15.8495	0.0281		0.3306	0.3306		0.3306	0.3306	0.0000	2,656.5168	2,656.5168	0.1245		2,659.6302
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3845**	**7.1202**	**15.8495**	**0.0281**		**0.3306**	**0.3306**		**0.3306**	**0.3306**	**0.0000**	**2,656.5168**	**2,656.5168**	**0.1245**		**2,659.6302**

3.5 Paving - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0743	0.0290	0.5614	2.3200e-003	0.8570	1.1900e-003	0.8581	0.2171	1.0900e-003	0.2182		231.8635	231.8635	2.7600e-003		231.9326
Total	**0.0743**	**0.0290**	**0.5614**	**2.3200e-003**	**0.8570**	**1.1900e-003**	**0.8581**	**0.2171**	**1.0900e-003**	**0.2182**		**231.8635**	**231.8635**	**2.7600e-003**		**231.9326**

3.6 Architectural Coating - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.1558					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003		281.4481	281.4481	0.0104		281.7081
Total	**2.2737**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**		**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.6 Architectural Coating - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.0900e-003	1.2200e-003	0.0238	1.0000e-004	0.0152	5.0000e-005	0.0153	4.0400e-003	5.0000e-005	4.0800e-003		10.1595	10.1595	1.1000e-004		10.1623
Total	**3.0900e-003**	**1.2200e-003**	**0.0238**	**1.0000e-004**	**0.0152**	**5.0000e-005**	**0.0153**	**4.0400e-003**	**5.0000e-005**	**4.0800e-003**		**10.1595**	**10.1595**	**1.1000e-004**		**10.1623**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.1558					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003	0.0000	281.4481	281.4481	0.0104		281.7081
Total	**2.2737**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.6 Architectural Coating - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.0900e-003	1.2200e-003	0.0238	1.0000e-004	0.0140	5.0000e-005	0.0141	3.7400e-003	5.0000e-005	3.7900e-003		10.1595	10.1595	1.1000e-004		10.1623
Total	**3.0900e-003**	**1.2200e-003**	**0.0238**	**1.0000e-004**	**0.0140**	**5.0000e-005**	**0.0141**	**3.7400e-003**	**5.0000e-005**	**3.7900e-003**		**10.1595**	**10.1595**	**1.1000e-004**		**10.1623**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.4116	5.4795	10.4989	0.0443	4.7301	0.0223	4.7524	1.2629	0.0207	1.2836		4,517.5501	4,517.5501	0.1736		4,521.8909
Unmitigated	1.4116	5.4795	10.4989	0.0443	4.7301	0.0223	4.7524	1.2629	0.0207	1.2836		4,517.5501	4,517.5501	0.1736		4,521.8909

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Regional Shopping Center	1,366.40	1,599.04	807.68	1,844,187	1,844,187
Total	1,366.40	1,599.04	807.68	1,844,187	1,844,187

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Regional Shopping Center	10.00	5.00	6.50	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Regional Shopping Center	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355
NaturalGas Unmitigated	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Regional Shopping Center	475.178	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355
Total		**5.1200e-003**	**0.0466**	**0.0391**	**2.8000e-004**		**3.5400e-003**	**3.5400e-003**		**3.5400e-003**	**3.5400e-003**		**55.9033**	**55.9033**	**1.0700e-003**	**1.0200e-003**	**56.2355**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Regional Shopping Center	0.475178	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355
Total		**5.1200e-003**	**0.0466**	**0.0391**	**2.8000e-004**		**3.5400e-003**	**3.5400e-003**		**3.5400e-003**	**3.5400e-003**		**55.9033**	**55.9033**	**1.0700e-003**	**1.0200e-003**	**56.2355**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.7664	3.0000e-005	3.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.0000e-003	7.0000e-003	2.0000e-005		7.4500e-003
Unmitigated	0.7664	3.0000e-005	3.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.0000e-003	7.0000e-003	2.0000e-005		7.4500e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0813					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.6848					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.0000e-004	3.0000e-005	3.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.0000e-003	7.0000e-003	2.0000e-005		7.4500e-003
Total	**0.7664**	**3.0000e-005**	**3.2500e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**7.0000e-003**	**7.0000e-003**	**2.0000e-005**		**7.4500e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0813					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.6848					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.0000e-004	3.0000e-005	3.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.0000e-003	7.0000e-003	2.0000e-005		7.4500e-003
Total	**0.7664**	**3.0000e-005**	**3.2500e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**7.0000e-003**	**7.0000e-003**	**2.0000e-005**		**7.4500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

The Ranch - City of Rancho Cordova (Construction Only - Phase 5)

Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Regional Shopping Center	32.00	1000sqft	5.16	32,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Estimated construction start date for Phase 5 of March 2034 (provided by Applicant).

Land Use - This model run provides construction emissions only.

Construction Phase - Phase 5

Off-road Equipment -

Off-road Equipment - For building construction, assumes 1 crane, 2 forklifts, 1 generator set, 1 tractor/loader/backhoe, and 1 welder (as provided by the applicant)

Off-road Equipment -

Off-road Equipment - D

Off-road Equipment -

Trips and VMT - Assume grading truck haul length = 7 miles (Sacramento dump site).

Grading - Assume 6.96 acres grading during this phase, based on project components to be built during this phase. Net export of cut and fill during this phase is 25,451 cy.

Architectural Coating - It was assumed that flat coatings are used for interior coatings.

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust -

Woodstoves - No fireplaces.

Consumer Products -

Area Coating -

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	42.00
tblConstructionPhase	NumDays	20.00	67.00
tblConstructionPhase	NumDays	20.00	24.00
tblConstructionPhase	NumDays	230.00	260.00
tblConstructionPhase	NumDays	20.00	86.00
tblConstructionPhase	PhaseEndDate	3/14/2034	4/27/2034
tblConstructionPhase	PhaseEndDate	4/11/2034	7/31/2034
tblConstructionPhase	PhaseEndDate	3/27/2035	9/1/2034
tblConstructionPhase	PhaseEndDate	2/27/2035	9/28/2035
tblConstructionPhase	PhaseEndDate	4/24/2035	12/31/2035
tblConstructionPhase	PhaseStartDate	3/15/2034	4/28/2034
tblConstructionPhase	PhaseStartDate	2/28/2035	8/1/2034
tblConstructionPhase	PhaseStartDate	4/12/2034	10/1/2034
tblConstructionPhase	PhaseStartDate	3/28/2035	9/1/2035
tblGrading	AcresOfGrading	33.50	6.96
tblGrading	MaterialExported	0.00	25,451.00
tblLandUse	LotAcreage	0.73	5.16
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblTripsAndVMT	HaulingTripNumber	3,181.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2034	2.4681	13.6822	16.4748	0.0474	18.2032	0.4371	18.6403	9.9670	0.4371	10.4041	0.0000	4,491.1510	4,491.1510	0.2185	0.0000	4,496.6145
2035	3.5166	8.2739	18.1089	0.0356	0.1213	0.1010	0.2223	0.0329	0.1009	0.1338	0.0000	3,350.9984	3,350.9984	0.1249	0.0000	3,354.1199
Maximum	**3.5166**	**13.6822**	**18.1089**	**0.0474**	**18.2032**	**0.4371**	**18.6403**	**9.9670**	**0.4371**	**10.4041**	**0.0000**	**4,491.1510**	**4,491.1510**	**0.2185**	**0.0000**	**4,496.6145**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2034	2.4681	13.6822	16.4748	0.0474	8.2560	0.4371	8.6932	4.5025	0.4371	4.9396	0.0000	4,491.1510	4,491.1510	0.2185	0.0000	4,496.6145
2035	3.5166	8.2739	18.1089	0.0356	0.1123	0.1010	0.2132	0.0306	0.1009	0.1316	0.0000	3,350.9984	3,350.9984	0.1249	0.0000	3,354.1199
Maximum	**3.5166**	**13.6822**	**18.1089**	**0.0474**	**8.2560**	**0.4371**	**8.6932**	**4.5025**	**0.4371**	**4.9396**	**0.0000**	**4,491.1510**	**4,491.1510**	**0.2185**	**0.0000**	**4,496.6145**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**54.33**	**0.00**	**52.78**	**54.67**	**0.00**	**51.88**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.7664	3.0000e-005	3.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.0000e-003	7.0000e-003	2.0000e-005		7.4500e-003
Energy	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355
Mobile	0.9632	5.5977	10.0904	0.0402	4.7301	0.0225	4.7525	1.2629	0.0209	1.2837		4,104.8843	4,104.8843	0.1807		4,109.4016
Total	**1.7347**	**5.6443**	**10.1327**	**0.0405**	**4.7301**	**0.0260**	**4.7561**	**1.2629**	**0.0244**	**1.2873**		**4,160.7946**	**4,160.7946**	**0.1818**	**1.0200e-003**	**4,165.6445**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.7664	3.0000e-005	3.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.0000e-003	7.0000e-003	2.0000e-005		7.4500e-003
Energy	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355
Mobile	0.9632	5.5977	10.0904	0.0402	4.7301	0.0225	4.7525	1.2629	0.0209	1.2837		4,104.8843	4,104.8843	0.1807		4,109.4016
Total	**1.7347**	**5.6443**	**10.1327**	**0.0405**	**4.7301**	**0.0260**	**4.7561**	**1.2629**	**0.0244**	**1.2873**		**4,160.7946**	**4,160.7946**	**0.1818**	**1.0200e-003**	**4,165.6445**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation for Commercial and MFR	Site Preparation	3/1/2034	4/27/2034	5	42	
2	Grading and improvements	Grading	4/28/2034	7/31/2034	5	67	
3	Building Construction	Building Construction	10/1/2034	9/28/2035	5	260	
4	Paving	Paving	8/1/2034	9/1/2034	5	24	
5	Architectural Coating	Architectural Coating	9/1/2035	12/31/2035	5	86	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 48,000; Non-Residential Outdoor: 16,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

The Ranch - City of Rancho Cordova (Construction Only - Phase 5) - Sacramento County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading and improvements	Excavators	1	8.00	158	0.38
Grading and improvements	Graders	1	8.00	187	0.41
Grading and improvements	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation for Commercial and MFR	Rubber Tired Dozers	3	8.00	247	0.40
Grading and improvements	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation for Commercial and MFR	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	10.00	5.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading and improvements	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation for Commercial and MFR	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation for Commercial and MFR - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.4399	13.6680	16.2918	0.0466		0.4367	0.4367		0.4367	0.4367		4,409.7537	4,409.7537	0.2176		4,415.1936
Total	**2.4399**	**13.6680**	**16.2918**	**0.0466**	**18.0663**	**0.4367**	**18.5029**	**9.9307**	**0.4367**	**10.3673**		**4,409.7537**	**4,409.7537**	**0.2176**		**4,415.1936**

3.2 Site Preparation for Commercial and MFR - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0282	0.0142	0.1830	8.2000e-004	0.1369	4.7000e-004	0.1374	0.0363	4.4000e-004	0.0368		81.3973	81.3973	9.4000e-004		81.4209
Total	**0.0282**	**0.0142**	**0.1830**	**8.2000e-004**	**0.1369**	**4.7000e-004**	**0.1374**	**0.0363**	**4.4000e-004**	**0.0368**		**81.3973**	**81.3973**	**9.4000e-004**		**81.4209**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	2.4399	13.6680	16.2918	0.0466		0.4367	0.4367		0.4367	0.4367	0.0000	4,409.7537	4,409.7537	0.2176		4,415.1936
Total	**2.4399**	**13.6680**	**16.2918**	**0.0466**	**8.1298**	**0.4367**	**8.5665**	**4.4688**	**0.4367**	**4.9055**	**0.0000**	**4,409.7537**	**4,409.7537**	**0.2176**		**4,415.1936**

3.2 Site Preparation for Commercial and MFR - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0282	0.0142	0.1830	8.2000e-004	0.1262	4.7000e-004	0.1267	0.0337	4.4000e-004	0.0341		81.3973	81.3973	9.4000e-004		81.4209
Total	**0.0282**	**0.0142**	**0.1830**	**8.2000e-004**	**0.1262**	**4.7000e-004**	**0.1267**	**0.0337**	**4.4000e-004**	**0.0341**		**81.3973**	**81.3973**	**9.4000e-004**		**81.4209**

3.3 Grading and improvements - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2108	0.0000	6.2108	3.3340	0.0000	3.3340			0.0000			0.0000
Off-Road	1.6179	7.7501	14.4518	0.0363		0.2340	0.2340		0.2340	0.2340		3,439.7201	3,439.7201	0.1437		3,443.3117
Total	**1.6179**	**7.7501**	**14.4518**	**0.0363**	**6.2108**	**0.2340**	**6.4448**	**3.3340**	**0.2340**	**3.5680**		**3,439.7201**	**3,439.7201**	**0.1437**		**3,443.3117**

3.3 Grading and improvements - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0235	0.0119	0.1525	6.8000e-004	0.1141	4.0000e-004	0.1145	0.0303	3.6000e-004	0.0306		67.8311	67.8311	7.9000e-004		67.8507
Total	**0.0235**	**0.0119**	**0.1525**	**6.8000e-004**	**0.1141**	**4.0000e-004**	**0.1145**	**0.0303**	**3.6000e-004**	**0.0306**		**67.8311**	**67.8311**	**7.9000e-004**		**67.8507**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7949	0.0000	2.7949	1.5003	0.0000	1.5003			0.0000			0.0000
Off-Road	1.6179	7.7501	14.4518	0.0363		0.2340	0.2340		0.2340	0.2340	0.0000	3,439.7201	3,439.7201	0.1437		3,443.3117
Total	**1.6179**	**7.7501**	**14.4518**	**0.0363**	**2.7949**	**0.2340**	**3.0289**	**1.5003**	**0.2340**	**1.7343**	**0.0000**	**3,439.7201**	**3,439.7201**	**0.1437**		**3,443.3117**

3.3 Grading and improvements - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0235	0.0119	0.1525	6.8000e-004	0.1052	4.0000e-004	0.1056	0.0281	3.6000e-004	0.0284		67.8311	67.8311	7.9000e-004		67.8507
Total	**0.0235**	**0.0119**	**0.1525**	**6.8000e-004**	**0.1052**	**4.0000e-004**	**0.1056**	**0.0281**	**3.6000e-004**	**0.0284**		**67.8311**	**67.8311**	**7.9000e-004**		**67.8507**

3.4 Building Construction - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

3.4 Building Construction - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.5900e-003	0.3489	0.0820	1.1200e-003	0.0301	3.6000e-004	0.0304	8.6500e-003	3.4000e-004	8.9900e-003		118.6923	118.6923	6.0000e-003		118.8424
Worker	0.0157	7.9100e-003	0.1016	4.5000e-004	0.0761	2.6000e-004	0.0763	0.0202	2.4000e-004	0.0204		45.2207	45.2207	5.2000e-004		45.2338
Total	**0.0243**	**0.3568**	**0.1837**	**1.5700e-003**	**0.1061**	**6.2000e-004**	**0.1068**	**0.0288**	**5.8000e-004**	**0.0294**		**163.9131**	**163.9131**	**6.5200e-003**		**164.0762**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

3.4 Building Construction - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.5900e-003	0.3489	0.0820	1.1200e-003	0.0281	3.6000e-004	0.0285	8.1700e-003	3.4000e-004	8.5100e-003		118.6923	118.6923	6.0000e-003		118.8424
Worker	0.0157	7.9100e-003	0.1016	4.5000e-004	0.0701	2.6000e-004	0.0704	0.0187	2.4000e-004	0.0190		45.2207	45.2207	5.2000e-004		45.2338
Total	**0.0243**	**0.3568**	**0.1837**	**1.5700e-003**	**0.0983**	**6.2000e-004**	**0.0989**	**0.0269**	**5.8000e-004**	**0.0275**		**163.9131**	**163.9131**	**6.5200e-003**		**164.0762**

3.4 Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

3.4 Building Construction - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.4600e-003	0.3459	0.0810	1.1100e-003	0.0301	3.4000e-004	0.0304	8.6500e-003	3.3000e-004	8.9800e-003		118.5111	118.5111	5.9600e-003		118.6600
Worker	0.0147	7.4700e-003	0.0966	4.5000e-004	0.0761	2.5000e-004	0.0763	0.0202	2.3000e-004	0.0204		44.5770	44.5770	4.9000e-004		44.5892
Total	**0.0232**	**0.3534**	**0.1775**	**1.5600e-003**	**0.1061**	**5.9000e-004**	**0.1067**	**0.0288**	**5.6000e-004**	**0.0294**		**163.0881**	**163.0881**	**6.4500e-003**		**163.2492**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

3.4 Building Construction - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.4600e-003	0.3459	0.0810	1.1100e-003	0.0281	3.4000e-004	0.0285	8.1700e-003	3.3000e-004	8.5000e-003		118.5111	118.5111	5.9600e-003		118.6600
Worker	0.0147	7.4700e-003	0.0966	4.5000e-004	0.0701	2.5000e-004	0.0704	0.0187	2.3000e-004	0.0189		44.5770	44.5770	4.9000e-004		44.5892
Total	**0.0232**	**0.3534**	**0.1775**	**1.5600e-003**	**0.0983**	**5.9000e-004**	**0.0988**	**0.0269**	**5.6000e-004**	**0.0274**		**163.0881**	**163.0881**	**6.4500e-003**		**163.2492**

3.5 Paving - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3845	7.1202	15.8495	0.0281		0.3306	0.3306		0.3306	0.3306		2,656.5168	2,656.5168	0.1245		2,659.6302
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3845**	**7.1202**	**15.8495**	**0.0281**		**0.3306**	**0.3306**		**0.3306**	**0.3306**		**2,656.5168**	**2,656.5168**	**0.1245**		**2,659.6302**

3.5 Paving - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0705	0.0356	0.4574	2.0400e-003	0.9373	1.1900e-003	0.9385	0.2368	1.0900e-003	0.2379		203.4933	203.4933	2.3600e-003		203.5522
Total	**0.0705**	**0.0356**	**0.4574**	**2.0400e-003**	**0.9373**	**1.1900e-003**	**0.9385**	**0.2368**	**1.0900e-003**	**0.2379**		**203.4933**	**203.4933**	**2.3600e-003**		**203.5522**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3845	7.1202	15.8495	0.0281		0.3306	0.3306		0.3306	0.3306	0.0000	2,656.5168	2,656.5168	0.1245		2,659.6302
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3845**	**7.1202**	**15.8495**	**0.0281**		**0.3306**	**0.3306**		**0.3306**	**0.3306**	**0.0000**	**2,656.5168**	**2,656.5168**	**0.1245**		**2,659.6302**

3.5 Paving - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0705	0.0356	0.4574	2.0400e-003	0.8570	1.1900e-003	0.8581	0.2171	1.0900e-003	0.2182		203.4933	203.4933	2.3600e-003		203.5522
Total	**0.0705**	**0.0356**	**0.4574**	**2.0400e-003**	**0.8570**	**1.1900e-003**	**0.8581**	**0.2171**	**1.0900e-003**	**0.2182**		**203.4933**	**203.4933**	**2.3600e-003**		**203.5522**

3.6 Architectural Coating - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.1558					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003		281.4481	281.4481	0.0104		281.7081
Total	**2.2737**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**		**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.6 Architectural Coating - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.9500e-003	1.4900e-003	0.0193	9.0000e-005	0.0152	5.0000e-005	0.0153	4.0400e-003	5.0000e-005	4.0800e-003		8.9154	8.9154	1.0000e-004		8.9178
Total	**2.9500e-003**	**1.4900e-003**	**0.0193**	**9.0000e-005**	**0.0152**	**5.0000e-005**	**0.0153**	**4.0400e-003**	**5.0000e-005**	**4.0800e-003**		**8.9154**	**8.9154**	**1.0000e-004**		**8.9178**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.1558					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003	0.0000	281.4481	281.4481	0.0104		281.7081
Total	**2.2737**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.6 Architectural Coating - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.9500e-003	1.4900e-003	0.0193	9.0000e-005	0.0140	5.0000e-005	0.0141	3.7400e-003	5.0000e-005	3.7900e-003		8.9154	8.9154	1.0000e-004		8.9178
Total	**2.9500e-003**	**1.4900e-003**	**0.0193**	**9.0000e-005**	**0.0140**	**5.0000e-005**	**0.0141**	**3.7400e-003**	**5.0000e-005**	**3.7900e-003**		**8.9154**	**8.9154**	**1.0000e-004**		**8.9178**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9632	5.5977	10.0904	0.0402	4.7301	0.0225	4.7525	1.2629	0.0209	1.2837		4,104.8843	4,104.8843	0.1807		4,109.4016
Unmitigated	0.9632	5.5977	10.0904	0.0402	4.7301	0.0225	4.7525	1.2629	0.0209	1.2837		4,104.8843	4,104.8843	0.1807		4,109.4016

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Regional Shopping Center	1,366.40	1,599.04	807.68	1,844,187	1,844,187
Total	1,366.40	1,599.04	807.68	1,844,187	1,844,187

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Regional Shopping Center	10.00	5.00	6.50	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Regional Shopping Center	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355
NaturalGas Unmitigated	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Regional Shopping Center	475.178	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355
Total		**5.1200e-003**	**0.0466**	**0.0391**	**2.8000e-004**		**3.5400e-003**	**3.5400e-003**		**3.5400e-003**	**3.5400e-003**		**55.9033**	**55.9033**	**1.0700e-003**	**1.0200e-003**	**56.2355**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Regional Shopping Center	0.475178	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355
Total		**5.1200e-003**	**0.0466**	**0.0391**	**2.8000e-004**		**3.5400e-003**	**3.5400e-003**		**3.5400e-003**	**3.5400e-003**		**55.9033**	**55.9033**	**1.0700e-003**	**1.0200e-003**	**56.2355**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.7664	3.0000e-005	3.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.0000e-003	7.0000e-003	2.0000e-005		7.4500e-003
Unmitigated	0.7664	3.0000e-005	3.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.0000e-003	7.0000e-003	2.0000e-005		7.4500e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0813					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.6848					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.0000e-004	3.0000e-005	3.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.0000e-003	7.0000e-003	2.0000e-005		7.4500e-003
Total	**0.7664**	**3.0000e-005**	**3.2500e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**7.0000e-003**	**7.0000e-003**	**2.0000e-005**		**7.4500e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0813					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.6848					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.0000e-004	3.0000e-005	3.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		7.0000e-003	7.0000e-003	2.0000e-005		7.4500e-003
Total	**0.7664**	**3.0000e-005**	**3.2500e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**7.0000e-003**	**7.0000e-003**	**2.0000e-005**		**7.4500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Unmitigated

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0
Other Asphalt Surfaces	2.50	Acre	2.50	108,900.00	0
Parking Lot	1.50	Acre	1.50	65,340.00	0
City Park	9.10	Acre	9.28	396,396.00	0
City Park	3.07	Acre	3.69	133,729.20	0
City Park	0.50	Acre	1.40	21,780.00	0
Apartments Mid Rise	215.00	Dwelling Unit	7.17	215,000.00	621
Retirement Community	38.00	Dwelling Unit	1.26	38,000.00	78
Retirement Community	737.00	Dwelling Unit	90.91	737,000.00	1533
Single Family Housing	735.00	Dwelling Unit	77.87	1,323,000.00	2087
Regional Shopping Center	32.00	1000sqft	5.16	32,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Buildout Year: 2029

Land Use - Land use info as provided by the unit counts/gross acres/sf provided by applicant. 8,000sf restroom is in the 9.1acre park. 21,000sf clubhouse/restroom is incl. in the 3.07ac city park. Pop. as provided in the Pop & Housing section of the EIR.

Construction Phase - Note - constructed not modeled under this (operational) scenario.

Off-road Equipment -

Trips and VMT -

Grading - Assumes whole project site is graded (except for protected areas) = 319.9 acres. 152,708 CY of material exported from project site (as provided by the Project Applicant).

Architectural Coating -

Vehicle Trips - Trip rates used from Traffic Impact Memo (June, 2019), inclusive of average internal capture rate the traffic consultant applied to AM and PM peak hours. Park trips are assumed to be accounted for by the land uses provided in the Traffic Impact Memo.

Road Dust - Project will not have unpaved roads during the project's operational phase. Since the project is in the SMAQMD jursidiction, project uses the CARB's 2.0 and 0.2 method (per CalEEMod User Guidebook).

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 29.1% - reflects project person/du value (2.504) vs. statewide avg. (2.97) and latest statewide data (ARB).

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.87 - 90.91 - 7.17 - 5.16 - 32.3 - 20.59 - 17.34 = 278.76 acres

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation - Density = ~6.86 du/acre. Increase walkability design (123.53 int/sq. mile). Improve ped network. Provide traffic calming (50%/50%). 100% increase in transit coverage (current coverage=0). Provide Transit Accessibility (0.25 mile)

Mobile Commute Mitigation -

Area Mitigation - No hearths are to be installed as part of the proposed project. Flat (i.e. non-reflective) paints are assumed for projects building interiors. (see SMAQMD Rule 442 - maximum VOC content for flat paints is 50 g/L).

Energy Mitigation - High-efficiency lighting (LEDs) (71.5% improvement). EE appliances. 95% electricity generated via renewables (on-site or SMUD contract).

Water Mitigation - Installation of low-floor indoor water use fixtures, and use of water-efficient irrigation systems (consistent with the current version of Title 24).

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Unmitigated - Sacramento County, Annual

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Residential_Interior	100	50
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConsumerProducts	ROG_EF	2.14E-05	1.5173E-05
tblLandUse	LotAcreage	0.50	1.40
tblLandUse	LotAcreage	3.07	3.69
tblLandUse	LotAcreage	9.10	9.28
tblLandUse	LotAcreage	5.66	7.17
tblLandUse	LotAcreage	7.60	1.26
tblLandUse	LotAcreage	147.40	90.91
tblLandUse	LotAcreage	238.64	77.87
tblLandUse	LotAcreage	0.73	5.16
tblLandUse	Population	574.00	621.00
tblLandUse	Population	101.00	78.00
tblLandUse	Population	1,968.00	1,533.00
tblLandUse	Population	1,962.00	2,087.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblVehicleTrips	ST_TR	6.39	5.36
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	49.97	28.06
tblVehicleTrips	ST_TR	2.03	3.20
tblVehicleTrips	ST_TR	9.91	8.70
tblVehicleTrips	SU_TR	5.86	5.36
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	25.24	28.06

tblVehicleTrips	SU_TR	1.95	3.20
tblVehicleTrips	SU_TR	8.62	8.70
tblVehicleTrips	WD_TR	6.65	5.36
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	42.70	28.06
tblVehicleTrips	WD_TR	2.40	3.20
tblVehicleTrips	WD_TR	9.52	8.70

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3729	3.8217	1.9811	3.5400e-003	1.6379	0.1979	1.8357	0.8969	0.1820	1.0790	0.0000	311.4180	311.4180	0.0976	0.0000	313.8582
Maximum	**0.3729**	**3.8217**	**1.9811**	**3.5400e-003**	**1.6379**	**0.1979**	**1.8357**	**0.8969**	**0.1820**	**1.0790**	**0.0000**	**311.4180**	**311.4180**	**0.0976**	**0.0000**	**313.8582**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3729	3.8216	1.9811	3.5400e-003	1.6369	0.1979	1.8348	0.8967	0.1820	1.0787	0.0000	311.4177	311.4177	0.0976	0.0000	313.8579
Maximum	**0.3729**	**3.8216**	**1.9811**	**3.5400e-003**	**1.6369**	**0.1979**	**1.8348**	**0.8967**	**0.1820**	**1.0787**	**0.0000**	**311.4177**	**311.4177**	**0.0976**	**0.0000**	**313.8579**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.06**	**0.00**	**0.05**	**0.03**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Unmitigated - Sacramento County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2020	3-31-2020	1.5150	1.5150
2	4-1-2020	6-30-2020	1.5149	1.5149
3	7-1-2020	9-30-2020	1.1653	1.1653
		Highest	1.5150	1.5150

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.0481	0.2045	17.7274	9.4000e-004		0.0987	0.0987		0.0987	0.0987	0.0000	29.0598	29.0598	0.0277	0.0000	29.7514
Energy	0.1652	1.4121	0.6044	9.0100e-003		0.1141	0.1141		0.1141	0.1141	0.0000	4,619.0251	4,619.0251	0.1779	0.0603	4,641.4440
Mobile	1.5875	8.2466	18.2704	0.0857	10.0427	0.0439	10.0866	2.6889	0.0408	2.7297	0.0000	7,936.6038	7,936.6038	0.2912	0.0000	7,943.8825
Waste						0.0000	0.0000		0.0000	0.0000	251.9950	0.0000	251.9950	14.8925	0.0000	624.3070
Water						0.0000	0.0000		0.0000	0.0000	40.6026	235.0189	275.6215	0.1513	0.0907	306.4284
Total	**9.8008**	**9.8632**	**36.6023**	**0.0957**	**10.0427**	**0.2567**	**10.2994**	**2.6889**	**0.2536**	**2.9425**	**292.5976**	**12,819.7076**	**13,112.3053**	**15.5405**	**0.1510**	**13,545.8133**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.0481	0.2045	17.7274	9.4000e-004		0.0987	0.0987		0.0987	0.0987	0.0000	29.0598	29.0598	0.0277	0.0000	29.7514
Energy	0.1652	1.4121	0.6044	9.0100e-003		0.1141	0.1141		0.1141	0.1141	0.0000	1,758.6933	1,758.6933	0.0374	0.0312	1,768.9354
Mobile	1.4929	7.7839	16.0811	0.0738	8.5363	0.0384	8.5746	2.2855	0.0356	2.3212	0.0000	6,834.0313	6,834.0313	0.2585	0.0000	6,840.4943
Waste						0.0000	0.0000		0.0000	0.0000	251.9950	0.0000	251.9950	14.8925	0.0000	624.3070
Water						0.0000	0.0000		0.0000	0.0000	32.4821	199.4008	231.8829	0.1216	0.0727	256.5769
Total	**9.7062**	**9.4005**	**34.4129**	**0.0838**	**8.5363**	**0.2511**	**8.7874**	**2.2855**	**0.2484**	**2.5339**	**284.4771**	**8,821.1851**	**9,105.6622**	**15.3377**	**0.1039**	**9,520.0649**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.97**	**4.69**	**5.98**	**12.47**	**15.00**	**2.17**	**14.68**	**15.00**	**2.05**	**13.88**	**2.78**	**31.19**	**30.56**	**1.31**	**31.19**	**29.72**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	1,585.9200
Vegetation Land Change	-1,083.2754
Total	**502.6446**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Placeholder (see Construction model for Construction Emissions)	Site Preparation	1/1/2020	9/8/2020	5	180	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 5

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Placeholder (see Construction model for Construction Emissions)	Rubber Tired Dozers	3	8.00	247	0.40
Placeholder (see Construction model for Construction Emissions)	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Placeholder (see Construction model for	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Clean Paved Roads

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6260	0.0000	1.6260	0.8938	0.0000	0.8938	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3669	3.8176	1.9362	3.4200e-003		0.1978	0.1978		0.1820	0.1820	0.0000	300.8761	300.8761	0.0973	0.0000	303.3089
Total	**0.3669**	**3.8176**	**1.9362**	**3.4200e-003**	**1.6260**	**0.1978**	**1.8237**	**0.8938**	**0.1820**	**1.0757**	**0.0000**	**300.8761**	**300.8761**	**0.0973**	**0.0000**	**303.3089**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0300e-003	4.0900e-003	0.0448	1.2000e-004	0.0119	9.0000e-005	0.0120	3.1600e-003	8.0000e-005	3.2400e-003	0.0000	10.5419	10.5419	3.0000e-004	0.0000	10.5494
Total	**6.0300e-003**	**4.0900e-003**	**0.0448**	**1.2000e-004**	**0.0119**	**9.0000e-005**	**0.0120**	**3.1600e-003**	**8.0000e-005**	**3.2400e-003**	**0.0000**	**10.5419**	**10.5419**	**3.0000e-004**	**0.0000**	**10.5494**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6260	0.0000	1.6260	0.8938	0.0000	0.8938	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3669	3.8176	1.9362	3.4200e-003		0.1978	0.1978		0.1820	0.1820	0.0000	300.8758	300.8758	0.0973	0.0000	303.3085
Total	**0.3669**	**3.8176**	**1.9362**	**3.4200e-003**	**1.6260**	**0.1978**	**1.8237**	**0.8938**	**0.1820**	**1.0757**	**0.0000**	**300.8758**	**300.8758**	**0.0973**	**0.0000**	**303.3085**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0300e-003	4.0900e-003	0.0448	1.2000e-004	0.0110	9.0000e-005	0.0111	2.9400e-003	8.0000e-005	3.0200e-003	0.0000	10.5419	10.5419	3.0000e-004	0.0000	10.5494
Total	**6.0300e-003**	**4.0900e-003**	**0.0448**	**1.2000e-004**	**0.0110**	**9.0000e-005**	**0.0111**	**2.9400e-003**	**8.0000e-005**	**3.0200e-003**	**0.0000**	**10.5419**	**10.5419**	**3.0000e-004**	**0.0000**	**10.5494**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.4929	7.7839	16.0811	0.0738	8.5363	0.0384	8.5746	2.2855	0.0356	2.3212	0.0000	6,834.0313	6,834.0313	0.2585	0.0000	6,840.4943
Unmitigated	1.5875	8.2466	18.2704	0.0857	10.0427	0.0439	10.0866	2.6889	0.0408	2.7297	0.0000	7,936.6038	7,936.6038	0.2912	0.0000	7,943.8825

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,152.40	1,152.40	1152.40	2,957,184	2,661,466
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	897.92	897.92	897.92	1,254,668	1,129,201
Retirement Community	121.60	121.60	121.60	312,039	280,835
Retirement Community	2,358.40	2,358.40	2358.40	6,051,911	5,446,720
Single Family Housing	6,394.50	6,394.50	6394.50	16,408,984	14,768,086
Total	10,924.82	10,924.82	10,924.82	26,984,786	24,286,308

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Regional Shopping Center	10.00	5.00	6.50	16.30	64.70	19.00	54	35	11
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Other Asphalt Surfaces	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Parking Lot	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Regional Shopping Center	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	123.9311	123.9311	6.0900e-003	1.2600e-003	124.4587
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,984.2630	2,984.2630	0.1466	0.0303	2,996.9672
NaturalGas Mitigated	0.1652	1.4121	0.6044	9.0100e-003		0.1141	0.1141		0.1141	0.1141	0.0000	1,634.7622	1,634.7622	0.0313	0.0300	1,644.4768
NaturalGas Unmitigated	0.1652	1.4121	0.6044	9.0100e-003		0.1141	0.1141		0.1141	0.1141	0.0000	1,634.7622	1,634.7622	0.0313	0.0300	1,644.4768

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.09584e+006	0.0113	0.0966	0.0411	6.2000e-004		7.8100e-003	7.8100e-003		7.8100e-003	7.8100e-003	0.0000	111.8421	111.8421	2.1400e-003	2.0500e-003	112.5067
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	173440	9.4000e-004	8.5000e-003	7.1400e-003	5.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	9.2554	9.2554	1.8000e-004	1.7000e-004	9.3104
Retirement Community	459751	2.4800e-003	0.0212	9.0100e-003	1.4000e-004		1.7100e-003	1.7100e-003		1.7100e-003	1.7100e-003	0.0000	24.5341	24.5341	4.7000e-004	4.5000e-004	24.6799
Retirement Community	8.91676e+006	0.0481	0.4109	0.1748	2.6200e-003		0.0332	0.0332		0.0332	0.0332	0.0000	475.8321	475.8321	9.1200e-003	8.7200e-003	478.6597
Single Family Housing	1.89885e+007	0.1024	0.8750	0.3723	5.5800e-003		0.0707	0.0707		0.0707	0.0707	0.0000	1,013.2985	1,013.2985	0.0194	0.0186	1,019.3201
Total		**0.1652**	**1.4121**	**0.6044**	**9.0100e-003**		**0.1141**	**0.1141**		**0.1141**	**0.1141**	**0.0000**	**1,634.7622**	**1,634.7622**	**0.0313**	**0.0300**	**1,644.4768**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.09584e+006	0.0113	0.0966	0.0411	6.2000e-004		7.8100e-003	7.8100e-003		7.8100e-003	7.8100e-003	0.0000	111.8421	111.8421	2.1400e-003	2.0500e-003	112.5067
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	173440	9.4000e-004	8.5000e-003	7.1400e-003	5.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	9.2554	9.2554	1.8000e-004	1.7000e-004	9.3104
Retirement Community	459751	2.4800e-003	0.0212	9.0100e-003	1.4000e-004		1.7100e-003	1.7100e-003		1.7100e-003	1.7100e-003	0.0000	24.5341	24.5341	4.7000e-004	4.5000e-004	24.6799
Retirement Community	8.91676e+006	0.0481	0.4109	0.1748	2.6200e-003		0.0332	0.0332		0.0332	0.0332	0.0000	475.8321	475.8321	9.1200e-003	8.7200e-003	478.6597
Single Family Housing	1.89885e+007	0.1024	0.8750	0.3723	5.5800e-003		0.0707	0.0707		0.0707	0.0707	0.0000	1,013.2985	1,013.2985	0.0194	0.0186	1,019.3201
Total		**0.1652**	**1.4121**	**0.6044**	**9.0100e-003**		**0.1141**	**0.1141**		**0.1141**	**0.1141**	**0.0000**	**1,634.7622**	**1,634.7622**	**0.0313**	**0.0300**	**1,644.4768**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	915139	245.0377	0.0120	2.4900e-003	246.0808
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	22869	6.1234	3.0000e-004	6.0000e-005	6.1495
Regional Shopping Center	370240	99.1355	4.8700e-003	1.0100e-003	99.5575
Retirement Community	178029	47.6691	2.3400e-003	4.8000e-004	47.8721
Retirement Community	3.45283e+006	924.5302	0.0454	9.4000e-003	928.4660
Single Family Housing	6.20618e+006	1,661.7670	0.0816	0.0169	1,668.8413
Total		**2,984.2630**	**0.1466**	**0.0303**	**2,996.9672**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	38916.9	10.4204	5.1000e-004	1.1000e-004	10.4647
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	325.883	0.0873	0.0000	0.0000	0.0876
Regional Shopping Center	12167.3	3.2579	1.6000e-004	3.0000e-005	3.2718
Retirement Community	142243	38.0870	1.8700e-003	3.9000e-004	38.2491
Retirement Community	7334.1	1.9638	1.0000e-004	2.0000e-005	1.9721
Single Family Housing	261857	70.1147	3.4400e-003	7.1000e-004	70.4132
Total		**123.9311**	**6.0800e-003**	**1.2600e-003**	**124.4586**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Non-Residential Interior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.0481	0.2045	17.7274	9.4000e-004		0.0987	0.0987		0.0987	0.0987	0.0000	29.0598	29.0598	0.0277	0.0000	29.7514
Unmitigated	8.0481	0.2045	17.7274	9.4000e-004		0.0987	0.0987		0.0987	0.0987	0.0000	29.0598	29.0598	0.0277	0.0000	29.7514

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.9253					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.5928					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5301	0.2045	17.7274	9.4000e-004		0.0987	0.0987		0.0987	0.0987	0.0000	29.0598	29.0598	0.0277	0.0000	29.7514
Total	**8.0481**	**0.2045**	**17.7274**	**9.4000e-004**		**0.0987**	**0.0987**		**0.0987**	**0.0987**	**0.0000**	**29.0598**	**29.0598**	**0.0277**	**0.0000**	**29.7514**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.9253					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.5928					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5301	0.2045	17.7274	9.4000e-004		0.0987	0.0987		0.0987	0.0987	0.0000	29.0598	29.0598	0.0277	0.0000	29.7514
Total	**8.0481**	**0.2045**	**17.7274**	**9.4000e-004**		**0.0987**	**0.0987**		**0.0987**	**0.0987**	**0.0000**	**29.0598**	**29.0598**	**0.0277**	**0.0000**	**29.7514**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	231.8829	0.1216	0.0727	256.5769
Unmitigated	275.6215	0.1513	0.0907	306.4284

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	14.0081 / 8.8312	31.9212	0.0184	0.0111	35.6742
City Park	0 / 15.0961	14.1474	7.0000e-004	1.4000e-004	14.2077
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	2.37032 / 1.45278	5.3625	3.1100e-003	1.8700e-003	5.9973
Retirement Community	50.4944 / 31.8334	115.0646	0.0663	0.0398	128.5931
Single Family Housing	47.8882 / 30.1904	109.1258	0.0628	0.0378	121.9560
Total		**275.6215**	**0.1513**	**0.0907**	**306.4284**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	11.2065 / 8.2925	26.6873	0.0148	8.8500e-003	29.6947
City Park	0 / 14.1752	13.2844	6.5000e-004	1.4000e-004	13.3410
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1.89626 / 1.36416	4.4792	2.5000e-003	1.5000e-003	4.9879
Retirement Community	40.3955 / 29.8916	96.1985	0.0532	0.0319	107.0389
Single Family Housing	38.3106 / 28.3488	91.2334	0.0505	0.0303	101.5143
Total		**231.8829**	**0.1216**	**0.0727**	**256.5769**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	251.9950	14.8925	0.0000	624.3070
Unmitigated	251.9950	14.8925	0.0000	624.3070

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	98.9	20.0758	1.1865	0.0000	49.7370
City Park	1.09	0.2213	0.0131	0.0000	0.5482
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	33.6	6.8205	0.4031	0.0000	16.8975
Retirement Community	356.5	72.3663	4.2767	0.0000	179.2844
Single Family Housing	751.32	152.5112	9.0132	0.0000	377.8400
Total		**251.9950**	**14.8925**	**0.0000**	**624.3070**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	98.9	20.0758	1.1865	0.0000	49.7370
City Park	1.09	0.2213	0.0131	0.0000	0.5482
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	33.6	6.8205	0.4031	0.0000	16.8975
Retirement Community	356.5	72.3663	4.2767	0.0000	179.2844
Single Family Housing	751.32	152.5112	9.0132	0.0000	377.8400
Total		**251.9950**	**14.8925**	**0.0000**	**624.3070**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	502.6446	0.0000	0.0000	502.6446

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	530.1 / 278.76	-1,083.2754	0.0000	0.0000	-1,083.2754
Total		**-1,083.2754**	**0.0000**	**0.0000**	**-1,083.2754**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	2240	1,585.9200	0.0000	0.0000	1,585.9200
Total		**1,585.9200**	**0.0000**	**0.0000**	**1,585.9200**

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Unmitigated

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0
Other Asphalt Surfaces	2.50	Acre	2.50	108,900.00	0
Parking Lot	1.50	Acre	1.50	65,340.00	0
City Park	9.10	Acre	9.28	396,396.00	0
City Park	3.07	Acre	3.69	133,729.20	0
City Park	0.50	Acre	1.40	21,780.00	0
Apartments Mid Rise	215.00	Dwelling Unit	7.17	215,000.00	621
Retirement Community	38.00	Dwelling Unit	1.26	38,000.00	78
Retirement Community	737.00	Dwelling Unit	90.91	737,000.00	1533
Single Family Housing	735.00	Dwelling Unit	77.87	1,323,000.00	2087
Regional Shopping Center	32.00	1000sqft	5.16	32,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Buildout Year: 2029

Land Use - Land use info as provided by the unit counts/gross acres/sf provided by applicant. 8,000sf restroom is in the 9.1acre park. 21,000sf clubhouse/restroom is incl. in the 3.07ac city park. Pop. as provided in the Pop & Housing section of the EIR.

Construction Phase - Note - constructed not modeled under this (operational) scenario.

Off-road Equipment -

Trips and VMT -

Grading - Assumes whole project site is graded (except for protected areas) = 319.9 acres. 152,708 CY of material exported from project site (as provided by the Project Applicant).

Architectural Coating -

Vehicle Trips - Trip rates used from Traffic Impact Memo (June, 2019), inclusive of average internal capture rate the traffic consultant applied to AM and PM peak hours. Park trips are assumed to be accounted for by the land uses provided in the Traffic Impact Memo.

Road Dust - Project will not have unpaved roads during the project's operational phase. Since the project is in the SMAQMD jursidiction, project uses the CARB's 2.0 and 0.2 method (per CalEEMod User Guidebook).

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 29.1% - reflects project person/du value (2.504) vs. statewide avg. (2.97) and latest statewide data (ARB).

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.87 - 90.91 - 7.17 - 5.16 - 32.3 - 20.59 - 17.34 = 278.76 acres

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation - Density = ~6.86 du/acre. Increase walkability design (123.53 int/sq. mile). Improve ped network. Provide traffic calming (50%/50%). 100% increase in transit coverage (current coverage=0). Provide Transit Accessibility (0.25 mile)

Mobile Commute Mitigation -

Area Mitigation - No hearths are to be installed as part of the proposed project. Flat (i.e. non-reflective) paints are assumed for projects building interiors. (see SMAQMD Rule 442 - maximum VOC content for flat paints is 50 g/L).

Energy Mitigation - High-efficiency lighting (LEDs) (71.5% improvement). EE appliances. 95% electricity generated via renewables (on-site or SMUD contract).

Water Mitigation - Installation of low-floor indoor water use fixtures, and use of water-efficient irrigation systems (consistent with the current version of Title 24).

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Unmitigated - Sacramento County, Summer

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Residential_Interior	100	50
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConsumerProducts	ROG_EF	2.14E-05	1.5173E-05
tblLandUse	LotAcreage	0.50	1.40
tblLandUse	LotAcreage	3.07	3.69
tblLandUse	LotAcreage	9.10	9.28
tblLandUse	LotAcreage	5.66	7.17
tblLandUse	LotAcreage	7.60	1.26
tblLandUse	LotAcreage	147.40	90.91
tblLandUse	LotAcreage	238.64	77.87
tblLandUse	LotAcreage	0.73	5.16
tblLandUse	Population	574.00	621.00
tblLandUse	Population	101.00	78.00
tblLandUse	Population	1,968.00	1,533.00
tblLandUse	Population	1,962.00	2,087.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblVehicleTrips	ST_TR	6.39	5.36
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	49.97	28.06
tblVehicleTrips	ST_TR	2.03	3.20
tblVehicleTrips	ST_TR	9.91	8.70
tblVehicleTrips	SU_TR	5.86	5.36
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	25.24	28.06

tblVehicleTrips	SU_TR	1.95	3.20
tblVehicleTrips	SU_TR	8.62	8.70
tblVehicleTrips	WD_TR	6.65	5.36
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	42.70	28.06
tblVehicleTrips	WD_TR	2.40	3.20
tblVehicleTrips	WD_TR	9.52	8.70

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1541	42.4585	22.1013	0.0395	18.2032	2.1984	20.4016	9.9670	2.0225	11.9895	0.0000	3,827.9339	3,827.9339	1.1959	0.0000	3,857.8321
Maximum	**4.1541**	**42.4585**	**22.1013**	**0.0395**	**18.2032**	**2.1984**	**20.4016**	**9.9670**	**2.0225**	**11.9895**	**0.0000**	**3,827.9339**	**3,827.9339**	**1.1959**	**0.0000**	**3,857.8321**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1541	42.4585	22.1013	0.0395	18.1925	2.1984	20.3908	9.9644	2.0225	11.9869	0.0000	3,827.9339	3,827.9339	1.1959	0.0000	3,857.8321
Maximum	**4.1541**	**42.4585**	**22.1013**	**0.0395**	**18.1925**	**2.1984**	**20.3908**	**9.9644**	**2.0225**	**11.9869**	**0.0000**	**3,827.9339**	**3,827.9339**	**1.1959**	**0.0000**	**3,857.8321**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.06**	**0.00**	**0.05**	**0.03**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	45.4354	1.6362	141.8195	7.5200e-003		0.7892	0.7892		0.7892	0.7892	0.0000	256.2636	256.2636	0.2440	0.0000	262.3627
Energy	0.9051	7.7375	3.3119	0.0494		0.6254	0.6254		0.6254	0.6254		9,874.0650	9,874.0650	0.1893	0.1810	9,932.7416
Mobile	11.1907	44.2416	113.6978	0.5075	57.1263	0.2412	57.3674	15.2518	0.2241	15.4759		51,719.1982	51,719.1982	1.7796		51,763.6877
Total	**57.5312**	**53.6153**	**258.8291**	**0.5644**	**57.1263**	**1.6558**	**58.7820**	**15.2518**	**1.6387**	**16.8905**	**0.0000**	**61,849.5268**	**61,849.5268**	**2.2128**	**0.1810**	**61,958.7920**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	45.4354	1.6362	141.8195	7.5200e-003		0.7892	0.7892		0.7892	0.7892	0.0000	256.2636	256.2636	0.2440	0.0000	262.3627
Energy	0.9051	7.7375	3.3119	0.0494		0.6254	0.6254		0.6254	0.6254		9,874.0650	9,874.0650	0.1893	0.1810	9,932.7416
Mobile	10.6565	41.8912	99.2027	0.4367	48.5573	0.2105	48.7678	12.9641	0.1955	13.1596		44,516.2929	44,516.2929	1.5747		44,555.6592
Total	**56.9970**	**51.2649**	**244.3340**	**0.4936**	**48.5573**	**1.6251**	**50.1824**	**12.9641**	**1.6101**	**14.5742**	**0.0000**	**54,646.6215**	**54,646.6215**	**2.0079**	**0.1810**	**54,750.7636**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.93**	**4.38**	**5.60**	**12.54**	**15.00**	**1.85**	**14.63**	**15.00**	**1.74**	**13.71**	**0.00**	**11.65**	**11.65**	**9.26**	**0.00**	**11.63**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Placeholder (see Construction model for Construction Emissions)	Site Preparation	1/1/2020	9/8/2020	5	180	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 5

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Placeholder (see Construction model for Construction Emissions)	Rubber Tired Dozers	3	8.00	247	0.40
Placeholder (see Construction model for Construction Emissions)	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Placeholder (see Construction model for	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Clean Paved Roads

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0776	0.0412	0.5877	1.4400e-003	0.1369	9.5000e-004	0.1379	0.0363	8.8000e-004	0.0372		142.8323	142.8323	4.0900e-003		142.9346
Total	**0.0776**	**0.0412**	**0.5877**	**1.4400e-003**	**0.1369**	**9.5000e-004**	**0.1379**	**0.0363**	**8.8000e-004**	**0.0372**		**142.8323**	**142.8323**	**4.0900e-003**		**142.9346**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0776	0.0412	0.5877	1.4400e-003	0.1262	9.5000e-004	0.1272	0.0337	8.8000e-004	0.0346		142.8323	142.8323	4.0900e-003		142.9346
Total	**0.0776**	**0.0412**	**0.5877**	**1.4400e-003**	**0.1262**	**9.5000e-004**	**0.1272**	**0.0337**	**8.8000e-004**	**0.0346**		**142.8323**	**142.8323**	**4.0900e-003**		**142.9346**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	10.6565	41.8912	99.2027	0.4367	48.5573	0.2105	48.7678	12.9641	0.1955	13.1596		44,516.2929	44,516.2929	1.5747		44,555.6592
Unmitigated	11.1907	44.2416	113.6978	0.5075	57.1263	0.2412	57.3674	15.2518	0.2241	15.4759		51,719.1982	51,719.1982	1.7796		51,763.6877

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,152.40	1,152.40	1152.40	2,957,184	2,661,466
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	897.92	897.92	897.92	1,254,668	1,129,201
Retirement Community	121.60	121.60	121.60	312,039	280,835
Retirement Community	2,358.40	2,358.40	2358.40	6,051,911	5,446,720
Single Family Housing	6,394.50	6,394.50	6394.50	16,408,984	14,768,086
Total	10,924.82	10,924.82	10,924.82	26,984,786	24,286,308

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Regional Shopping Center	10.00	5.00	6.50	16.30	64.70	19.00	54	35	11
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Other Asphalt Surfaces	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Parking Lot	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Regional Shopping Center	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.9051	7.7375	3.3119	0.0494		0.6254	0.6254		0.6254	0.6254		9,874.0650	9,874.0650	0.1893	0.1810	9,932.7416
NaturalGas Unmitigated	0.9051	7.7375	3.3119	0.0494		0.6254	0.6254		0.6254	0.6254		9,874.0650	9,874.0650	0.1893	0.1810	9,932.7416

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	5742.03	0.0619	0.5292	0.2252	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5331	675.5331	0.0130	0.0124	679.5475
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	475.178	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355
Retirement Community	1259.59	0.0136	0.1161	0.0494	7.4000e-004		9.3900e-003	9.3900e-003		9.3900e-003	9.3900e-003		148.1874	148.1874	2.8400e-003	2.7200e-003	149.0680
Retirement Community	24429.5	0.2635	2.2513	0.9580	0.0144		0.1820	0.1820		0.1820	0.1820		2,874.0553	2,874.0553	0.0551	0.0527	2,891.1344
Single Family Housing	52023.3	0.5610	4.7943	2.0401	0.0306		0.3876	0.3876		0.3876	0.3876		6,120.3859	6,120.3859	0.1173	0.1122	6,156.7563
Total		**0.9051**	**7.7375**	**3.3119**	**0.0494**		**0.6254**	**0.6254**		**0.6254**	**0.6254**		**9,874.0650**	**9,874.0650**	**0.1893**	**0.1810**	**9,932.7416**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	5.74203	0.0619	0.5292	0.2252	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5331	675.5331	0.0130	0.0124	679.5475
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.475178	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355
Retirement Community	1.25959	0.0136	0.1161	0.0494	7.4000e-004		9.3900e-003	9.3900e-003		9.3900e-003	9.3900e-003		148.1874	148.1874	2.8400e-003	2.7200e-003	149.0680
Retirement Community	24.4295	0.2635	2.2513	0.9580	0.0144		0.1820	0.1820		0.1820	0.1820		2,874.0553	2,874.0553	0.0551	0.0527	2,891.1344
Single Family Housing	52.0233	0.5610	4.7943	2.0401	0.0306		0.3876	0.3876		0.3876	0.3876		6,120.3859	6,120.3859	0.1173	0.1122	6,156.7563
Total		**0.9051**	**7.7375**	**3.3119**	**0.0494**		**0.6254**	**0.6254**		**0.6254**	**0.6254**		**9,874.0650**	**9,874.0650**	**0.1893**	**0.1810**	**9,932.7416**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Non-Residential Interior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	45.4354	1.6362	141.8195	7.5200e-003		0.7892	0.7892		0.7892	0.7892	0.0000	256.2636	256.2636	0.2440	0.0000	262.3627
Unmitigated	45.4354	1.6362	141.8195	7.5200e-003		0.7892	0.7892		0.7892	0.7892	0.0000	256.2636	256.2636	0.2440	0.0000	262.3627

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.0699					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	36.1248					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.2407	1.6362	141.8195	7.5200e-003		0.7892	0.7892		0.7892	0.7892		256.2636	256.2636	0.2440		262.3627
Total	**45.4354**	**1.6362**	**141.8195**	**7.5200e-003**		**0.7892**	**0.7892**		**0.7892**	**0.7892**	**0.0000**	**256.2636**	**256.2636**	**0.2440**	**0.0000**	**262.3627**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.0699					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	36.1248					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.2407	1.6362	141.8195	7.5200e-003		0.7892	0.7892		0.7892	0.7892		256.2636	256.2636	0.2440		262.3627
Total	**45.4354**	**1.6362**	**141.8195**	**7.5200e-003**		**0.7892**	**0.7892**		**0.7892**	**0.7892**	**0.0000**	**256.2636**	**256.2636**	**0.2440**	**0.0000**	**262.3627**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Unmitigated

Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0
Other Asphalt Surfaces	2.50	Acre	2.50	108,900.00	0
Parking Lot	1.50	Acre	1.50	65,340.00	0
City Park	9.10	Acre	9.28	396,396.00	0
City Park	3.07	Acre	3.69	133,729.20	0
City Park	0.50	Acre	1.40	21,780.00	0
Apartments Mid Rise	215.00	Dwelling Unit	7.17	215,000.00	621
Retirement Community	38.00	Dwelling Unit	1.26	38,000.00	78
Retirement Community	737.00	Dwelling Unit	90.91	737,000.00	1533
Single Family Housing	735.00	Dwelling Unit	77.87	1,323,000.00	2087
Regional Shopping Center	32.00	1000sqft	5.16	32,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Buildout Year: 2029

Land Use - Land use info as provided by the unit counts/gross acres/sf provided by applicant. 8,000sf restroom is in the 9.1acre park. 21,000sf clubhouse/restroom is incl. in the 3.07ac city park. Pop. as provided in the Pop & Housing section of the EIR.

Construction Phase - Note - constructed not modeled under this (operational) scenario.

Off-road Equipment -

Trips and VMT -

Grading - Assumes whole project site is graded (except for protected areas) = 319.9 acres. 152,708 CY of material exported from project site (as provided by the Project Applicant).

Architectural Coating -

Vehicle Trips - Trip rates used from Traffic Impact Memo (June, 2019), inclusive of average internal capture rate the traffic consultant applied to AM and PM peak hours. Park trips are assumed to be accounted for by the land uses provided in the Traffic Impact Memo.

Road Dust - Project will not have unpaved roads during the project's operational phase. Since the project is in the SMAQMD jursidiction, project uses the CARB's 2.0 and 0.2 method (per CalEEMod User Guidebook).

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 29.1% - reflects project person/du value (2.504) vs. statewide avg. (2.97) and latest statewide data (ARB).

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.87 - 90.91 - 7.17 - 5.16 - 32.3 - 20.59 - 17.34 = 278.76 acres

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation - Density = ~6.86 du/acre. Increase walkability design (123.53 int/sq. mile). Improve ped network. Provide traffic calming (50%/50%). 100% increase in transit coverage (current coverage=0). Provide Transit Accessibility (0.25 mile)

Mobile Commute Mitigation -

Area Mitigation - No hearths are to be installed as part of the proposed project. Flat (i.e. non-reflective) paints are assumed for projects building interiors. (see SMAQMD Rule 442 - maximum VOC content for flat paints is 50 g/L).

Energy Mitigation - High-efficiency lighting (LEDs) (71.5% improvement). EE appliances. 95% electricity generated via renewables (on-site or SMUD contract).

Water Mitigation - Installation of low-floor indoor water use fixtures, and use of water-efficient irrigation systems (consistent with the current version of Title 24).

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Unmitigated - Sacramento County, Winter

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Residential_Interior	100	50
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConsumerProducts	ROG_EF	2.14E-05	1.5173E-05
tblLandUse	LotAcreage	0.50	1.40
tblLandUse	LotAcreage	3.07	3.69
tblLandUse	LotAcreage	9.10	9.28
tblLandUse	LotAcreage	5.66	7.17
tblLandUse	LotAcreage	7.60	1.26
tblLandUse	LotAcreage	147.40	90.91
tblLandUse	LotAcreage	238.64	77.87
tblLandUse	LotAcreage	0.73	5.16
tblLandUse	Population	574.00	621.00
tblLandUse	Population	101.00	78.00
tblLandUse	Population	1,968.00	1,533.00
tblLandUse	Population	1,962.00	2,087.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblVehicleTrips	ST_TR	6.39	5.36
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	49.97	28.06
tblVehicleTrips	ST_TR	2.03	3.20
tblVehicleTrips	ST_TR	9.91	8.70
tblVehicleTrips	SU_TR	5.86	5.36
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	25.24	28.06

tblVehicleTrips	SU_TR	1.95	3.20
tblVehicleTrips	SU_TR	8.62	8.70
tblVehicleTrips	WD_TR	6.65	5.36
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	42.70	28.06
tblVehicleTrips	WD_TR	2.40	3.20
tblVehicleTrips	WD_TR	9.52	8.70

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1479	42.4682	22.0168	0.0393	18.2032	2.1984	20.4016	9.9670	2.0225	11.9895	0.0000	3,810.5415	3,810.5415	1.1955	0.0000	3,840.4276
Maximum	**4.1479**	**42.4682**	**22.0168**	**0.0393**	**18.2032**	**2.1984**	**20.4016**	**9.9670**	**2.0225**	**11.9895**	**0.0000**	**3,810.5415**	**3,810.5415**	**1.1955**	**0.0000**	**3,840.4276**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1479	42.4682	22.0168	0.0393	18.1925	2.1984	20.3908	9.9644	2.0225	11.9869	0.0000	3,810.5415	3,810.5415	1.1955	0.0000	3,840.4276
Maximum	**4.1479**	**42.4682**	**22.0168**	**0.0393**	**18.1925**	**2.1984**	**20.3908**	**9.9644**	**2.0225**	**11.9869**	**0.0000**	**3,810.5415**	**3,810.5415**	**1.1955**	**0.0000**	**3,840.4276**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.06**	**0.00**	**0.05**	**0.03**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	45.4354	1.6362	141.8195	7.5200e-003		0.7892	0.7892		0.7892	0.7892	0.0000	256.2636	256.2636	0.2440	0.0000	262.3627
Energy	0.9051	7.7375	3.3119	0.0494		0.6254	0.6254		0.6254	0.6254		9,874.0650	9,874.0650	0.1893	0.1810	9,932.7416
Mobile	8.1033	45.9804	103.0139	0.4605	57.1263	0.2423	57.3686	15.2518	0.2252	15.4770		47,001.5129	47,001.5129	1.8071		47,046.6896
Total	**54.4438**	**55.3541**	**248.1452**	**0.5174**	**57.1263**	**1.6569**	**58.7832**	**15.2518**	**1.6398**	**16.8916**	**0.0000**	**57,131.8415**	**57,131.8415**	**2.2403**	**0.1810**	**57,241.7940**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	45.4354	1.6362	141.8195	7.5200e-003		0.7892	0.7892		0.7892	0.7892	0.0000	256.2636	256.2636	0.2440	0.0000	262.3627
Energy	0.9051	7.7375	3.3119	0.0494		0.6254	0.6254		0.6254	0.6254		9,874.0650	9,874.0650	0.1893	0.1810	9,932.7416
Mobile	7.5774	43.3084	91.2448	0.3963	48.5573	0.2116	48.7689	12.9641	0.1966	13.1607		40,454.2516	40,454.2516	1.6093		40,494.4845
Total	**53.9179**	**52.6821**	**236.3761**	**0.4532**	**48.5573**	**1.6262**	**50.1835**	**12.9641**	**1.6112**	**14.5753**	**0.0000**	**50,584.5802**	**50,584.5802**	**2.0425**	**0.1810**	**50,689.5888**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.97**	**4.83**	**4.74**	**12.41**	**15.00**	**1.85**	**14.63**	**15.00**	**1.74**	**13.71**	**0.00**	**11.46**	**11.46**	**8.83**	**0.00**	**11.45**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Placeholder (see Construction model for Construction Emissions)	Site Preparation	1/1/2020	9/8/2020	5	180	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 5

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Placeholder (see Construction model for Construction Emissions)	Rubber Tired Dozers	3	8.00	247	0.40
Placeholder (see Construction model for Construction Emissions)	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Placeholder (see Construction model for	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Clean Paved Roads

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0714	0.0509	0.5032	1.2600e-003	0.1369	9.5000e-004	0.1379	0.0363	8.8000e-004	0.0372		125.4399	125.4399	3.6100e-003		125.5301
Total	**0.0714**	**0.0509**	**0.5032**	**1.2600e-003**	**0.1369**	**9.5000e-004**	**0.1379**	**0.0363**	**8.8000e-004**	**0.0372**		**125.4399**	**125.4399**	**3.6100e-003**		**125.5301**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0714	0.0509	0.5032	1.2600e-003	0.1262	9.5000e-004	0.1272	0.0337	8.8000e-004	0.0346		125.4399	125.4399	3.6100e-003		125.5301
Total	**0.0714**	**0.0509**	**0.5032**	**1.2600e-003**	**0.1262**	**9.5000e-004**	**0.1272**	**0.0337**	**8.8000e-004**	**0.0346**		**125.4399**	**125.4399**	**3.6100e-003**		**125.5301**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.5774	43.3084	91.2448	0.3963	48.5573	0.2116	48.7689	12.9641	0.1966	13.1607		40,454.2516	40,454.2516	1.6093		40,494.4845
Unmitigated	8.1033	45.9804	103.0139	0.4605	57.1263	0.2423	57.3686	15.2518	0.2252	15.4770		47,001.5129	47,001.5129	1.8071		47,046.6896

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,152.40	1,152.40	1152.40	2,957,184	2,661,466
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	897.92	897.92	897.92	1,254,668	1,129,201
Retirement Community	121.60	121.60	121.60	312,039	280,835
Retirement Community	2,358.40	2,358.40	2358.40	6,051,911	5,446,720
Single Family Housing	6,394.50	6,394.50	6394.50	16,408,984	14,768,086
Total	10,924.82	10,924.82	10,924.82	26,984,786	24,286,308

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Regional Shopping Center	10.00	5.00	6.50	16.30	64.70	19.00	54	35	11
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Other Asphalt Surfaces	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Parking Lot	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Regional Shopping Center	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.9051	7.7375	3.3119	0.0494		0.6254	0.6254		0.6254	0.6254		9,874.0650	9,874.0650	0.1893	0.1810	9,932.7416
NaturalGas Unmitigated	0.9051	7.7375	3.3119	0.0494		0.6254	0.6254		0.6254	0.6254		9,874.0650	9,874.0650	0.1893	0.1810	9,932.7416

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	5742.03	0.0619	0.5292	0.2252	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5331	675.5331	0.0130	0.0124	679.5475
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	475.178	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355
Retirement Community	1259.59	0.0136	0.1161	0.0494	7.4000e-004		9.3900e-003	9.3900e-003		9.3900e-003	9.3900e-003		148.1874	148.1874	2.8400e-003	2.7200e-003	149.0680
Retirement Community	24429.5	0.2635	2.2513	0.9580	0.0144		0.1820	0.1820		0.1820	0.1820		2,874.0553	2,874.0553	0.0551	0.0527	2,891.1344
Single Family Housing	52023.3	0.5610	4.7943	2.0401	0.0306		0.3876	0.3876		0.3876	0.3876		6,120.3859	6,120.3859	0.1173	0.1122	6,156.7563
Total		**0.9051**	**7.7375**	**3.3119**	**0.0494**		**0.6254**	**0.6254**		**0.6254**	**0.6254**		**9,874.0650**	**9,874.0650**	**0.1893**	**0.1810**	**9,932.7416**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	5.74203	0.0619	0.5292	0.2252	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5331	675.5331	0.0130	0.0124	679.5475
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.475178	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355
Retirement Community	1.25959	0.0136	0.1161	0.0494	7.4000e-004		9.3900e-003	9.3900e-003		9.3900e-003	9.3900e-003		148.1874	148.1874	2.8400e-003	2.7200e-003	149.0680
Retirement Community	24.4295	0.2635	2.2513	0.9580	0.0144		0.1820	0.1820		0.1820	0.1820		2,874.0553	2,874.0553	0.0551	0.0527	2,891.1344
Single Family Housing	52.0233	0.5610	4.7943	2.0401	0.0306		0.3876	0.3876		0.3876	0.3876		6,120.3859	6,120.3859	0.1173	0.1122	6,156.7563
Total		**0.9051**	**7.7375**	**3.3119**	**0.0494**		**0.6254**	**0.6254**		**0.6254**	**0.6254**		**9,874.0650**	**9,874.0650**	**0.1893**	**0.1810**	**9,932.7416**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Non-Residential Interior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	45.4354	1.6362	141.8195	7.5200e-003		0.7892	0.7892		0.7892	0.7892	0.0000	256.2636	256.2636	0.2440	0.0000	262.3627
Unmitigated	45.4354	1.6362	141.8195	7.5200e-003		0.7892	0.7892		0.7892	0.7892	0.0000	256.2636	256.2636	0.2440	0.0000	262.3627

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.0699					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	36.1248					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.2407	1.6362	141.8195	7.5200e-003		0.7892	0.7892		0.7892	0.7892		256.2636	256.2636	0.2440		262.3627
Total	**45.4354**	**1.6362**	**141.8195**	**7.5200e-003**		**0.7892**	**0.7892**		**0.7892**	**0.7892**	**0.0000**	**256.2636**	**256.2636**	**0.2440**	**0.0000**	**262.3627**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.0699					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	36.1248					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.2407	1.6362	141.8195	7.5200e-003		0.7892	0.7892		0.7892	0.7892		256.2636	256.2636	0.2440		262.3627
Total	**45.4354**	**1.6362**	**141.8195**	**7.5200e-003**		**0.7892**	**0.7892**		**0.7892**	**0.7892**	**0.0000**	**256.2636**	**256.2636**	**0.2440**	**0.0000**	**262.3627**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Mitigated

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0
Other Asphalt Surfaces	2.50	Acre	2.50	108,900.00	0
Parking Lot	1.50	Acre	1.50	65,340.00	0
City Park	9.10	Acre	9.28	396,396.00	0
City Park	3.07	Acre	3.69	133,729.20	0
City Park	0.50	Acre	1.40	21,780.00	0
Apartments Mid Rise	215.00	Dwelling Unit	7.17	215,000.00	621
Retirement Community	38.00	Dwelling Unit	1.26	38,000.00	78
Retirement Community	737.00	Dwelling Unit	90.91	737,000.00	1533
Single Family Housing	735.00	Dwelling Unit	77.87	1,323,000.00	2087
Regional Shopping Center	32.00	1000sqft	5.16	32,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Buildout Year: 2035

Land Use - Land use info as provided by the unit counts/gross acres/sf provided by applicant. 8,000sf restroom is in the 9.1acre park. 21,000sf clubhouse/restroom is incl. in the 3.07ac city park. Pop. as provided in the Pop & Housing section of the EIR.

Construction Phase - Note - constructed not modeled under this (operational) scenario.

Off-road Equipment -

Trips and VMT -

Grading - Assumes whole project site is graded (except for protected areas) = 319.9 acres. 152,708 CY of material exported from project site (as provided by the Project Applicant).

Architectural Coating -

Vehicle Trips - Trip rates used from Traffic Impact Memo (June, 2019), inclusive of average internal capture rate the traffic consultant applied to AM and PM peak hours. Park trips are assumed to be accounted for by the land uses provided in the Traffic Impact Memo.

Road Dust - Project will not have unpaved roads during the project's operational phase. Since the project is in the SMAQMD jursidiction, project uses the CARB's 2.0 and 0.2 method (per CalEEMod User Guidebook).

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 29.1% - reflects project person/du value (2.504) vs. statewide avg. (2.97) and latest statewide data (ARB).

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.87 - 90.91 - 7.17 - 5.16 - 32.3 - 20.59 - 17.34 = 278.76 acres

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation - Density = ~6.86 du/acre. Increase walkability design (123.53 int/sq. mile). Improve ped network. Provide traffic calming (50%/50%). 100% increase in transit coverage (current coverage=0). Provide Transit Accessibility (0.25 mile)

Mobile Commute Mitigation - Mitigation: Implement Trip Reduction Program (100% employee eligilbe; voluntary).

Area Mitigation - No hearths are to be installed as part of the proposed project. Flat (i.e. non-reflective) paints are assumed for projects building interiors. (see SMAQMD Rule 442 - maximum VOC content for flat paints is 50 g/L).

Energy Mitigation - High-efficiency lighting (LEDs) (71.5% improvement). EE appliances. 95% electricity generated via renewables (on-site or SMUD contract). Mitigation: Exceed Title 24 by 2%.

Water Mitigation - Install low-floor indoor water use fixtures, and use water-efficient irrigation systems (=current version of Title 24). Mitigation: Apply water conservation strategy (50% native or drought-resistant trees outdoors - assume 25% reduction outdoor).

Fleet Mix -

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Mitigated - Sacramento County, Annual

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Residential_Interior	100	50
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConsumerProducts	ROG_EF	2.14E-05	1.52E-05
tblLandUse	LotAcreage	0.50	1.40
tblLandUse	LotAcreage	3.07	3.69
tblLandUse	LotAcreage	9.10	9.28
tblLandUse	LotAcreage	5.66	7.17
tblLandUse	LotAcreage	7.60	1.26
tblLandUse	LotAcreage	147.40	90.91
tblLandUse	LotAcreage	238.64	77.87
tblLandUse	LotAcreage	0.73	5.16
tblLandUse	Population	574.00	621.00
tblLandUse	Population	101.00	78.00
tblLandUse	Population	1,968.00	1,533.00
tblLandUse	Population	1,962.00	2,087.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblVehicleTrips	ST_TR	6.39	5.36
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	49.97	28.06
tblVehicleTrips	ST_TR	2.03	3.20
tblVehicleTrips	ST_TR	9.91	8.70
tblVehicleTrips	SU_TR	5.86	5.36
tblVehicleTrips	SU_TR	16.74	0.00

tblVehicleTrips	SU_TR	25.24	28.06
tblVehicleTrips	SU_TR	1.95	3.20
tblVehicleTrips	SU_TR	8.62	8.70
tblVehicleTrips	WD_TR	6.65	5.36
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	42.70	28.06
tblVehicleTrips	WD_TR	2.40	3.20
tblVehicleTrips	WD_TR	9.52	8.70

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3729	3.8217	1.9811	3.5400e-003	1.6379	0.1979	1.8357	0.8969	0.1820	1.0790	0.0000	311.4180	311.4180	0.0976	0.0000	313.8582
Maximum	**0.3729**	**3.8217**	**1.9811**	**3.5400e-003**	**1.6379**	**0.1979**	**1.8357**	**0.8969**	**0.1820**	**1.0790**	**0.0000**	**311.4180**	**311.4180**	**0.0976**	**0.0000**	**313.8582**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3729	3.8216	1.9811	3.5400e-003	1.6369	0.1979	1.8348	0.8967	0.1820	1.0787	0.0000	311.4177	311.4177	0.0976	0.0000	313.8579
Maximum	**0.3729**	**3.8216**	**1.9811**	**3.5400e-003**	**1.6369**	**0.1979**	**1.8348**	**0.8967**	**0.1820**	**1.0787**	**0.0000**	**311.4177**	**311.4177**	**0.0976**	**0.0000**	**313.8579**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.06**	**0.00**	**0.05**	**0.03**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2020	3-31-2020	1.5150	1.5150
2	4-1-2020	6-30-2020	1.5149	1.5149
3	7-1-2020	9-30-2020	1.1653	1.1653
		Highest	1.5150	1.5150

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.1240	0.2045	17.7274	9.4000e-004		0.0987	0.0987		0.0987	0.0987	0.0000	29.0598	29.0598	0.0277	0.0000	29.7514
Energy	0.1652	1.4121	0.6044	9.0100e-003		0.1141	0.1141		0.1141	0.1141	0.0000	4,619.0251	4,619.0251	0.1779	0.0603	4,641.4440
Mobile	1.5875	8.2466	18.2704	0.0857	10.0427	0.0439	10.0866	2.6889	0.0408	2.7297	0.0000	7,936.6038	7,936.6038	0.2912	0.0000	7,943.8825
Waste						0.0000	0.0000		0.0000	0.0000	251.9950	0.0000	251.9950	14.8925	0.0000	624.3070
Water						0.0000	0.0000		0.0000	0.0000	40.6026	235.0189	275.6215	0.1513	0.0907	306.4284
Total	**9.8766**	**9.8632**	**36.6023**	**0.0957**	**10.0427**	**0.2567**	**10.2994**	**2.6889**	**0.2536**	**2.9425**	**292.5976**	**12,819.7076**	**13,112.3053**	**15.5405**	**0.1510**	**13,545.8133**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.1240	0.2045	17.7274	9.4000e-004		0.0987	0.0987		0.0987	0.0987	0.0000	29.0598	29.0598	0.0277	0.0000	29.7514
Energy	0.1624	1.3882	0.5942	8.8600e-003		0.1122	0.1122		0.1122	0.1122	0.0000	1,730.6825	1,730.6825	0.0369	0.0307	1,740.7587
Mobile	1.4763	7.7027	15.6969	0.0717	8.2720	0.0374	8.3093	2.2148	0.0347	2.2495	0.0000	6,640.5756	6,640.5756	0.2528	0.0000	6,646.8954
Waste						0.0000	0.0000		0.0000	0.0000	251.9950	0.0000	251.9950	14.8925	0.0000	624.3070
Water						0.0000	0.0000		0.0000	0.0000	40.6026	214.5410	255.1436	0.1503	0.0905	285.8633
Total	**9.7626**	**9.2953**	**34.0185**	**0.0815**	**8.2720**	**0.2482**	**8.5202**	**2.2148**	**0.2456**	**2.4603**	**292.5976**	**8,614.8589**	**8,907.4565**	**15.3601**	**0.1212**	**9,327.5759**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.15**	**5.76**	**7.06**	**14.81**	**17.63**	**3.31**	**17.27**	**17.63**	**3.17**	**16.39**	**0.00**	**32.80**	**32.07**	**1.16**	**19.73**	**31.14**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	1,585.9200
Vegetation Land Change	-1,083.2754
Total	**502.6446**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Placeholder (see Construction model for Construction Emissions)	Site Preparation	1/1/2020	9/8/2020	5	180	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 5

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Placeholder (see Construction model for Construction Emissions)	Rubber Tired Dozers	3	8.00	247	0.40
Placeholder (see Construction model for Construction Emissions)	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Placeholder (see Construction model for	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Clean Paved Roads

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6260	0.0000	1.6260	0.8938	0.0000	0.8938	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3669	3.8176	1.9362	3.4200e-003		0.1978	0.1978		0.1820	0.1820	0.0000	300.8761	300.8761	0.0973	0.0000	303.3089
Total	**0.3669**	**3.8176**	**1.9362**	**3.4200e-003**	**1.6260**	**0.1978**	**1.8237**	**0.8938**	**0.1820**	**1.0757**	**0.0000**	**300.8761**	**300.8761**	**0.0973**	**0.0000**	**303.3089**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0300e-003	4.0900e-003	0.0448	1.2000e-004	0.0119	9.0000e-005	0.0120	3.1600e-003	8.0000e-005	3.2400e-003	0.0000	10.5419	10.5419	3.0000e-004	0.0000	10.5494
Total	**6.0300e-003**	**4.0900e-003**	**0.0448**	**1.2000e-004**	**0.0119**	**9.0000e-005**	**0.0120**	**3.1600e-003**	**8.0000e-005**	**3.2400e-003**	**0.0000**	**10.5419**	**10.5419**	**3.0000e-004**	**0.0000**	**10.5494**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6260	0.0000	1.6260	0.8938	0.0000	0.8938	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3669	3.8176	1.9362	3.4200e-003		0.1978	0.1978		0.1820	0.1820	0.0000	300.8758	300.8758	0.0973	0.0000	303.3085
Total	**0.3669**	**3.8176**	**1.9362**	**3.4200e-003**	**1.6260**	**0.1978**	**1.8237**	**0.8938**	**0.1820**	**1.0757**	**0.0000**	**300.8758**	**300.8758**	**0.0973**	**0.0000**	**303.3085**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0300e-003	4.0900e-003	0.0448	1.2000e-004	0.0110	9.0000e-005	0.0111	2.9400e-003	8.0000e-005	3.0200e-003	0.0000	10.5419	10.5419	3.0000e-004	0.0000	10.5494
Total	**6.0300e-003**	**4.0900e-003**	**0.0448**	**1.2000e-004**	**0.0110**	**9.0000e-005**	**0.0111**	**2.9400e-003**	**8.0000e-005**	**3.0200e-003**	**0.0000**	**10.5419**	**10.5419**	**3.0000e-004**	**0.0000**	**10.5494**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

Implement Trip Reduction Program

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.4763	7.7027	15.6969	0.0717	8.2720	0.0374	8.3093	2.2148	0.0347	2.2495	0.0000	6,640.5756	6,640.5756	0.2528	0.0000	6,646.8954
Unmitigated	1.5875	8.2466	18.2704	0.0857	10.0427	0.0439	10.0866	2.6889	0.0408	2.7297	0.0000	7,936.6038	7,936.6038	0.2912	0.0000	7,943.8825

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,152.40	1,152.40	1152.40	2,957,184	2,580,422
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	897.92	897.92	897.92	1,254,668	1,082,369
Retirement Community	121.60	121.60	121.60	312,039	272,283
Retirement Community	2,358.40	2,358.40	2358.40	6,051,911	5,280,864
Single Family Housing	6,394.50	6,394.50	6394.50	16,408,984	14,318,387
Total	10,924.82	10,924.82	10,924.82	26,984,786	23,534,324

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Regional Shopping Center	10.00	5.00	6.50	16.30	64.70	19.00	54	35	11
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Other Asphalt Surfaces	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Parking Lot	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Regional Shopping Center	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Mitigated - Sacramento County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	123.6369	123.6369	6.0700e-003	1.2600e-003	124.1632
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,984.2630	2,984.2630	0.1466	0.0303	2,996.9672
NaturalGas Mitigated	0.1624	1.3882	0.5942	8.8600e-003		0.1122	0.1122		0.1122	0.1122	0.0000	1,607.0456	1,607.0456	0.0308	0.0295	1,616.5955
NaturalGas Unmitigated	0.1652	1.4121	0.6044	9.0100e-003		0.1141	0.1141		0.1141	0.1141	0.0000	1,634.7622	1,634.7622	0.0313	0.0300	1,644.4768

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.09584e+006	0.0113	0.0966	0.0411	6.2000e-004		7.8100e-003	7.8100e-003		7.8100e-003	7.8100e-003	0.0000	111.8421	111.8421	2.1400e-003	2.0500e-003	112.5067
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	173440	9.4000e-004	8.5000e-003	7.1400e-003	5.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	9.2554	9.2554	1.8000e-004	1.7000e-004	9.3104
Retirement Community	459751	2.4800e-003	0.0212	9.0100e-003	1.4000e-004		1.7100e-003	1.7100e-003		1.7100e-003	1.7100e-003	0.0000	24.5341	24.5341	4.7000e-004	4.5000e-004	24.6799
Retirement Community	8.91676e+006	0.0481	0.4109	0.1748	2.6200e-003		0.0332	0.0332		0.0332	0.0332	0.0000	475.8321	475.8321	9.1200e-003	8.7200e-003	478.6597
Single Family Housing	1.89885e+007	0.1024	0.8750	0.3723	5.5800e-003		0.0707	0.0707		0.0707	0.0707	0.0000	1,013.2985	1,013.2985	0.0194	0.0186	1,019.3201
Total		**0.1652**	**1.4121**	**0.6044**	**9.0100e-003**		**0.1141**	**0.1141**		**0.1141**	**0.1141**	**0.0000**	**1,634.7622**	**1,634.7622**	**0.0313**	**0.0300**	**1,644.4768**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.06548e+006	0.0111	0.0952	0.0405	6.1000e-004		7.6900e-003	7.6900e-003		7.6900e-003	7.6900e-003	0.0000	110.2218	110.2218	2.1100e-003	2.0200e-003	110.8768
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	170566	9.2000e-004	8.3600e-003	7.0200e-003	5.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	9.1021	9.1021	1.7000e-004	1.7000e-004	9.1562
Retirement Community	452598	2.4400e-003	0.0209	8.8700e-003	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.1524	24.1524	4.6000e-004	4.4000e-004	24.2959
Retirement Community	8.77803e+006	0.0473	0.4045	0.1721	2.5800e-003		0.0327	0.0327		0.0327	0.0327	0.0000	468.4290	468.4290	8.9800e-003	8.5900e-003	471.2126
Single Family Housing	1.86482e+007	0.1006	0.8593	0.3657	5.4800e-003		0.0695	0.0695		0.0695	0.0695	0.0000	995.1404	995.1404	0.0191	0.0182	1,001.0540
Total		**0.1624**	**1.3882**	**0.5942**	**8.8500e-003**		**0.1122**	**0.1122**		**0.1122**	**0.1122**	**0.0000**	**1,607.0456**	**1,607.0456**	**0.0308**	**0.0295**	**1,616.5955**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	915139	245.0377	0.0120	2.4900e-003	246.0808
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	22869	6.1234	3.0000e-004	6.0000e-005	6.1495
Regional Shopping Center	370240	99.1355	4.8700e-003	1.0100e-003	99.5575
Retirement Community	178029	47.6691	2.3400e-003	4.8000e-004	47.8721
Retirement Community	3.45283e+006	924.5302	0.0454	9.4000e-003	928.4660
Single Family Housing	6.20618e+006	1,661.7670	0.0816	0.0169	1,668.8413
Total		**2,984.2630**	**0.1466**	**0.0303**	**2,996.9672**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	38817.8	10.3939	5.1000e-004	1.1000e-004	10.4381
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	325.883	0.0873	0.0000	0.0000	0.0876
Regional Shopping Center	12063	3.2300	1.6000e-004	3.0000e-005	3.2437
Retirement Community	141866	37.9861	1.8700e-003	3.9000e-004	38.1478
Retirement Community	7314.68	1.9586	1.0000e-004	2.0000e-005	1.9669
Single Family Housing	261358	69.9811	3.4400e-003	7.1000e-004	70.2790
Total		**123.6369**	**6.0800e-003**	**1.2600e-003**	**124.1632**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Non-Residential Interior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.1240	0.2045	17.7274	9.4000e-004		0.0987	0.0987		0.0987	0.0987	0.0000	29.0598	29.0598	0.0277	0.0000	29.7514
Unmitigated	8.1240	0.2045	17.7274	9.4000e-004		0.0987	0.0987		0.0987	0.0987	0.0000	29.0598	29.0598	0.0277	0.0000	29.7514

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.9314					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.6625					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5301	0.2045	17.7274	9.4000e-004		0.0987	0.0987		0.0987	0.0987	0.0000	29.0598	29.0598	0.0277	0.0000	29.7514
Total	**8.1240**	**0.2045**	**17.7274**	**9.4000e-004**		**0.0987**	**0.0987**		**0.0987**	**0.0987**	**0.0000**	**29.0598**	**29.0598**	**0.0277**	**0.0000**	**29.7514**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.9314					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.6625					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5301	0.2045	17.7274	9.4000e-004		0.0987	0.0987		0.0987	0.0987	0.0000	29.0598	29.0598	0.0277	0.0000	29.7514
Total	**8.1240**	**0.2045**	**17.7274**	**9.4000e-004**		**0.0987**	**0.0987**		**0.0987**	**0.0987**	**0.0000**	**29.0598**	**29.0598**	**0.0277**	**0.0000**	**29.7514**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	255.1436	0.1503	0.0905	285.8633
Unmitigated	275.6215	0.1513	0.0907	306.4284

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	14.0081 / 8.8312	31.9212	0.0184	0.0111	35.6742
City Park	0 / 15.0961	14.1474	7.0000e-004	1.4000e-004	14.2077
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	2.37032 / 1.45278	5.3625	3.1100e-003	1.8700e-003	5.9973
Retirement Community	50.4944 / 31.8334	115.0646	0.0663	0.0398	128.5931
Single Family Housing	47.8882 / 30.1904	109.1258	0.0628	0.0378	121.9560
Total		**275.6215**	**0.1513**	**0.0907**	**306.4284**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	14.0081 / 6.6234	29.8521	0.0183	0.0110	33.5963
City Park	0 / 11.3221	10.6106	5.2000e-004	1.1000e-004	10.6558
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	2.37032 / 1.08958	5.0221	3.0900e-003	1.8700e-003	5.6555
Retirement Community	50.4944 / 23.8751	107.6064	0.0659	0.0398	121.1031
Single Family Housing	47.8882 / 22.6428	102.0525	0.0625	0.0377	114.8526
Total		**255.1436**	**0.1503**	**0.0905**	**285.8633**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	251.9950	14.8925	0.0000	624.3070
Unmitigated	251.9950	14.8925	0.0000	624.3070

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	98.9	20.0758	1.1865	0.0000	49.7370
City Park	1.09	0.2213	0.0131	0.0000	0.5482
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	33.6	6.8205	0.4031	0.0000	16.8975
Retirement Community	356.5	72.3663	4.2767	0.0000	179.2844
Single Family Housing	751.32	152.5112	9.0132	0.0000	377.8400
Total		**251.9950**	**14.8925**	**0.0000**	**624.3070**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	98.9	20.0758	1.1865	0.0000	49.7370
City Park	1.09	0.2213	0.0131	0.0000	0.5482
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	33.6	6.8205	0.4031	0.0000	16.8975
Retirement Community	356.5	72.3663	4.2767	0.0000	179.2844
Single Family Housing	751.32	152.5112	9.0132	0.0000	377.8400
Total		**251.9950**	**14.8925**	**0.0000**	**624.3070**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	502.6446	0.0000	0.0000	502.6446

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	530.1 / 278.76	-1,083.2754	0.0000	0.0000	-1,083.2754
Total		**-1,083.2754**	**0.0000**	**0.0000**	**-1,083.2754**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	2240	1,585.9200	0.0000	0.0000	1,585.9200
Total		**1,585.9200**	**0.0000**	**0.0000**	**1,585.9200**

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only - without passenger cars

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0
Other Asphalt Surfaces	2.50	Acre	2.50	108,900.00	0
Parking Lot	1.50	Acre	1.50	65,340.00	0
City Park	9.10	Acre	9.28	396,396.00	0
City Park	3.07	Acre	3.69	133,729.20	0
City Park	0.50	Acre	1.40	21,780.00	0
Apartments Mid Rise	215.00	Dwelling Unit	7.17	215,000.00	621
Retirement Community	38.00	Dwelling Unit	1.26	38,000.00	78
Retirement Community	737.00	Dwelling Unit	90.91	737,000.00	1533
Single Family Housing	735.00	Dwelling Unit	77.87	1,323,000.00	2087
Regional Shopping Center	32.00	1000sqft	5.16	32,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Buildout Year: 2035

Land Use - Land use info as provided by the unit counts/gross acres/sf provided by applicant. 8,000sf restroom is in the 9.1acre park. 21,000sf clubhouse/restroom is incl. in the 3.07ac city park. Pop. as provided in the Pop & Housing section of the EIR.

Construction Phase - Note - constructed not modeled under this (operational) scenario.

Off-road Equipment -

Trips and VMT -

Grading - Assumes whole project site is graded (except for protected areas) = 319.9 acres. 152,708 CY of material exported from project site (as provided by the Project Applicant).

Architectural Coating -

Vehicle Trips - Trip rates used from Traffic Impact Memo (June, 2019), inclusive of average internal capture rate the traffic consultant applied to AM and PM peak hours. Park trips are assumed to be accounted for by the land uses provided in the Traffic Impact Memo.

Road Dust - Project will not have unpaved roads during the project's operational phase. Since the project is in the SMAQMD jursidiction, project uses the CARB's 2.0 and 0.2 method (per CalEEMod User Guidebook).

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 29.1% - reflects project person/du value (2.504) vs. statewide avg. (2.97) and latest statewide data (ARB).

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.87 - 90.91 - 7.17 - 5.16 - 32.3 - 20.59 - 17.34 = 278.76 acres

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation - Density = ~6.86 du/acre. Increase walkability design (123.53 int/sq. mile). Improve ped network. Provide traffic calming (50%/50%). 100% increase in transit coverage (current coverage=0). Provide Transit Accessibility (0.25 mile)

Mobile Commute Mitigation -

Area Mitigation - No hearths are to be installed as part of the proposed project. Flat (i.e. non-reflective) paints are assumed for projects building interiors. (see SMAQMD Rule 442 - maximum VOC content for flat paints is 50 g/L).

Energy Mitigation - High-efficiency lighting (LEDs) (71.5% improvement). EE appliances. 95% electricity generated via renewables (on-site or SMUD contract).

Water Mitigation - Installation of low-floor indoor water use fixtures, and use of water-efficient irrigation systems (consistent with the current version of Title 24).

Fleet Mix - Adjusted to account for the removal of passenger and light duty trucks for operational GHG emissions, per SB 375.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Residential_Interior	100	50
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConsumerProducts	ROG_EF	2.14E-05	1.52E-05
tblFleetMix	HHD	0.03	0.15
tblFleetMix	HHD	0.03	0.15
tblFleetMix	HHD	0.03	0.15
tblFleetMix	HHD	0.03	0.15
tblFleetMix	HHD	0.03	0.15
tblFleetMix	HHD	0.03	0.15
tblFleetMix	HHD	0.03	0.15
tblFleetMix	LDA	0.58	0.00
tblFleetMix	LDA	0.58	0.00
tblFleetMix	LDA	0.58	0.00
tblFleetMix	LDA	0.58	0.00
tblFleetMix	LDA	0.58	0.00
tblFleetMix	LDA	0.58	0.00
tblFleetMix	LDA	0.58	0.00
tblFleetMix	LDT1	0.03	0.00
tblFleetMix	LDT1	0.03	0.00
tblFleetMix	LDT1	0.03	0.00
tblFleetMix	LDT1	0.03	0.00
tblFleetMix	LDT1	0.03	0.00
tblFleetMix	LDT1	0.03	0.00
tblFleetMix	LDT1	0.03	0.00

tblFleetMix	LDT2	0.21	0.00
tblFleetMix	LDT2	0.21	0.00
tblFleetMix	LDT2	0.21	0.00
tblFleetMix	LDT2	0.21	0.00
tblFleetMix	LDT2	0.21	0.00
tblFleetMix	LDT2	0.21	0.00
tblFleetMix	LDT2	0.21	0.00
tblFleetMix	LHD1	0.01	0.06
tblFleetMix	LHD1	0.01	0.06
tblFleetMix	LHD1	0.01	0.06
tblFleetMix	LHD1	0.01	0.06
tblFleetMix	LHD1	0.01	0.06
tblFleetMix	LHD1	0.01	0.06
tblFleetMix	LHD1	0.01	0.06
tblFleetMix	LHD2	4.3250e-003	0.02
tblFleetMix	LHD2	4.3250e-003	0.02
tblFleetMix	LHD2	4.3250e-003	0.02
tblFleetMix	LHD2	4.3250e-003	0.02
tblFleetMix	LHD2	4.3250e-003	0.02
tblFleetMix	LHD2	4.3250e-003	0.02
tblFleetMix	LHD2	4.3250e-003	0.02
tblFleetMix	MCY	5.3920e-003	0.03
tblFleetMix	MCY	5.3920e-003	0.03
tblFleetMix	MCY	5.3920e-003	0.03
tblFleetMix	MCY	5.3920e-003	0.03
tblFleetMix	MCY	5.3920e-003	0.03
tblFleetMix	MCY	5.3920e-003	0.03

tblFleetMix	MCY	5.3920e-003	0.03
tblFleetMix	MDV	0.10	0.60
tblFleetMix	MDV	0.10	0.60
tblFleetMix	MDV	0.10	0.60
tblFleetMix	MDV	0.10	0.60
tblFleetMix	MDV	0.10	0.60
tblFleetMix	MDV	0.10	0.60
tblFleetMix	MDV	0.10	0.60
tblFleetMix	MH	5.6600e-004	3.2479e-003
tblFleetMix	MH	5.6600e-004	3.2479e-003
tblFleetMix	MH	5.6600e-004	3.2479e-003
tblFleetMix	MH	5.6600e-004	3.2479e-003
tblFleetMix	MH	5.6600e-004	3.2479e-003
tblFleetMix	MH	5.6600e-004	3.2479e-003
tblFleetMix	MH	5.6600e-004	3.2479e-003
tblFleetMix	MHD	0.02	0.11
tblFleetMix	MHD	0.02	0.11
tblFleetMix	MHD	0.02	0.11
tblFleetMix	MHD	0.02	0.11
tblFleetMix	MHD	0.02	0.11
tblFleetMix	MHD	0.02	0.11
tblFleetMix	MHD	0.02	0.11
tblFleetMix	OBUS	1.8520e-003	0.01
tblFleetMix	OBUS	1.8520e-003	0.01
tblFleetMix	OBUS	1.8520e-003	0.01
tblFleetMix	OBUS	1.8520e-003	0.01
tblFleetMix	OBUS	1.8520e-003	0.01

tblFleetMix	OBUS	1.8520e-003	0.01
tblFleetMix	OBUS	1.8520e-003	0.01
tblFleetMix	SBUS	5.9800e-004	3.4315e-003
tblFleetMix	SBUS	5.9800e-004	3.4315e-003
tblFleetMix	SBUS	5.9800e-004	3.4315e-003
tblFleetMix	SBUS	5.9800e-004	3.4315e-003
tblFleetMix	SBUS	5.9800e-004	3.4315e-003
tblFleetMix	SBUS	5.9800e-004	3.4315e-003
tblFleetMix	SBUS	5.9800e-004	3.4315e-003
tblFleetMix	UBUS	1.3620e-003	7.8155e-003
tblFleetMix	UBUS	1.3620e-003	7.8155e-003
tblFleetMix	UBUS	1.3620e-003	7.8155e-003
tblFleetMix	UBUS	1.3620e-003	7.8155e-003
tblFleetMix	UBUS	1.3620e-003	7.8155e-003
tblFleetMix	UBUS	1.3620e-003	7.8155e-003
tblFleetMix	UBUS	1.3620e-003	7.8155e-003
tblLandUse	LotAcreage	0.50	1.40
tblLandUse	LotAcreage	3.07	3.69
tblLandUse	LotAcreage	9.10	9.28
tblLandUse	LotAcreage	5.66	7.17
tblLandUse	LotAcreage	7.60	1.26
tblLandUse	LotAcreage	147.40	90.91
tblLandUse	LotAcreage	238.64	77.87
tblLandUse	LotAcreage	0.73	5.16
tblLandUse	Population	574.00	621.00
tblLandUse	Population	101.00	78.00
tblLandUse	Population	1,968.00	1,533.00

tblLandUse	Population	1,962.00	2,087.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblVehicleTrips	ST_TR	6.39	0.93
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	49.97	4.89
tblVehicleTrips	ST_TR	2.03	0.56
tblVehicleTrips	ST_TR	9.91	1.52
tblVehicleTrips	SU_TR	5.86	0.93
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	25.24	4.89
tblVehicleTrips	SU_TR	1.95	0.56
tblVehicleTrips	SU_TR	8.62	1.52
tblVehicleTrips	WD_TR	6.65	0.93
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	42.70	4.89
tblVehicleTrips	WD_TR	2.40	0.56
tblVehicleTrips	WD_TR	9.52	1.52

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.2645	2.7374	1.3569	2.3600e-003	1.0919	0.1435	1.2354	0.5980	0.1320	0.7300	0.0000	212.2630	212.2630	0.0651	0.0000	213.8902
2020	0.1243	1.2739	0.6604	1.1800e-003	0.5460	0.0660	0.6119	0.2990	0.0607	0.3597	0.0000	103.8060	103.8060	0.0325	0.0000	104.6194
Maximum	**0.2645**	**2.7374**	**1.3569**	**2.3600e-003**	**1.0919**	**0.1435**	**1.2354**	**0.5980**	**0.1320**	**0.7300**	**0.0000**	**212.2630**	**212.2630**	**0.0651**	**0.0000**	**213.8902**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.2645	2.7374	1.3569	2.3600e-003	1.0913	0.1435	1.2348	0.5978	0.1320	0.7298	0.0000	212.2627	212.2627	0.0651	0.0000	213.8899
2020	0.1243	1.2739	0.6604	1.1800e-003	0.5457	0.0660	0.6116	0.2989	0.0607	0.3596	0.0000	103.8059	103.8059	0.0325	0.0000	104.6193
Maximum	**0.2645**	**2.7374**	**1.3569**	**2.3600e-003**	**1.0913**	**0.1435**	**1.2348**	**0.5978**	**0.1320**	**0.7298**	**0.0000**	**212.2627**	**212.2627**	**0.0651**	**0.0000**	**213.8899**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.06**	**0.00**	**0.05**	**0.03**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	7-17-2019	10-16-2019	1.6441	1.6441
2	10-17-2019	1-16-2020	1.6247	1.6247
3	1-17-2020	4-16-2020	1.1321	1.1321
		Highest	1.6441	1.6441

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.0598	0.2045	17.7274	9.4000e-004		0.0987	0.0987		0.0987	0.0987	0.0000	29.0598	29.0598	0.0277	0.0000	29.7514
Energy	0.1652	1.4121	0.6044	9.0100e-003		0.1141	0.1141		0.1141	0.1141	0.0000	4,619.0251	4,619.0251	0.1779	0.0603	4,641.4440
Mobile	0.9301	7.5633	7.6537	0.0370	1.8751	0.0164	1.8915	0.5180	0.0155	0.5335	0.0000	3,525.3253	3,525.3253	0.2451	0.0000	3,531.4537
Waste						0.0000	0.0000		0.0000	0.0000	251.9950	0.0000	251.9950	14.8925	0.0000	624.3070
Water						0.0000	0.0000		0.0000	0.0000	40.6026	235.0189	275.6215	0.1513	0.0907	306.4284
Total	**9.1551**	**9.1799**	**25.9855**	**0.0470**	**1.8751**	**0.2292**	**2.1042**	**0.5180**	**0.2283**	**0.7463**	**292.5976**	**8,408.4291**	**8,701.0267**	**15.4945**	**0.1510**	**9,133.3844**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.0598	0.2045	17.7274	9.4000e-004		0.0987	0.0987		0.0987	0.0987	0.0000	29.0598	29.0598	0.0277	0.0000	29.7514
Energy	0.1652	1.4121	0.6044	9.0100e-003		0.1141	0.1141		0.1141	0.1141	0.0000	1,758.6933	1,758.6933	0.0374	0.0312	1,768.9354
Mobile	0.8524	7.1910	6.7575	0.0322	1.5938	0.0142	1.6080	0.4403	0.0134	0.4537	0.0000	3,063.3562	3,063.3562	0.2186	0.0000	3,068.8218
Waste						0.0000	0.0000		0.0000	0.0000	251.9950	0.0000	251.9950	14.8925	0.0000	624.3070
Water						0.0000	0.0000		0.0000	0.0000	32.4821	199.4008	231.8829	0.1216	0.0727	256.5769
Total	**9.0774**	**8.8076**	**25.0894**	**0.0421**	**1.5938**	**0.2270**	**1.8208**	**0.4403**	**0.2262**	**0.6665**	**284.4771**	**5,050.5101**	**5,334.9872**	**15.2978**	**0.1039**	**5,748.3925**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.85**	**4.06**	**3.45**	**10.35**	**15.00**	**0.97**	**13.47**	**15.00**	**0.92**	**10.69**	**2.78**	**39.94**	**38.69**	**1.27**	**31.19**	**37.06**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	1,585.9200
Vegetation Land Change	-1,083.2754
Total	**502.6446**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Placeholder (see Construction model for Construction Emissions)	Site Preparation	7/17/2019	3/24/2020	5	180	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 5

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Placeholder (see Construction model for Construction Emissions)	Rubber Tired Dozers	3	8.00	247	0.40
Placeholder (see Construction model for Construction Emissions)	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Placeholder (see Construction model for	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Clean Paved Roads

3.2 Placeholder (see Construction model for Construction Emissions) - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0840	0.0000	1.0840	0.5958	0.0000	0.5958	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2601	2.7344	1.3238	2.2800e-003		0.1434	0.1434		0.1320	0.1320	0.0000	205.0121	205.0121	0.0649	0.0000	206.6337
Total	**0.2601**	**2.7344**	**1.3238**	**2.2800e-003**	**1.0840**	**0.1434**	**1.2274**	**0.5958**	**0.1320**	**0.7278**	**0.0000**	**205.0121**	**205.0121**	**0.0649**	**0.0000**	**206.6337**

3.2 Placeholder (see Construction model for Construction Emissions) - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3700e-003	3.0700e-003	0.0331	8.0000e-005	7.9300e-003	6.0000e-005	7.9900e-003	2.1100e-003	5.0000e-005	2.1600e-003	0.0000	7.2508	7.2508	2.3000e-004	0.0000	7.2565
Total	**4.3700e-003**	**3.0700e-003**	**0.0331**	**8.0000e-005**	**7.9300e-003**	**6.0000e-005**	**7.9900e-003**	**2.1100e-003**	**5.0000e-005**	**2.1600e-003**	**0.0000**	**7.2508**	**7.2508**	**2.3000e-004**	**0.0000**	**7.2565**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0840	0.0000	1.0840	0.5958	0.0000	0.5958	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2601	2.7344	1.3238	2.2800e-003		0.1434	0.1434		0.1320	0.1320	0.0000	205.0119	205.0119	0.0649	0.0000	206.6335
Total	**0.2601**	**2.7344**	**1.3238**	**2.2800e-003**	**1.0840**	**0.1434**	**1.2274**	**0.5958**	**0.1320**	**0.7278**	**0.0000**	**205.0119**	**205.0119**	**0.0649**	**0.0000**	**206.6335**

3.2 Placeholder (see Construction model for Construction Emissions) - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3700e-003	3.0700e-003	0.0331	8.0000e-005	7.3100e-003	6.0000e-005	7.3700e-003	1.9600e-003	5.0000e-005	2.0100e-003	0.0000	7.2508	7.2508	2.3000e-004	0.0000	7.2565
Total	**4.3700e-003**	**3.0700e-003**	**0.0331**	**8.0000e-005**	**7.3100e-003**	**6.0000e-005**	**7.3700e-003**	**1.9600e-003**	**5.0000e-005**	**2.0100e-003**	**0.0000**	**7.2508**	**7.2508**	**2.3000e-004**	**0.0000**	**7.2565**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5420	0.0000	0.5420	0.2979	0.0000	0.2979	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1223	1.2725	0.6454	1.1400e-003		0.0659	0.0659		0.0607	0.0607	0.0000	100.2920	100.2920	0.0324	0.0000	101.1030
Total	**0.1223**	**1.2725**	**0.6454**	**1.1400e-003**	**0.5420**	**0.0659**	**0.6079**	**0.2979**	**0.0607**	**0.3586**	**0.0000**	**100.2920**	**100.2920**	**0.0324**	**0.0000**	**101.1030**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0100e-003	1.3600e-003	0.0150	4.0000e-005	3.9700e-003	3.0000e-005	3.9900e-003	1.0500e-003	3.0000e-005	1.0800e-003	0.0000	3.5140	3.5140	1.0000e-004	0.0000	3.5165
Total	**2.0100e-003**	**1.3600e-003**	**0.0150**	**4.0000e-005**	**3.9700e-003**	**3.0000e-005**	**3.9900e-003**	**1.0500e-003**	**3.0000e-005**	**1.0800e-003**	**0.0000**	**3.5140**	**3.5140**	**1.0000e-004**	**0.0000**	**3.5165**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5420	0.0000	0.5420	0.2979	0.0000	0.2979	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1223	1.2725	0.6454	1.1400e-003		0.0659	0.0659		0.0607	0.0607	0.0000	100.2919	100.2919	0.0324	0.0000	101.1028
Total	**0.1223**	**1.2725**	**0.6454**	**1.1400e-003**	**0.5420**	**0.0659**	**0.6079**	**0.2979**	**0.0607**	**0.3586**	**0.0000**	**100.2919**	**100.2919**	**0.0324**	**0.0000**	**101.1028**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0100e-003	1.3600e-003	0.0150	4.0000e-005	3.6600e-003	3.0000e-005	3.6900e-003	9.8000e-004	3.0000e-005	1.0100e-003	0.0000	3.5140	3.5140	1.0000e-004	0.0000	3.5165
Total	**2.0100e-003**	**1.3600e-003**	**0.0150**	**4.0000e-005**	**3.6600e-003**	**3.0000e-005**	**3.6900e-003**	**9.8000e-004**	**3.0000e-005**	**1.0100e-003**	**0.0000**	**3.5140**	**3.5140**	**1.0000e-004**	**0.0000**	**3.5165**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.8524	7.1910	6.7575	0.0322	1.5938	0.0142	1.6080	0.4403	0.0134	0.4537	0.0000	3,063.3562	3,063.3562	0.2186	0.0000	3,068.8218
Unmitigated	0.9301	7.5633	7.6537	0.0370	1.8751	0.0164	1.8915	0.5180	0.0155	0.5335	0.0000	3,525.3253	3,525.3253	0.2451	0.0000	3,531.4537

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	199.95	199.95	199.95	513,093	461,784
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	156.48	156.48	156.48	218,650	196,785
Retirement Community	21.28	21.28	21.28	54,607	49,146
Retirement Community	412.72	412.72	412.72	1,059,085	953,176
Single Family Housing	1,117.20	1,117.20	1117.20	2,866,857	2,580,171
Total	1,907.63	1,907.63	1,907.63	4,712,292	4,241,063

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Regional Shopping Center	10.00	5.00	6.50	16.30	64.70	19.00	54	35	11
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.000000	0.000000	0.000000	0.599599	0.060987	0.024818	0.107513	0.151020	0.010627	0.007816	0.030941	0.003431	0.003248
City Park	0.000000	0.000000	0.000000	0.599599	0.060987	0.024818	0.107513	0.151020	0.010627	0.007816	0.030941	0.003431	0.003248
Other Asphalt Surfaces	0.000000	0.000000	0.000000	0.599599	0.060987	0.024818	0.107513	0.151020	0.010627	0.007816	0.030941	0.003431	0.003248
Parking Lot	0.000000	0.000000	0.000000	0.599599	0.060987	0.024818	0.107513	0.151020	0.010627	0.007816	0.030941	0.003431	0.003248
Regional Shopping Center	0.000000	0.000000	0.000000	0.599599	0.060987	0.024818	0.107513	0.151020	0.010627	0.007816	0.030941	0.003431	0.003248
Retirement Community	0.000000	0.000000	0.000000	0.599599	0.060987	0.024818	0.107513	0.151020	0.010627	0.007816	0.030941	0.003431	0.003248
Single Family Housing	0.000000	0.000000	0.000000	0.599599	0.060987	0.024818	0.107513	0.151020	0.010627	0.007816	0.030941	0.003431	0.003248

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	123.9311	123.9311	6.0900e-003	1.2600e-003	124.4587
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,984.2630	2,984.2630	0.1466	0.0303	2,996.9672
NaturalGas Mitigated	0.1652	1.4121	0.6044	9.0100e-003		0.1141	0.1141		0.1141	0.1141	0.0000	1,634.7622	1,634.7622	0.0313	0.0300	1,644.4768
NaturalGas Unmitigated	0.1652	1.4121	0.6044	9.0100e-003		0.1141	0.1141		0.1141	0.1141	0.0000	1,634.7622	1,634.7622	0.0313	0.0300	1,644.4768

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.09584e+006	0.0113	0.0966	0.0411	6.2000e-004		7.8100e-003	7.8100e-003		7.8100e-003	7.8100e-003	0.0000	111.8421	111.8421	2.1400e-003	2.0500e-003	112.5067
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	173440	9.4000e-004	8.5000e-003	7.1400e-003	5.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	9.2554	9.2554	1.8000e-004	1.7000e-004	9.3104
Retirement Community	459751	2.4800e-003	0.0212	9.0100e-003	1.4000e-004		1.7100e-003	1.7100e-003		1.7100e-003	1.7100e-003	0.0000	24.5341	24.5341	4.7000e-004	4.5000e-004	24.6799
Retirement Community	8.91676e+006	0.0481	0.4109	0.1748	2.6200e-003		0.0332	0.0332		0.0332	0.0332	0.0000	475.8321	475.8321	9.1200e-003	8.7200e-003	478.6597
Single Family Housing	1.89885e+007	0.1024	0.8750	0.3723	5.5800e-003		0.0707	0.0707		0.0707	0.0707	0.0000	1,013.2985	1,013.2985	0.0194	0.0186	1,019.3201
Total		**0.1652**	**1.4121**	**0.6044**	**9.0100e-003**		**0.1141**	**0.1141**		**0.1141**	**0.1141**	**0.0000**	**1,634.7622**	**1,634.7622**	**0.0313**	**0.0300**	**1,644.4768**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.09584e+006	0.0113	0.0966	0.0411	6.2000e-004		7.8100e-003	7.8100e-003		7.8100e-003	7.8100e-003	0.0000	111.8421	111.8421	2.1400e-003	2.0500e-003	112.5067
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	173440	9.4000e-004	8.5000e-003	7.1400e-003	5.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	9.2554	9.2554	1.8000e-004	1.7000e-004	9.3104
Retirement Community	459751	2.4800e-003	0.0212	9.0100e-003	1.4000e-004		1.7100e-003	1.7100e-003		1.7100e-003	1.7100e-003	0.0000	24.5341	24.5341	4.7000e-004	4.5000e-004	24.6799
Retirement Community	8.91676e+006	0.0481	0.4109	0.1748	2.6200e-003		0.0332	0.0332		0.0332	0.0332	0.0000	475.8321	475.8321	9.1200e-003	8.7200e-003	478.6597
Single Family Housing	1.89885e+007	0.1024	0.8750	0.3723	5.5800e-003		0.0707	0.0707		0.0707	0.0707	0.0000	1,013.2985	1,013.2985	0.0194	0.0186	1,019.3201
Total		**0.1652**	**1.4121**	**0.6044**	**9.0100e-003**		**0.1141**	**0.1141**		**0.1141**	**0.1141**	**0.0000**	**1,634.7622**	**1,634.7622**	**0.0313**	**0.0300**	**1,644.4768**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	915139	245.0377	0.0120	2.4900e-003	246.0808
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	22869	6.1234	3.0000e-004	6.0000e-005	6.1495
Regional Shopping Center	370240	99.1355	4.8700e-003	1.0100e-003	99.5575
Retirement Community	178029	47.6691	2.3400e-003	4.8000e-004	47.8721
Retirement Community	3.45283e+006	924.5302	0.0454	9.4000e-003	928.4660
Single Family Housing	6.20618e+006	1,661.7670	0.0816	0.0169	1,668.8413
Total		**2,984.2630**	**0.1466**	**0.0303**	**2,996.9672**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	38916.9	10.4204	5.1000e-004	1.1000e-004	10.4647
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	325.883	0.0873	0.0000	0.0000	0.0876
Regional Shopping Center	12167.3	3.2579	1.6000e-004	3.0000e-005	3.2718
Retirement Community	142243	38.0870	1.8700e-003	3.9000e-004	38.2491
Retirement Community	7334.1	1.9638	1.0000e-004	2.0000e-005	1.9721
Single Family Housing	261857	70.1147	3.4400e-003	7.1000e-004	70.4132
Total		**123.9311**	**6.0800e-003**	**1.2600e-003**	**124.4586**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Non-Residential Interior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.0598	0.2045	17.7274	9.4000e-004		0.0987	0.0987		0.0987	0.0987	0.0000	29.0598	29.0598	0.0277	0.0000	29.7514
Unmitigated	8.0598	0.2045	17.7274	9.4000e-004		0.0987	0.0987		0.0987	0.0987	0.0000	29.0598	29.0598	0.0277	0.0000	29.7514

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.9253					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.6045					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5301	0.2045	17.7274	9.4000e-004		0.0987	0.0987		0.0987	0.0987	0.0000	29.0598	29.0598	0.0277	0.0000	29.7514
Total	**8.0598**	**0.2045**	**17.7274**	**9.4000e-004**		**0.0987**	**0.0987**		**0.0987**	**0.0987**	**0.0000**	**29.0598**	**29.0598**	**0.0277**	**0.0000**	**29.7514**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.9253					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.6045					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5301	0.2045	17.7274	9.4000e-004		0.0987	0.0987		0.0987	0.0987	0.0000	29.0598	29.0598	0.0277	0.0000	29.7514
Total	**8.0598**	**0.2045**	**17.7274**	**9.4000e-004**		**0.0987**	**0.0987**		**0.0987**	**0.0987**	**0.0000**	**29.0598**	**29.0598**	**0.0277**	**0.0000**	**29.7514**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	231.8829	0.1216	0.0727	256.5769
Unmitigated	275.6215	0.1513	0.0907	306.4284

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	14.0081 / 8.8312	31.9212	0.0184	0.0111	35.6742
City Park	0 / 15.0961	14.1474	7.0000e-004	1.4000e-004	14.2077
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	2.37032 / 1.45278	5.3625	3.1100e-003	1.8700e-003	5.9973
Retirement Community	50.4944 / 31.8334	115.0646	0.0663	0.0398	128.5931
Single Family Housing	47.8882 / 30.1904	109.1258	0.0628	0.0378	121.9560
Total		**275.6215**	**0.1513**	**0.0907**	**306.4284**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	11.2065 / 8.2925	26.6873	0.0148	8.8500e-003	29.6947
City Park	0 / 14.1752	13.2844	6.5000e-004	1.4000e-004	13.3410
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1.89626 / 1.36416	4.4792	2.5000e-003	1.5000e-003	4.9879
Retirement Community	40.3955 / 29.8916	96.1985	0.0532	0.0319	107.0389
Single Family Housing	38.3106 / 28.3488	91.2334	0.0505	0.0303	101.5143
Total		**231.8829**	**0.1216**	**0.0727**	**256.5769**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	251.9950	14.8925	0.0000	624.3070
Unmitigated	251.9950	14.8925	0.0000	624.3070

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	98.9	20.0758	1.1865	0.0000	49.7370
City Park	1.09	0.2213	0.0131	0.0000	0.5482
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	33.6	6.8205	0.4031	0.0000	16.8975
Retirement Community	356.5	72.3663	4.2767	0.0000	179.2844
Single Family Housing	751.32	152.5112	9.0132	0.0000	377.8400
Total		**251.9950**	**14.8925**	**0.0000**	**624.3070**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	98.9	20.0758	1.1865	0.0000	49.7370
City Park	1.09	0.2213	0.0131	0.0000	0.5482
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	33.6	6.8205	0.4031	0.0000	16.8975
Retirement Community	356.5	72.3663	4.2767	0.0000	179.2844
Single Family Housing	751.32	152.5112	9.0132	0.0000	377.8400
Total		**251.9950**	**14.8925**	**0.0000**	**624.3070**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	502.6446	0.0000	0.0000	502.6446

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	530.1 / 278.76	-1,083.2754	0.0000	0.0000	-1,083.2754
Total		**-1,083.2754**	**0.0000**	**0.0000**	**-1,083.2754**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	2240	1,585.9200	0.0000	0.0000	1,585.9200
Total		**1,585.9200**	**0.0000**	**0.0000**	**1,585.9200**

The Ranch (Full Buildout - 2035 - Operational Only - without passenger vehicles_mitigated

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0
Other Asphalt Surfaces	2.50	Acre	2.50	108,900.00	0
Parking Lot	1.50	Acre	1.50	65,340.00	0
City Park	9.10	Acre	9.28	396,396.00	0
City Park	3.07	Acre	3.69	133,729.20	0
City Park	0.50	Acre	1.40	21,780.00	0
Apartments Mid Rise	215.00	Dwelling Unit	7.17	215,000.00	621
Retirement Community	38.00	Dwelling Unit	1.26	38,000.00	78
Retirement Community	737.00	Dwelling Unit	90.91	737,000.00	1533
Single Family Housing	735.00	Dwelling Unit	77.87	1,323,000.00	2087
Regional Shopping Center	32.00	1000sqft	5.16	32,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Buildout Year: 2035

Land Use - Land use info as provided by the unit counts/gross acres/sf provided by applicant. 8,000sf restroom is in the 9.1acre park. 21,000sf clubhouse/restroom is incl. in the 3.07ac city park. Pop. as provided in the Pop & Housing section of the EIR.

Construction Phase - Note - constructed not modeled under this (operational) scenario.

Off-road Equipment -

Trips and VMT -

Grading - Assumes whole project site is graded (except for protected areas) = 319.9 acres. 152,708 CY of material exported from project site (as provided by the Project Applicant).

Architectural Coating -

Vehicle Trips - Trip rates used from Traffic Impact Memo (June, 2019), inclusive of average internal capture rate the traffic consultant applied to AM and PM peak hours. Park trips are assumed to be accounted for by the land uses provided in the Traffic Impact Memo.

Road Dust - Project will not have unpaved roads during the project's operational phase. Since the project is in the SMAQMD jursidiction, project uses the CARB's 2.0 and 0.2 method (per CalEEMod User Guidebook).

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 29.1% - reflects project person/du value (2.504) vs. statewide avg. (2.97) and latest statewide data (ARB).

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.87 - 90.91 - 7.17 - 5.16 - 32.3 - 20.59 - 17.34 = 278.76 acres

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation - Density = ~6.86 du/acre. Increase walkability design (123.53 int/sq. mile). Improve ped network. Provide traffic calming (50%/50%). 100% increase in transit coverage (current coverage=0). Provide Transit Accessibility (0.25 mile)

Mobile Commute Mitigation - Mitigation: Implement Trip Reduction Program (100% employee eligilbe; voluntary).

Area Mitigation - No hearths are to be installed as part of the proposed project. Flat (i.e. non-reflective) paints are assumed for projects building interiors. (see SMAQMD Rule 442 - maximum VOC content for flat paints is 50 g/L).

Energy Mitigation - High-efficiency lighting (LEDs) (71.5% improvement). EE appliances. 95% electricity generated via renewables (on-site or SMUD contract). Mitigation: Exceed Title 24 by 2%.

Water Mitigation - Install low-floor indoor water use fixtures, and use water-efficient irrigation systems (=current version of Title 24). Mitigation: Apply water conservation strategy (50% native or drought-resistant trees outdoors - assume 25% reduction outdoor).

Fleet Mix - Mobile vehicle trips updated to remove passenger cars and light-duty trucks, per SB 375.

The Ranch (Full Buildout - 2035 - Operational Only - without passenger vehicles_mitigated - Sacramento County, Annual

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Residential_Interior	100	50
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConsumerProducts	ROG_EF	2.14E-05	1.52E-05
tblFleetMix	HHD	0.03	0.15
tblFleetMix	HHD	0.03	0.15
tblFleetMix	HHD	0.03	0.15
tblFleetMix	HHD	0.03	0.15
tblFleetMix	HHD	0.03	0.15
tblFleetMix	HHD	0.03	0.15
tblFleetMix	HHD	0.03	0.15
tblFleetMix	LDA	0.58	0.00
tblFleetMix	LDA	0.58	0.00
tblFleetMix	LDA	0.58	0.00
tblFleetMix	LDA	0.58	0.00
tblFleetMix	LDA	0.58	0.00
tblFleetMix	LDA	0.58	0.00
tblFleetMix	LDA	0.58	0.00
tblFleetMix	LDT1	0.03	0.00
tblFleetMix	LDT1	0.03	0.00
tblFleetMix	LDT1	0.03	0.00
tblFleetMix	LDT1	0.03	0.00
tblFleetMix	LDT1	0.03	0.00
tblFleetMix	LDT1	0.03	0.00

tblFleetMix	LDT1	0.03	0.00
tblFleetMix	LDT2	0.21	0.00
tblFleetMix	LDT2	0.21	0.00
tblFleetMix	LDT2	0.21	0.00
tblFleetMix	LDT2	0.21	0.00
tblFleetMix	LDT2	0.21	0.00
tblFleetMix	LDT2	0.21	0.00
tblFleetMix	LDT2	0.21	0.00
tblFleetMix	LHD1	0.01	0.06
tblFleetMix	LHD1	0.01	0.06
tblFleetMix	LHD1	0.01	0.06
tblFleetMix	LHD1	0.01	0.06
tblFleetMix	LHD1	0.01	0.06
tblFleetMix	LHD1	0.01	0.06
tblFleetMix	LHD1	0.01	0.06
tblFleetMix	LHD2	4.3250e-003	0.02
tblFleetMix	LHD2	4.3250e-003	0.02
tblFleetMix	LHD2	4.3250e-003	0.02
tblFleetMix	LHD2	4.3250e-003	0.02
tblFleetMix	LHD2	4.3250e-003	0.02
tblFleetMix	LHD2	4.3250e-003	0.02
tblFleetMix	LHD2	4.3250e-003	0.02
tblFleetMix	MCY	5.3920e-003	0.03
tblFleetMix	MCY	5.3920e-003	0.03
tblFleetMix	MCY	5.3920e-003	0.03
tblFleetMix	MCY	5.3920e-003	0.03
tblFleetMix	MCY	5.3920e-003	0.03

tblFleetMix	MCY	5.3920e-003	0.03
tblFleetMix	MCY	5.3920e-003	0.03
tblFleetMix	MDV	0.10	0.60
tblFleetMix	MDV	0.10	0.60
tblFleetMix	MDV	0.10	0.60
tblFleetMix	MDV	0.10	0.60
tblFleetMix	MDV	0.10	0.60
tblFleetMix	MDV	0.10	0.60
tblFleetMix	MDV	0.10	0.60
tblFleetMix	MH	5.6600e-004	3.2479e-003
tblFleetMix	MH	5.6600e-004	3.2479e-003
tblFleetMix	MH	5.6600e-004	3.2479e-003
tblFleetMix	MH	5.6600e-004	3.2479e-003
tblFleetMix	MH	5.6600e-004	3.2479e-003
tblFleetMix	MH	5.6600e-004	3.2479e-003
tblFleetMix	MH	5.6600e-004	3.2479e-003
tblFleetMix	MHD	0.02	0.11
tblFleetMix	MHD	0.02	0.11
tblFleetMix	MHD	0.02	0.11
tblFleetMix	MHD	0.02	0.11
tblFleetMix	MHD	0.02	0.11
tblFleetMix	MHD	0.02	0.11
tblFleetMix	MHD	0.02	0.11
tblFleetMix	OBUS	1.8520e-003	0.01
tblFleetMix	OBUS	1.8520e-003	0.01
tblFleetMix	OBUS	1.8520e-003	0.01
tblFleetMix	OBUS	1.8520e-003	0.01

tblFleetMix	OBUS	1.8520e-003	0.01
tblFleetMix	OBUS	1.8520e-003	0.01
tblFleetMix	OBUS	1.8520e-003	0.01
tblFleetMix	SBUS	5.9800e-004	3.4315e-003
tblFleetMix	SBUS	5.9800e-004	3.4315e-003
tblFleetMix	SBUS	5.9800e-004	3.4315e-003
tblFleetMix	SBUS	5.9800e-004	3.4315e-003
tblFleetMix	SBUS	5.9800e-004	3.4315e-003
tblFleetMix	SBUS	5.9800e-004	3.4315e-003
tblFleetMix	SBUS	5.9800e-004	3.4315e-003
tblFleetMix	UBUS	1.3620e-003	7.8155e-003
tblFleetMix	UBUS	1.3620e-003	7.8155e-003
tblFleetMix	UBUS	1.3620e-003	7.8155e-003
tblFleetMix	UBUS	1.3620e-003	7.8155e-003
tblFleetMix	UBUS	1.3620e-003	7.8155e-003
tblFleetMix	UBUS	1.3620e-003	7.8155e-003
tblFleetMix	UBUS	1.3620e-003	7.8155e-003
tblLandUse	LotAcreage	0.50	1.40
tblLandUse	LotAcreage	3.07	3.69
tblLandUse	LotAcreage	9.10	9.28
tblLandUse	LotAcreage	5.66	7.17
tblLandUse	LotAcreage	7.60	1.26
tblLandUse	LotAcreage	147.40	90.91
tblLandUse	LotAcreage	238.64	77.87
tblLandUse	LotAcreage	0.73	5.16
tblLandUse	Population	574.00	621.00
tblLandUse	Population	101.00	78.00

tblLandUse	Population	1,968.00	1,533.00
tblLandUse	Population	1,962.00	2,087.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblVehicleTrips	ST_TR	6.39	0.93
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	49.97	4.89
tblVehicleTrips	ST_TR	2.03	0.56
tblVehicleTrips	ST_TR	9.91	1.52
tblVehicleTrips	SU_TR	5.86	0.93
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	25.24	4.89
tblVehicleTrips	SU_TR	1.95	0.56
tblVehicleTrips	SU_TR	8.62	1.52
tblVehicleTrips	WD_TR	6.65	0.93
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	42.70	4.89
tblVehicleTrips	WD_TR	2.40	0.56
tblVehicleTrips	WD_TR	9.52	1.52

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3729	3.8217	1.9811	3.5400e-003	1.6379	0.1979	1.8357	0.8969	0.1820	1.0790	0.0000	311.4180	311.4180	0.0976	0.0000	313.8582
Maximum	**0.3729**	**3.8217**	**1.9811**	**3.5400e-003**	**1.6379**	**0.1979**	**1.8357**	**0.8969**	**0.1820**	**1.0790**	**0.0000**	**311.4180**	**311.4180**	**0.0976**	**0.0000**	**313.8582**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3729	3.8216	1.9811	3.5400e-003	1.6369	0.1979	1.8348	0.8967	0.1820	1.0787	0.0000	311.4177	311.4177	0.0976	0.0000	313.8579
Maximum	**0.3729**	**3.8216**	**1.9811**	**3.5400e-003**	**1.6369**	**0.1979**	**1.8348**	**0.8967**	**0.1820**	**1.0787**	**0.0000**	**311.4177**	**311.4177**	**0.0976**	**0.0000**	**313.8579**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.06**	**0.00**	**0.05**	**0.03**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2020	3-31-2020	1.5150	1.5150
2	4-1-2020	6-30-2020	1.5149	1.5149
3	7-1-2020	9-30-2020	1.1653	1.1653
		Highest	1.5150	1.5150

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.1240	0.2045	17.7274	9.4000e-004		0.0987	0.0987		0.0987	0.0987	0.0000	29.0598	29.0598	0.0277	0.0000	29.7514
Energy	0.1652	1.4121	0.6044	9.0100e-003		0.1141	0.1141		0.1141	0.1141	0.0000	4,619.0251	4,619.0251	0.1779	0.0603	4,641.4440
Mobile	0.9301	7.5633	7.6537	0.0370	1.8751	0.0164	1.8915	0.5180	0.0155	0.5335	0.0000	3,525.3253	3,525.3253	0.2451	0.0000	3,531.4537
Waste						0.0000	0.0000		0.0000	0.0000	251.9950	0.0000	251.9950	14.8925	0.0000	624.3070
Water						0.0000	0.0000		0.0000	0.0000	40.6026	235.0189	275.6215	0.1513	0.0907	306.4284
Total	**9.2193**	**9.1799**	**25.9855**	**0.0470**	**1.8751**	**0.2292**	**2.1042**	**0.5180**	**0.2283**	**0.7463**	**292.5976**	**8,408.4291**	**8,701.0267**	**15.4945**	**0.1510**	**9,133.3844**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.1240	0.2045	17.7274	9.4000e-004		0.0987	0.0987		0.0987	0.0987	0.0000	29.0598	29.0598	0.0277	0.0000	29.7514
Energy	0.1624	1.3882	0.5942	8.8600e-003		0.1122	0.1122		0.1122	0.1122	0.0000	1,730.6825	1,730.6825	0.0369	0.0307	1,740.7587
Mobile	0.8387	7.1256	6.6003	0.0313	1.5445	0.0138	1.5582	0.4267	0.0130	0.4397	0.0000	2,982.3026	2,982.3026	0.2140	0.0000	2,987.6519
Waste						0.0000	0.0000		0.0000	0.0000	251.9950	0.0000	251.9950	14.8925	0.0000	624.3070
Water						0.0000	0.0000		0.0000	0.0000	40.6026	214.5410	255.1436	0.1503	0.0905	285.8633
Total	**9.1251**	**8.7183**	**24.9219**	**0.0411**	**1.5445**	**0.2246**	**1.7691**	**0.4267**	**0.2239**	**0.6506**	**292.5976**	**4,956.5859**	**5,249.1836**	**15.3213**	**0.1212**	**5,668.3324**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.02**	**5.03**	**4.09**	**12.48**	**17.63**	**1.99**	**15.93**	**17.63**	**1.94**	**12.83**	**0.00**	**41.05**	**39.67**	**1.12**	**19.73**	**37.94**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	1,585.9200
Vegetation Land Change	-1,083.2754
Total	**502.6446**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Placeholder (see Construction model for Construction Emissions)	Site Preparation	1/1/2020	9/8/2020	5	180	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 5

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Placeholder (see Construction model for Construction Emissions)	Rubber Tired Dozers	3	8.00	247	0.40
Placeholder (see Construction model for Construction Emissions)	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Placeholder (see Construction model for	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Clean Paved Roads

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6260	0.0000	1.6260	0.8938	0.0000	0.8938	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3669	3.8176	1.9362	3.4200e-003		0.1978	0.1978		0.1820	0.1820	0.0000	300.8761	300.8761	0.0973	0.0000	303.3089
Total	**0.3669**	**3.8176**	**1.9362**	**3.4200e-003**	**1.6260**	**0.1978**	**1.8237**	**0.8938**	**0.1820**	**1.0757**	**0.0000**	**300.8761**	**300.8761**	**0.0973**	**0.0000**	**303.3089**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0300e-003	4.0900e-003	0.0448	1.2000e-004	0.0119	9.0000e-005	0.0120	3.1600e-003	8.0000e-005	3.2400e-003	0.0000	10.5419	10.5419	3.0000e-004	0.0000	10.5494
Total	**6.0300e-003**	**4.0900e-003**	**0.0448**	**1.2000e-004**	**0.0119**	**9.0000e-005**	**0.0120**	**3.1600e-003**	**8.0000e-005**	**3.2400e-003**	**0.0000**	**10.5419**	**10.5419**	**3.0000e-004**	**0.0000**	**10.5494**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6260	0.0000	1.6260	0.8938	0.0000	0.8938	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3669	3.8176	1.9362	3.4200e-003		0.1978	0.1978		0.1820	0.1820	0.0000	300.8758	300.8758	0.0973	0.0000	303.3085
Total	**0.3669**	**3.8176**	**1.9362**	**3.4200e-003**	**1.6260**	**0.1978**	**1.8237**	**0.8938**	**0.1820**	**1.0757**	**0.0000**	**300.8758**	**300.8758**	**0.0973**	**0.0000**	**303.3085**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0300e-003	4.0900e-003	0.0448	1.2000e-004	0.0110	9.0000e-005	0.0111	2.9400e-003	8.0000e-005	3.0200e-003	0.0000	10.5419	10.5419	3.0000e-004	0.0000	10.5494
Total	**6.0300e-003**	**4.0900e-003**	**0.0448**	**1.2000e-004**	**0.0110**	**9.0000e-005**	**0.0111**	**2.9400e-003**	**8.0000e-005**	**3.0200e-003**	**0.0000**	**10.5419**	**10.5419**	**3.0000e-004**	**0.0000**	**10.5494**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

Implement Trip Reduction Program

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.8387	7.1256	6.6003	0.0313	1.5445	0.0138	1.5582	0.4267	0.0130	0.4397	0.0000	2,982.3026	2,982.3026	0.2140	0.0000	2,987.6519
Unmitigated	0.9301	7.5633	7.6537	0.0370	1.8751	0.0164	1.8915	0.5180	0.0155	0.5335	0.0000	3,525.3253	3,525.3253	0.2451	0.0000	3,531.4537

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	199.95	199.95	199.95	513,093	447,722
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	156.48	156.48	156.48	218,650	188,624
Retirement Community	21.28	21.28	21.28	54,607	47,650
Retirement Community	412.72	412.72	412.72	1,059,085	924,151
Single Family Housing	1,117.20	1,117.20	1117.20	2,866,857	2,501,603
Total	1,907.63	1,907.63	1,907.63	4,712,292	4,109,750

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Regional Shopping Center	10.00	5.00	6.50	16.30	64.70	19.00	54	35	11
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.000000	0.000000	0.000000	0.599599	0.060987	0.024818	0.107513	0.151020	0.010627	0.007816	0.030941	0.003431	0.003248
City Park	0.000000	0.000000	0.000000	0.599599	0.060987	0.024818	0.107513	0.151020	0.010627	0.007816	0.030941	0.003431	0.003248
Other Asphalt Surfaces	0.000000	0.000000	0.000000	0.599599	0.060987	0.024818	0.107513	0.151020	0.010627	0.007816	0.030941	0.003431	0.003248
Parking Lot	0.000000	0.000000	0.000000	0.599599	0.060987	0.024818	0.107513	0.151020	0.010627	0.007816	0.030941	0.003431	0.003248
Regional Shopping Center	0.000000	0.000000	0.000000	0.599599	0.060987	0.024818	0.107513	0.151020	0.010627	0.007816	0.030941	0.003431	0.003248
Retirement Community	0.000000	0.000000	0.000000	0.599599	0.060987	0.024818	0.107513	0.151020	0.010627	0.007816	0.030941	0.003431	0.003248
Single Family Housing	0.000000	0.000000	0.000000	0.599599	0.060987	0.024818	0.107513	0.151020	0.010627	0.007816	0.030941	0.003431	0.003248

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	123.6369	123.6369	6.0700e-003	1.2600e-003	124.1632
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,984.2630	2,984.2630	0.1466	0.0303	2,996.9672
NaturalGas Mitigated	0.1624	1.3882	0.5942	8.8600e-003		0.1122	0.1122		0.1122	0.1122	0.0000	1,607.0456	1,607.0456	0.0308	0.0295	1,616.5955
NaturalGas Unmitigated	0.1652	1.4121	0.6044	9.0100e-003		0.1141	0.1141		0.1141	0.1141	0.0000	1,634.7622	1,634.7622	0.0313	0.0300	1,644.4768

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.09584e+006	0.0113	0.0966	0.0411	6.2000e-004		7.8100e-003	7.8100e-003		7.8100e-003	7.8100e-003	0.0000	111.8421	111.8421	2.1400e-003	2.0500e-003	112.5067
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	173440	9.4000e-004	8.5000e-003	7.1400e-003	5.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	9.2554	9.2554	1.8000e-004	1.7000e-004	9.3104
Retirement Community	459751	2.4800e-003	0.0212	9.0100e-003	1.4000e-004		1.7100e-003	1.7100e-003		1.7100e-003	1.7100e-003	0.0000	24.5341	24.5341	4.7000e-004	4.5000e-004	24.6799
Retirement Community	8.91676e+006	0.0481	0.4109	0.1748	2.6200e-003		0.0332	0.0332		0.0332	0.0332	0.0000	475.8321	475.8321	9.1200e-003	8.7200e-003	478.6597
Single Family Housing	1.89885e+007	0.1024	0.8750	0.3723	5.5800e-003		0.0707	0.0707		0.0707	0.0707	0.0000	1,013.2985	1,013.2985	0.0194	0.0186	1,019.3201
Total		**0.1652**	**1.4121**	**0.6044**	**9.0100e-003**		**0.1141**	**0.1141**		**0.1141**	**0.1141**	**0.0000**	**1,634.7622**	**1,634.7622**	**0.0313**	**0.0300**	**1,644.4768**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.06548e+006	0.0111	0.0952	0.0405	6.1000e-004		7.6900e-003	7.6900e-003		7.6900e-003	7.6900e-003	0.0000	110.2218	110.2218	2.1100e-003	2.0200e-003	110.8768
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	170566	9.2000e-004	8.3600e-003	7.0200e-003	5.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	9.1021	9.1021	1.7000e-004	1.7000e-004	9.1562
Retirement Community	452598	2.4400e-003	0.0209	8.8700e-003	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.1524	24.1524	4.6000e-004	4.4000e-004	24.2959
Retirement Community	8.77803e+006	0.0473	0.4045	0.1721	2.5800e-003		0.0327	0.0327		0.0327	0.0327	0.0000	468.4290	468.4290	8.9800e-003	8.5900e-003	471.2126
Single Family Housing	1.86482e+007	0.1006	0.8593	0.3657	5.4800e-003		0.0695	0.0695		0.0695	0.0695	0.0000	995.1404	995.1404	0.0191	0.0182	1,001.0540
Total		**0.1624**	**1.3882**	**0.5942**	**8.8500e-003**		**0.1122**	**0.1122**		**0.1122**	**0.1122**	**0.0000**	**1,607.0456**	**1,607.0456**	**0.0308**	**0.0295**	**1,616.5955**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	915139	245.0377	0.0120	2.4900e-003	246.0808
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	22869	6.1234	3.0000e-004	6.0000e-005	6.1495
Regional Shopping Center	370240	99.1355	4.8700e-003	1.0100e-003	99.5575
Retirement Community	178029	47.6691	2.3400e-003	4.8000e-004	47.8721
Retirement Community	3.45283e+006	924.5302	0.0454	9.4000e-003	928.4660
Single Family Housing	6.20618e+006	1,661.7670	0.0816	0.0169	1,668.8413
Total		**2,984.2630**	**0.1466**	**0.0303**	**2,996.9672**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	38817.8	10.3939	5.1000e-004	1.1000e-004	10.4381
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	325.883	0.0873	0.0000	0.0000	0.0876
Regional Shopping Center	12063	3.2300	1.6000e-004	3.0000e-005	3.2437
Retirement Community	141866	37.9861	1.8700e-003	3.9000e-004	38.1478
Retirement Community	7314.68	1.9586	1.0000e-004	2.0000e-005	1.9669
Single Family Housing	261358	69.9811	3.4400e-003	7.1000e-004	70.2790
Total		**123.6369**	**6.0800e-003**	**1.2600e-003**	**124.1632**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Non-Residential Interior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.1240	0.2045	17.7274	9.4000e-004		0.0987	0.0987		0.0987	0.0987	0.0000	29.0598	29.0598	0.0277	0.0000	29.7514
Unmitigated	8.1240	0.2045	17.7274	9.4000e-004		0.0987	0.0987		0.0987	0.0987	0.0000	29.0598	29.0598	0.0277	0.0000	29.7514

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.9314					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.6625					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5301	0.2045	17.7274	9.4000e-004		0.0987	0.0987		0.0987	0.0987	0.0000	29.0598	29.0598	0.0277	0.0000	29.7514
Total	**8.1240**	**0.2045**	**17.7274**	**9.4000e-004**		**0.0987**	**0.0987**		**0.0987**	**0.0987**	**0.0000**	**29.0598**	**29.0598**	**0.0277**	**0.0000**	**29.7514**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.9314					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.6625					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5301	0.2045	17.7274	9.4000e-004		0.0987	0.0987		0.0987	0.0987	0.0000	29.0598	29.0598	0.0277	0.0000	29.7514
Total	**8.1240**	**0.2045**	**17.7274**	**9.4000e-004**		**0.0987**	**0.0987**		**0.0987**	**0.0987**	**0.0000**	**29.0598**	**29.0598**	**0.0277**	**0.0000**	**29.7514**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	255.1436	0.1503	0.0905	285.8633
Unmitigated	275.6215	0.1513	0.0907	306.4284

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	14.0081 / 8.8312	31.9212	0.0184	0.0111	35.6742
City Park	0 / 15.0961	14.1474	7.0000e-004	1.4000e-004	14.2077
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	2.37032 / 1.45278	5.3625	3.1100e-003	1.8700e-003	5.9973
Retirement Community	50.4944 / 31.8334	115.0646	0.0663	0.0398	128.5931
Single Family Housing	47.8882 / 30.1904	109.1258	0.0628	0.0378	121.9560
Total		**275.6215**	**0.1513**	**0.0907**	**306.4284**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	14.0081 / 6.6234	29.8521	0.0183	0.0110	33.5963
City Park	0 / 11.3221	10.6106	5.2000e-004	1.1000e-004	10.6558
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	2.37032 / 1.08958	5.0221	3.0900e-003	1.8700e-003	5.6555
Retirement Community	50.4944 / 23.8751	107.6064	0.0659	0.0398	121.1031
Single Family Housing	47.8882 / 22.6428	102.0525	0.0625	0.0377	114.8526
Total		**255.1436**	**0.1503**	**0.0905**	**285.8633**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	251.9950	14.8925	0.0000	624.3070
Unmitigated	251.9950	14.8925	0.0000	624.3070

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	98.9	20.0758	1.1865	0.0000	49.7370
City Park	1.09	0.2213	0.0131	0.0000	0.5482
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	33.6	6.8205	0.4031	0.0000	16.8975
Retirement Community	356.5	72.3663	4.2767	0.0000	179.2844
Single Family Housing	751.32	152.5112	9.0132	0.0000	377.8400
Total		**251.9950**	**14.8925**	**0.0000**	**624.3070**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	98.9	20.0758	1.1865	0.0000	49.7370
City Park	1.09	0.2213	0.0131	0.0000	0.5482
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	33.6	6.8205	0.4031	0.0000	16.8975
Retirement Community	356.5	72.3663	4.2767	0.0000	179.2844
Single Family Housing	751.32	152.5112	9.0132	0.0000	377.8400
Total		**251.9950**	**14.8925**	**0.0000**	**624.3070**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	502.6446	0.0000	0.0000	502.6446

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	530.1 / 278.76	-1,083.2754	0.0000	0.0000	-1,083.2754
Total		**-1,083.2754**	**0.0000**	**0.0000**	**-1,083.2754**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	2240	1,585.9200	0.0000	0.0000	1,585.9200
Total		**1,585.9200**	**0.0000**	**0.0000**	**1,585.9200**

APPENDIX B.2

Energy Outputs

EMFAC2014 (v1.0.7) Emissions Inventory
Region Type: County
Region: Sacramento
Calendar Year: 2035
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	Fuel_Consumption	MPG (derived)	
Sacramento	2035	All Other Buses	Aggregated	Aggregated	DSL	22233.66	2.629344999		
Sacramento	2035	LDA	Aggregated	Aggregated	GAS	21630456	524.4026837	**41.24779877**	
Sacramento	2035	LDA	Aggregated	Aggregated	DSL	295175.2	5.525945641		
Sacramento	2035	LDA	Aggregated	Aggregated	ELEC	3613908	0		
Sacramento	2035	LDT1	Aggregated	Aggregated	GAS	1498183	40.0111262	**37.44416099**	
Sacramento	2035	LDT1	Aggregated	Aggregated	DSL	1041.248	0.025198955		
Sacramento	2035	LDT1	Aggregated	Aggregated	ELEC	753.5268	0		
Sacramento	2035	LDT2	Aggregated	Aggregated	GAS	9369721	287.5059548	**32.58965998**	
Sacramento	2035	LDT2	Aggregated	Aggregated	DSL	20355.85	0.480150984		
Sacramento	2035	LHD1	Aggregated	Aggregated	GAS	178591.3	17.56600187		
Sacramento	2035	LHD1	Aggregated	Aggregated	DSL	290299.3	15.29068844	**18.98536748**	
Sacramento	2035	LHD2	Aggregated	Aggregated	GAS	55252.36	5.922458785		
Sacramento	2035	LHD2	Aggregated	Aggregated	DSL	135547.3	7.858518794	**17.24844976**	
Sacramento	2035	MCY	Aggregated	Aggregated	GAS	237894.5	6.406546433	**37.13303538**	
Sacramento	2035	MDV	Aggregated	Aggregated	GAS	4487432	185.1691305	**24.23423229**	
Sacramento	2035	MDV	Aggregated	Aggregated	DSL	122499.7	3.784733474		
Sacramento	2035	MH	Aggregated	Aggregated	GAS	19459.9	2.807099314	**6.932386617**	
Sacramento	2035	MH	Aggregated	Aggregated	DSL	5491.522	0.554860883		
Sacramento	2035	Motor Coach	Aggregated	Aggregated	DSL	22041.11	3.686475675		
Sacramento	2035	OBUS	Aggregated	Aggregated	GAS	37418.97	5.517001883	**6.782482236**	
Sacramento	2035	PTO	Aggregated	Aggregated	DSL	49875.41	9.05435394	**5.508444614**	
Sacramento	2035	SBUS	Aggregated	Aggregated	GAS	10244.2	0.846198674		
Sacramento	2035	SBUS	Aggregated	Aggregated	DSL	16149.27	2.154132951	**7.49687492**	**T6:**
Sacramento	2035	T6 Ag	Aggregated	Aggregated	DSL	17604.19	2.176865766	**8.086941368**	**8.572301**
Sacramento	2035	T6 CAIRP heavy	Aggregated	Aggregated	DSL	3353.228	0.38007424	**8.822560304**	
Sacramento	2035	T6 CAIRP small	Aggregated	Aggregated	DSL	10293.58	1.192148355	**8.634480785**	
Sacramento	2035	T6 instate constru	Aggregated	Aggregated	DSL	16875.89	1.968717561	**8.572023633**	
Sacramento	2035	T6 instate constru	Aggregated	Aggregated	DSL	127164.1	14.8229516	**8.578861636**	
Sacramento	2035	T6 instate heavy	Aggregated	Aggregated	DSL	140552.6	16.08535663	**8.737922544**	
Sacramento	2035	T6 instate small	Aggregated	Aggregated	DSL	355205	41.44553955	**8.570403237**	
Sacramento	2035	T6 OOS heavy	Aggregated	Aggregated	DSL	1921.274	0.217782888	**8.821967531**	
Sacramento	2035	T6 OOS small	Aggregated	Aggregated	DSL	5897.836	0.683056204	**8.634480785**	
Sacramento	2035	T6 Public	Aggregated	Aggregated	DSL	73575.15	8.791280881	**8.36910443**	
Sacramento	2035	T6 utility	Aggregated	Aggregated	DSL	3182.008	0.375832385	**8.466562704**	
Sacramento	2035	T6TS	Aggregated	Aggregated	GAS	70969.79	10.66845248		**T7:**
Sacramento	2035	T7 Ag	Aggregated	Aggregated	DSL	4668.489	0.967866345	**4.823485316**	**6.003096**
Sacramento	2035	T7 CAIRP	Aggregated	Aggregated	DSL	182872.4	27.58909489	**6.628428812**	
Sacramento	2035	T7 CAIRP construc	Aggregated	Aggregated	DSL	11971.63	1.871638272	**6.396337587**	
Sacramento	2035	T7 NNOOS	Aggregated	Aggregated	DSL	226761.9	34.73134382	**6.529028778**	
Sacramento	2035	T7 NOOS	Aggregated	Aggregated	DSL	72234.52	11.0685502	**6.52610537**	
Sacramento	2035	T7 other port	Aggregated	Aggregated	DSL	2376.099	0.349156438	**6.805257463**	
Sacramento	2035	T7 POAK	Aggregated	Aggregated	DSL	6918.384	1.02953255	**6.719927401**	
Sacramento	2035	T7 Public	Aggregated	Aggregated	DSL	123712.5	22.36480724	**5.53157229**	
Sacramento	2035	T7 Single	Aggregated	Aggregated	DSL	251182.5	37.68626982	**6.665093709**	
Sacramento	2035	T7 single construc	Aggregated	Aggregated	DSL	30969.03	4.707855525	**6.578161136**	
Sacramento	2035	T7 SWCV	Aggregated	Aggregated	DSL	39908.37	15.05959535	**2.650029126**	
Sacramento	2035	T7 tractor	Aggregated	Aggregated	DSL	124688.1	18.17126184	**6.861831307**	
Sacramento	2035	T7 tractor constru	Aggregated	Aggregated	DSL	23089.7	3.499250556	**6.598470757**	
Sacramento	2035	T7 utility	Aggregated	Aggregated	DSL	582.755	0.102191568	**5.702573735**	
Sacramento	2035	T7IS	Aggregated	Aggregated	GAS	9270.037	1.842896904	**5.030144288**	
Sacramento	2035	UBUS	Aggregated	Aggregated	GAS	29374.17	5.680473615		
Sacramento	2035	UBUS	Aggregated	Aggregated	DSL	30726.82	5.651887074	**5.171077821**	

APPENDIX B.3

Determination of MTP/SCS Consistency Worksheet

DETERMINATION OF MTP/SCS CONSISTENCY WORKSHEET
For Qualifying Transit Priority Projects and Residential/Mixed-Use Residential Projects

As of February 20, 2018[i]

Background: Pursuant to SB 375, streamlined CEQA review and analysis is available to Transit Priority Projects (TPPs) and residential or mixed-use residential projects that are consistent with the SCS. The SCS was adopted by the Sacramento Area Council of Governments (SACOG) Board as part of the 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy on February 18, 2016. The California Air Resources Board (CARB) provided an Acceptance of GHG Quantification Determination for the SACOG SCS in September 2016.

Streamlined CEQA review available to TPPs consists of one of the following: 1) a Sustainable Communities Environmental Assessment (SCEA) pursuant to Public Resources Code (PRC) § 21155.2(b) or 2) an EIR pursuant to PRC § 21155.2(c).[ii]

Streamlined CEQA review available to residential or mixed-use residential projects consists of an EIR pursuant to PRC § 21159.28(a).

Purpose: The purpose of this worksheet is to provide lead agencies with assistance on three issues:

1. Whether a proposed project qualifies as a TPP;
2. Whether a proposed project qualifies as a residential or mixed-use residential project (at least 75 percent of the total building square footage is residential);
3. Whether the TPP or residential/mixed-use residential project is consistent with the general land use designation, density, intensity and applicable policies of the 2016 MTP/SCS adopted by the Sacramento Area Council of Governments (SACOG).

The lead agency has responsibility to make the final determination on these matters and to determine the applicable and appropriate CEQA streamlining, if any.

Directions: This worksheet should be completed by the lead agency, relying on the project description of the proposed project, MTP/SCS Chapters 3 and 4, and MTP/SCS Appendix E-3. Regardless of whether this worksheet is used, pursuant to PRC § 21155(a) and PRC § 21159.28(a), a project can only be consistent with the MTP/SCS if it is consistent with the general land use designation, density, building intensity, and applicable policies specified for the project area in the adopted SCS. This worksheet only applies to the 2016 MTP/SCS (adopted February 18, 2016); subsequent MTP/SCS adoptions may require updates to this form.

Lead agencies are welcome to contact SACOG for assistance in completing this worksheet. For assistance, contact Kacey Lizon at klizon@sacog.org or 916-340-6265.

Project Title: The Ranch

Proposed project is located in (city/county name): City of Rancho Cordova

1. Transit Priority Project Designation (PRC § 21155(b))

A project must meet the requirements of items **1.A, 1.B, 1.C, and 1.D,** below, to qualify as a Transit Priority Project. **For items 1.C and 1.D**, the definition of an MTP/SCS Transit Priority Area is: the area within one-half mile of a rail station stop or a high-quality transit corridor included in the MTP/SCS. A high-quality transit corridor has fixed route bus service with service intervals of 15 minutes or less during peak commute hours. See MTP/SCS Chapter 3 for the map of Transit Priority Areas.

1.A. [ ] The Project has a minimum net density[iii] of 20 dwelling units per acre.

Calculation:

Total housing units proposed in Project ___÷ Total Project parcel area (in net[ii] acres)___

= _____ (Should be ≥20 du/ac)

1.B. [ ] At least 50 percent of the Project's total building square footage is in residential use, **AND**,

[ ] The total building square footage of the Project has 25 percent or less non-residential use, or, if it has between 26 and 50 percent in non-residential use, has a minimum FAR of 0.75.

Calculations:

Total Project residential square footage ____÷ Total Project building square footage__
= _____ (Should be ≥ 50%)

Total Project building square footage___÷ Total Project parcel(s) area square footage__
= _____(Should be ≥ 0.75)

1.C. [ ] The Project is located within an MTP/SCS Transit Priority Area and the qualifying transit service is *(transit route name/applicable street name/number or light rail stop name as identified in the adopted MTP/SCS)*: _____

1.D. [ ] No more than 25 percent of the area of the Project parcels are farther than one-half mile from the TPA transit stop/corridor and no more than 10 percent of the residential units or 100 units, whichever is less, in the project are farther than one-half mile from the TPA transit stop/corridor.

Calculations:

Project area outside of ½ mile TPA _____ ÷ Total Project area _____ = _____ (Should be ≤ 25%)

Project residential units outside of ½ mile TPA _____ ÷ Total Project units _____ = _____ (Should be ≤ 10% or less than 100 units)

SECTION 1 CONCLUSION:

[ ] The proposed project meets the requirements of 1.A, 1.B, 1.C, and 1.D and therefore qualifies as a Transit Priority Project.

[ ] The proposed project does not meet all the requirements of 1.A, 1.B, 1.C, and 1.D and therefore does not qualify as a Transit Priority Project.

2. Residential or Mixed-Use Residential Project Designation for Projects Located Outside of an MTP/SCS TPA 21159.28(a)

A residential or mixed-use residential project using the streamlined CEQA review to complete an EIR pursuant to PRC § 21159.28(a) must meet the following requirement:

2.A. [x] At least 75 percent of the total building square footage of the project consists of residential use.

Calculation:

Total Project residential square footage approx. 2,875,800 ÷ Total Project building square footage is approx. 2,934,800 = 98% (Should be ≥ 75%)

SECTION 2 CONCLUSION:

[x] The proposed project meets the requirements of 2.A and therefore qualifies as a residential or mixed-use residential project.

[ ] The proposed project does not meet the requirements of 2.A and therefore does not qualify as a residential or mixed-use residential project.

IF A PROJECT DOES NOT QUALIFY AS EITHER A TRANSIT PRIORITY PROJECT (UNDER SECTION 1) OR A RESIDENTIAL OR MIXED-USE RESIDENTIAL PROJECT (UNDER SECTION

2), THE PROJECT DOES NOT QUALIFY FOR SB 375 CEQA STREAMLINING. DO NOT PROCEED TO SECTION 3.

3. Required Consistency with the SCS: General Use Designation, Density and Intensity, and Applicable MTP/SCS Policies (PRC § 21155(a) and PRC § 21159.28(a))

3.A. Applicable MTP/SCS Policies. For the purposes of determining SCS consistency, the policies of the MTP/SCS are embedded in the metrics and growth forecast assumptions of the MTP/SCS. Projects consistent with the growth forecast assumptions of the MTP/SCS, as determined by application of items 3.B. and 3.C, are consistent with the MTP/SCS and its policies.

3.B. Applicable Community Type. The MTP/SCS land use forecast is illustrated using Community Types. In order to determine the general use designation, density and intensity of the Project area within the MTP/SCS, the Project must be located within a Community Type designated in the MTP/SCS. The MTP/SCS defines density/building intensity in terms of the amount of growth (residential and non-residential) forecasted and the amount of build out potential within each Community Type area. SACOG monitors development activity on an annual basis to check that the amount of development is consistent with the growth forecast of the MTP/SCS.

For the purposes of the lead agency's determination of SCS consistency, use MTP/SCS Appendix E-3 to identify the Community Type for the Project and fill in the applicable information, below for 3.B.1 and 3.B.2.

3.B.1. The Project is located in the following Community Type:

[ ] Center and Corridor Community

[ ] Established Community

[x] Developing Community *(list the specific name of the Developing Community as identified in the jurisdiction narrative in Appendix E-3)*: Ranch at Sunridge

[ ] Rural Residential Community

3.B.2 [x] Development from the project when added to other entitled projects will not exceed the MTP/SCS build out assumptions for the area within this Community Type, which is 152,027 new housing units and 81,837 new employees[iv].

3.C. General Use Designation, Density and Building Intensity. The foundation of the land use designations for the MTP/SCS is adopted and proposed local general plans, community plans, specific plans and other local policies and regulations. A project is consistent with the MTP/SCS if its uses are identified in the applicable MTP/SCS Community Type **and** its uses meet the general density and building intensity assumptions for the Community Type. The proposed project does not have to include all allowed uses in the MTP/SCS.

3.C.1. Determine consistency of the Project using one of the methods below:

Option A:

[ ] The Project is located in a **Center and Corridor Community or an Established Community** and the Project uses are consistent with the allowed uses of the applicable adopted local land use plan as it existed in 2012 and are at least 80 percent of the maximum allowed density or intensity of the allowed uses of the applicable local land use plans. Therefore, the Project is consistent with the MTP/SCS.[v]

OR

Option B:

[ ] The Project is located in a **Center and Corridor Community or an Established Community** and the Project uses have been reviewed in the context of, and are found to be consistent with, the general land use, density, and intensity information provided for this Community Type in Appendix E-3 of the MTP/SCS. Therefore, the Project is consistent with the MTP/SCS.

OR

Option C:

[ ] The Project is located in a **Rural Residential Community** and the Project residential density does not exceed the maximum density of one unit per acre as specified in the MTP/SCS, and employment development in the Project is at least 80 percent of the maximum allowed density or intensity of the applicable local land use plans. Therefore, the Project is consistent with the MTP/SCS.

OR

Option D:

[x] The Project is located in a **Developing Community** and the Project's average net density meets or exceed the average net density described for this specific

Developing Community (as referenced by name of applicable specific plan, master plan, or special plan in MTP/SCS Appendix E-3) and employment development in the Project is consistent with the general employment land uses described for this specific Developing Community.[vi] Therefore, the Project is consistent with the MTP/SCS.

SECTION 3 CONCLUSION:

The proposed project is consistent with the General Use Designation, Density and Intensity, and Applicable MTP/SCS Policies for the following reasons (*summarize findings on use designation, density and intensity for the Project evaluation completed in Section 3)*:

The proposed project (the "Ranch at Sunridge" in the MTP/SCS) is consistent with the general uses envisioned for the site in the MTP/SCS. The proposed average net residential density (7 units/acre) is consistent with the average net density of 7 units/acre described for the the Ranch at Sunridge (MTP/SCS Appendix E-3, p. 137); total residential development is less than initial plans for the site due to significant preservation of open space and wetland resources which is consistent with the environmental principles of the SCS. Employment-generating uses include the proposed senior congregate care use, senior clubhouse, commercial parcel, multi-family residential parcel, and parks and recreation uses, are consistent with the commercial and public uses envisioned by the MTP/SCS (sMTP/SCS Appendix E-3, p. 137). A Special Planning Area (SPA) Handbook has been prepared for the proposed project, which acts in a similar capacity to a Specific Plan, and is consistent with the MTP/SCS. The project is consistent with the goals of, the City of Rancho Cordova General Plan (see SPA Handbook for further detail). The project provides for a high level of bicycle and pedestrian connectivity throughout the project site, including non-auto connections to the parks, open space, and trails features of the project. An open space and wetland preserve area is provided, preserving wetlands and aquatic resources on the site. A range of housing types (including single family market rate and senior units at a range of densities and lot sizes, senior congregate care units, and multifamily units) will serve a broad spectrum of households. As described in the Draft EIR, comprehensive features and measures are provided to reduce GHG emissions, including use of renewable energy for the residential component of the project, an EV charging network, and use of energy-efficient and water-conserving building and design practices. The project does not conflict with the MTP/SCS.

[i] This document may be updated as users provide feedback on its utility.

[ii] If a TPP complies with an additional series of requirements set forth in PRC § 21155.1, it qualifies as a Sustainable Communities Project and becomes eligible for a complete exemption from CEQA. This worksheet does not address Sustainable Communities Projects.

[iii] *Net density* is not defined in PRC §2115(b). In the MTP/SCS, net density is defined as follows: Housing units divided by the acres on which housing is built, exclusive of public rights-of-ways, parks, schools and public areas (MTP/SCS Appendix E-3).

[iv] The MTP/SCS build out for each Community Type assumes development that is entitled as of January 1, 2012. SACOG monitors housing permits on an annual basis and will ensure that housing and employment projects relying on the SB 375 CEQA benefits will not exceed the capacity assumed in the MTP/SCS. SACOG undertakes this review generally every four years as part of the update of the MTP/SCS. In between MTP/SCS updates, projects that exceed the build out of a Community Type in a jurisdiction can be reviewed for consistency by SACOG and will be evaluated on a project by project basis.

[v] The MTP/SCS general land use, density and intensity in Center and Corridor Communities and Established Communities is based on 80 percent of the maximum allowed density or intensity of the land use designations in applicable local land use plans as they existed in 2012, unless otherwise noted in Appendix E-3.

[vi] The MTP/SCS land use forecast in Developing Communities was modeled according to adopted and proposed specific plans, master plans, and special plans as they existed in 2012, and is based on the housing and employment totals and the average net density of these plans, as outlined in Appendix E-3.

APPENDIX B.4

Analysis of Models and Tools to Correlate Project-Generated Pollutants to Health End Points

ANALYSIS OF MODELS AND TOOLS TO CORRELATE PROJECT-GENERATED CRITERIA POLLUTANT EMISSIONS TO HEALTH END POINTS

TOOL	*CREATED BY*	*DESCRIPTION*	*RESOLUTION*	*POLLUTANTS ANALYZED*	*PROJECT-LEVEL CEQA APPLICABILITY*
AERMOD Modeling System[1,2]	AERMIC	A steady-state plume model that incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including treatment of both surface and elevated sources, and both simple and complex terrain. The modeling system incorporates air dispersion based on a planetary boundary layer turbulence structure and scaling concepts, including treatment of both surface and elevated sources, and both simple and complex terrain.	Project-level	SO_2, ROG, NO_2, Lead, $PM_{2.5}$, $PM_{10,}$ NH_3	This model operates at the project-level and provides air dispersion modeling of a project's pollutant emissions on the surrounding environment. However, even with supplementary (i.e. additional) software, such as the California Air Resource Board's Hotspots Analysis and Reporting Program (HARP), the model does not estimate specific health effects on receptors from the air dispersion modeling (that is, it is not scientifically feasible to infer individualized health effects on receptors from the pollutant concentrations identified by this model, even in conjunction with other software such as HARP). Moreover, concentration modeling of ozone is not possible with AERMOD (nor any other known model used in conjunction with AERMOD), due to the complex nature of pollution concentration formation and numerous regional influences (multiple emission sources, meteorology, atmospheric chemistry and geography). Therefore, this model is not recommended for correlating project-generated criteria pollutant emissions to health end points.
AirCounts[3]	Abt Assoc.	Online tool that helps large and medium-sized cities quickly estimate the health benefits of $PM_{2.5}$ emission reductions and economic value of those benefits. The tool estimates the number of deaths (mortality) avoided and economic value related to user-specified regional, annual $PM_{2.5}$ emissions reduction.	City-level	Primary $PM_{2.5}$	This tool is only illustrative, as it is limited to certain cities and does not target specific sectors. The tool is not sector-specific, and includes limited California data. It cannot provide results at a development project level. Therefore, the tool is not recommended for project-level CEQA analysis.
Air Pollution Emission Experiments and Policy analysis	Mueller and Mendelsohn 2006, 2009	The Air Pollution Emission Experiments and Policy (APEEP) analysis model (Muller and Mendelsohn 2006, 2009) is a traditional integrated assessment model. Like other integrated assessment models, APEEP connects emissions of air pollution through air-quality modeling to exposures, physical effects, and monetary damages.	National or county-level	SO_2, ROG, NO_x, Ozone, $PM_{2.5}$, PM_{10}	The model operates at the national scale but may be applied at the county-level (although it is not clear how this adjustment should be made). It cannot provide results at a development project-level. The tool is also not commercially available. Therefore, the tool is not recommended for project-level CEQA

[1] See: https://www.epa.gov/scram/air-quality-dispersion-modeling-preferred-and-recommended-models

[2] Note: May require additional software to estimate the level of each specific pollutant at the modeled receptors.

[3] See: https://www.abtassociates.com/tools

Tool	*Created by*	*Description*	*Resolution*	*Pollutants Analyzed*	*Project-level CEQA Applicability*
(APEEP) model[4]		Making these links requires the use of findings reported in the peer-reviewed literature across several scientific disciplines. The air-quality models in APEEP use the emission data provided by EPA to estimate corresponding ambient concentrations in each county in the coterminous states.			analysis.
California Emissions Estimator Model® (CalEEMod)	California Air Pollution Control Officers Association (CAPCOA)	CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects.	Project-level	SO_2, ROG, NOx, CO, GHGs, $PM_{2.5}$, PM_{10}	Although CalEEMod is useful in comparing a project's emissions to significance thresholds, it is not able to assess transport of pollutants or the impacts of external factors (weather, terrain, etc.) on pollutant concentrations at particular locations. Therefore, this model is not recommended for estimating the health effects of project-generated criteria pollutants.
CALINE3/ CAL3QHC/ CAL3QHCR[1, 2]	United States Environmental Protection Agency (USEPA)	A steady-state Gaussian dispersion model designed to determine air pollution concentrations at receptor locations downwind of highways located in relatively uncomplicated terrain. CALINE3 is incorporated into the more refined CAL3QHC and CAL3QHCR models. CAL3QHCR is a more refined version based on CAL3QHC that requires local meteorological data.	Project-level	SO_2, ROG, NO_2, Lead, $PM_{2.5}$, PM_{10}	This model operates at the project level and provides air dispersion modeling for a project's transportation emissions on the surrounding environment. However, even with supplementary (i.e. additional software), the model cannot estimate specific health effects on receptors from the air dispersion modeling. Moreover, it cannot model the (complex) chemical reactions that occur between the ozone precursors (e.g. NOx and ROG) that generate ozone. Therefore, this model is not recommended for correlating project-generated criteria pollutant emissions to health end points.
Complex Terrain Dispersion Model Plus Algorithms for Unstable Situations (CTDMPLUS)[1, 2]	USEPA	A refined point source gaussian air quality model for use in all stability conditions for complex terrain. The purpose of the model is to provide a practical, refined plum model for elevated point sources near complex terrain.	Project-level	SO_2, ROG, NO_2, Lead, $PM_{2.5}$, PM_{10}	This model operates at the project-level and provides air dispersion modeling for a project's emissions on the surrounding environment. However, even with supplementary (i.e. additional software), the model cannot estimate specific health effects on receptors from the air dispersion modeling. Moreover, it cannot model the (complex) chemical reactions that occur between the ozone precursors (e.g. NOx and ROG) that generate ozone. Therefore, this model is not recommended for correlating project-generated criteria pollutant emissions to health end points

[4] See: https://public.tepper.cmu.edu/nmuller/APModel.aspx

TOOL	*CREATED BY*	*DESCRIPTION*	*RESOLUTION*	*POLLUTANTS ANALYZED*	*PROJECT-LEVEL CEQA APPLICABILITY*
Comprehensive Air Quality Model with Extensions (CAMx)[5]	Ramboll	CAMx is a multi-scale, three dimensional photochemical grid model. A photochemical grid model is a computer model designed for simulating air pollution episodes. CAMx is designed for computing hourly ozone concentrations at the regional, mesoscale, and urban scales for periods ranging from days up to months.	Regional, county, or city-levels	Ozone, CO, and secondary PM	CAMx is intended to accurately depict the ways in which air pollution forms, accumulates, and dissipates. However, it cannot provide results at a project-level.
Co-Benefits Risk Assessment (COBRA)[6]	USEPA	Preliminary screening tool that contains baseline emission estimates of a variety of air pollutants for a single year. COBRA is targeted to state and local governments as a screening assessment for clean energy policies. EPA's CO–Benefits Risk Assessment (COBRA) screening model is a free tool that helps state and local governments: • Explore how changes in air pollution from clean energy policies and programs; • Estimate the economic value of the health benefits associated with clean energy policies and programs to compare against program costs; • Map and visually represent the air quality, human health, and health-related economic benefits from reductions in emissions of particulate matter ($PM_{2.5}$), sulfur dioxide ($S0_2$), nitrogen oxides (NO_X), ammonia (NH_3), and volatile organic compounds (VOCs) that result from clean energy policies and programs.	National, regional, state, or county-levels	$PM_{2.5}$, SO_2, NO_x, NH_3, and ROG	COBRA is a preliminary screening tool only and cannot be used at sub-county resolution. It cannot provide results at a project-level. It also does not account for secondary emission changes resulting from market responses. Accordingly, the tool is not recommended for project-level CEQA analysis.
Environmental Benefits and Mapping Program-Community Edition (BenMAP-CE)[7]	USEPA	The USEPA's detailed model for estimating the health impacts from air pollution. It relies on input concentrations and applies concentration-response (C-R) health impact functions, which relate a change in the concentration of a pollutant with a change in the incidence of a health endpoint, including premature mortality, heart attacks, chronic respiratory illnesses, asthma exacerbation and other adverse health effects. Detailed inputs are required for air quality changes (concentrations from AERMOD), population, baseline incidence rates, and effect estimates.	National, County, City, and population levels	Ozone, PM, NO_2, SO_2, CO	This model provides an estimate of and characterizes the general impacts to health functions that relate change in health outcomes (coughs, asthma incidences, premature mortality) that change with small changes in ambient air concentrations. However, this model cannot provide results at a project-level. Accordingly, the tool is not recommended for project-level CEQA analysis.

[5] See: https://www3.epa.gov/scram001/7thconf/information/camx.pdf

[6] See: https://www.epa.gov/statelocalenergy/co-benefits-risk-assessment-cobra-health-impacts-screening-and-mapping-tool

[7] See: https://www.epa.gov/benmap

Tool	*Created by*	*Description*	*Resolution*	*Pollutants Analyzed*	*Project-level CEQA Applicability*
Fast Scenario Screening Tool (TM5-FASST)[8]	Joint Research Centre (Italy)	A tool that allows users to evaluate how air pollutant emissions affect large scale pollutant concentrations and their impact on human health (mortality and years of life lost) and crop yield from national to regional air quality policies, such as climate policies. The target policy domains are national to regional air quality policies, or air pollutant scenarios linked to other policy domains (e.g. climate policy). The tool is web-based and does not require coding or modelling. Users must gain access through publishers.	Global and national-levels	$PM_{2.5}$, Ozone, NO_x, NH_3, CO, ROG, CH_4, SO_2	This tool is applicable at national to global scales. It cannot provide results a project-level. Accordingly, the tool is not recommended for project-level CEQA analysis.
Hotspots Analysis and Reporting Program (HARP)	California Air Resources Board (CARB)	The Hotspots Analysis and Reporting Program (HARP) is a software suite that addresses the programmatic requirements of the Air Toxics "Hot Spots" Program (Assembly Bill 2588). HARP incorporates the information presented in the 2015 Air Toxics Hotspots Program Guidance Manual for Preparation of Health Risk Assessments. HARP can be used by the air pollution control and air quality management districts (districts), facility operators and other organizations or individuals to promote statewide consistency, efficiency and cost-effective development of facility emission inventories and conducting health risk assessments.	Statewide, Air District, and Project-levels	$PM_{2.5}$, PM_{10}, air toxics, TACs, Ozone, NO_2, CO, SO_2	This model operates at the project-level and provides the ability to combine air dispersion modeling data (e.g. from AERMOD) to conduct health risks assessments and assessment of pollutant concentrations at receptors surrounding a project. This model is often used in conjunction with AERMOD (to incorporate air dispersion modeling data provided by AERMOD). However, the model does not estimate specific health effects on receptors from the air dispersion modeling (that is, it is not scientifically feasible to infer individualized health effects on receptors from the pollutant concentrations identified by this model, even in conjunction with other software such as AERMOD). Moreover, scientifically valid modeling of ozone concentrations is not possible with HARP (nor any other known model used in conjunction with HARP), due to the complex nature of pollution concentration formation and numerous regional influences (multiple emission sources, meteorology, atmospheric chemistry and geography). Therefore, this model is not recommended for estimating the health effects of project-generated criteria pollutants.
Human Exposure Model (HEM)	USEPA	The HEM is used primarily for performing risk assessments for sources emitting air toxics to ambient air. The HEM only addresses the inhalation pathway of exposure, and is designed to predict risks associated with chemicals emitted into the ambient air (i.e., in the vicinity of an emitting facility but beyond the facility's property	Project-level	SO_2, ROG, NO_2, Lead, $PM_{2.5}$, PM_{10}, NH_3	This model does not estimate specific health effects on receptors (that is, it is not scientifically feasible to infer individualized health effects on receptors from the pollutant concentrations identified by this model. Moreover, scientifically valid modeling of ozone concentrations is not possible with HEM, due to the

[8] See: http://tm5-fasst.jrc.ec.europa.eu/

Tool	*Created by*	*Description*	*Resolution*	*Pollutants Analyzed*	*Project-level CEQA Applicability*
		boundary). The HEM provides ambient air concentrations, as surrogates for lifetime exposure, for use with unit risk estimates and inhalation reference concentrations to produce estimates of cancer risk and noncancer hazard, respectively, for the air toxics modeled.			complex nature of pollution concentration formation and numerous regional influences (multiple emission sources, meteorology, atmospheric chemistry and geography). Therefore, this model is not recommended for estimating the health effects of project-generated criteria pollutants.
Long-range Energy Alternatives Planning System-Integrated Benefits Calculator (LEAP-IBC)[9]	Climate and Clean Air Coalition (CCAC)	A calculator that allows users to rapidly estimate the impacts of reducing emissions on health, climate, and agriculture. The tool uses sensitivity coefficients that link gridded emissions of air pollutants and precursors to health, climate and agricultural impacts at a national level. The tool is primarily used for policy analysis. The tool is currently Excel-based and is available through the developers only. A web-based interface is currently under development.	National-level	$PM_{2.5}$, Ozone, NO_2	This tool is applicable at national scale. Accordingly, the tool is not recommended for project-level CEQA analysis.
Methodology for Estimating Premature Deaths Associated with Long-Term Exposure to Fine Airborne Particulate Matter in California[10]	CARB	The staff report identifies a relative risk of premature death associated with $PM_{2.5}$ exposure based on a review of all relevant scientific literature, and a new relative risk factor was developed. This new factor is a 10% increase in risk of premature death per 10 $\mu g/m^3$ increase in exposure to $PM_{2.5}$ concentrations (uncertainty interval: 3% to 20%)	National	$PM_{2.5}$	The primary author of the CARB staff report notes that the analysis method is not suited for small projects and may yield unreliable results due to various uncertainties. The tool also cannot provide results on a project-level. Accordingly, the tool is not recommended for project-level CEQA analysis.
Multi-Pollutant Evaluation Method (MPEM)[11]	Bay Area Air Quality Management District (BAAQMD)	Estimates the impacts of control measures on pollutant concentration, population exposures, and health outcomes for criteria, toxic, and GHG pollutants. Monetizes the value of total health benefits from reductions in $PM_{2.5}$, ozone, and certain carcinogens, and the social value of GHG reductions. MPEM was designed for development of a Clean Air Plan for the San Francisco Bay Area. The inputs are specific to the SF region and are not appropriate for projects outside BAAQMD.	Regional level in the SFBAAB	Ozone, PM, air toxics, GHG	This tool is designed to support the BAAQMD in regional planning and emissions analysis within the San Francisco Bay Area Air Basin (SFBAAB). The model applies changes in pollutant concentrations over a four-square kilometer grid. The tool also cannot provide results on a project-level. Additionally, this tool is only applicable for the SFBAAB. Accordingly, the tool is not recommended for project-level CEQA analysis. This project is also not

[9] See: https://www.ccacoalition.org/en/resources/long-range-energy-alternatives-planning-integrated-benefits-calculator-leap-ibc-factsheet

[10] See: https://ww3.arb.ca.gov/research/health/pm-mort/pmmortalityreportfinalr10-24-08.pdf

[11] See: http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/mpem_nov_dec_2016-pdf.pdf?la=en

Tool	*Created by*	*Description*	*Resolution*	*Pollutants Analyzed*	*Project-level CEQA Applicability*
					recommended for projects outside of the SFBAAB.
Offshore and Coastal Dispersion Model Version 5 (OCD)[1, 2]	USEPA	A straight-line Gaussian model developed to determine the impact of offshore emissions from point, area or line sources on the air quality of coastal regions. OCD incorporates overwater plume transport and dispersion as well as changes that occur as the plume crosses the shoreline. Hourly meteorological data are needed from both offshore and onshore locations.	Project-level	SO_2, ROG, NO_2, Lead, $PM_{2.5}$, PM_{10}	This model operates at the project-level and provides air dispersion modeling for a project's emissions on the surrounding environment. However, even with supplementary (i.e. additional software), the model cannot estimate specific health effects on receptors from the air dispersion modeling. Moreover, it cannot model the (complex) chemical reactions that occur between the ozone precursors (e.g. NOx and ROG) that generate ozone. This tool is used to address offshore emissions on coastal regions and is not appropriate for project-level CEQA analysis for inland locations.
Response Surface Model (RSM)-based Benefit-per-Ton Estimates[12]	USEPA	Consists of tables reporting the monetized $PM_{2.5}$-related health benefits from reducing $PM_{2.5}$ precursors from certain source types nationally and for 9 US cities/regions. Applying these estimates simply involves multiplying the emissions reduction by the relevant benefit per-ton metric. The resulting value is the PM mortality risk estimate at a 3% discount rate.	National or regional (San Joaquin County only) levels	SOx, VOC, NH_3, NO_x	RSM includes regional values specific to San Joaquin County and does not address development project-scale emissions. The values are also outdated. Accordingly, the tool is not recommended for project-level CEQA analysis.
Sector-based Benefit-per-Ton Estimates[13]	USEPA	Two specific sets of Benefit-per-ton (BPT) estimates for 17 key source categories are available. Both are a reduced-form approach based on BenMAP modeling. Applying these factors involves multiplying the emissions reduction (in tons) by the relevant benefit (economic value) or incidence (rates of mortality and morbidity) per-ton metric. The resulting value is the economics, mortality, and morbidity of direct and indirect $PM_{2.5}$ emissions.	National-scale	$PM_{2.5}$, SO_2, NO_x	The BPT estimates do not account for project-specific emissions or receptor locations, local dispersion characteristics, or regional photochemistry. The resultant health effects are therefore reflective of national averages and would not reflect localized conditions necessary to address impacts at the project-level. Accordingly, the tool is not recommended for project-level CEQA analysis.

[12] See: https://www.epa.gov/benmap/response-surface-model-rsm-based-benefit-ton-estimates

[13] See: https://www.epa.gov/benmap/sector-based-pm25-benefit-ton-estimates. The updated Technical Support Document (February 2018) is available at: https://www.epa.gov/sites/production/files/2018-02/documents/sourceapportionmentbpttsd_2018.pdf

APPENDIX C

Biological Resources Appendices

CONTENTS

Appendix C.1: Aquatic Resources Delineation Report

Appendix C.2: Biological Resources Assessment

Appendix C.3: Special-Status Plant Survey

APPENDIX C.1

Aquatic Resources Delineation Report

Aquatic Resources Delineation Report

The Ranch ±530-Acre Site
City of Ranch Cordova, California

DRAFT

Prepared for:

U.S. Army Corps of Engineers

Contracted by:

K. Hovnanian Homes

October 13, 2017

TABLE OF CONTENTS

1.0 Introduction 1
2.0 Regulatory Background 2
2.1. Waters of the United States 2
3.0 Methods 5
3.1. Site-Specific References 5
3.2. Research and Field Methodology 5
3.3. GPS Data Integration 7
4.0 Results 8
4.1. Site Location and Land Use 8
4.1.1. Site Location 8
4.1.2. Land Use 8
4.2. Physical Features 8
4.2.1. Soils 8
4.2.2. Topography 9
4.2.3. Regional Hydrology 10
4.2.4. Site-Specific Hydrology 10
4.3. Vegetation 10
4.3.1. California Annual Grassland 10
4.3.2. Disturbed/Developed 10
4.4. Classification of Aquatic Resources 10
4.4.1. Depressional Seasonal Wetland 11
4.4.2. Vernal Pool 11
4.4.3. Riverine Seasonal Wetland 11
4.4.4. Seasonal Wet Swale 12
4.4.5. Intermittent Drainage 12
4.4.6. Detention Basin Outfall 12
5.0 Conclusions 13
6.0 References 14

List of Tables

Table 1 — Aquatic Resources within the Site 13

DRAFT

List of Figures

Figure 1 — Site and Vicinity 16
Figure 2 — Soils 17
Figure 3 — Aquatic Resources Delineation Map 18

List of Appendices

Appendix A — Contact Information and Directions
Appendix B — Signed Statement from Property Owner(s) Allowing Access
Appendix C — Routine Wetland Determination Data Forms
Appendix D — Aquatic Resources Excel Spreadsheet

DRAFT

Acronyms and Abbreviations

CWA	Clean Water Act
FAC	Facultative plants
FACU	Facultative upland plants
FACW	Facultative wetland plants
GIS	Geographic Information System
GPS	Global Positioning System
MSL	mean sea level
NAD	North American Datum
NRCS	Natural Resource Conservation Service
NWI	National Wetland Inventory
OBL	Obligate wetland plants
OHWM	Ordinary High Water Mark
PEM	palustrine emergent
UPL	upland
U.S.	United States
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

DRAFT

Executive Summary

This report presents the results of a delineation of the aquatic resources at the 530-acre The Ranch, located in the City of Rancho Cordova, California. Aquatic resources were identified and delineated following the technical guidelines provided in the *Corps of Engineers Wetlands Delineation Manual* (Corps Manual) (Environmental Laboratory 1987) and the U.S. Army Corps of Engineers (Corps) *Arid West Regional Supplement* (Supplement) (USACE 2008). The Supplement presents wetland indicators, delineation guidance, and other information that is specific to the Arid West Region. The jurisdictional boundaries for other waters of the U.S. were identified based on the presence of an ordinary high water mark (OHWM) as defined in 33 C.F.R. 328.3(e).

A total of 21.53 acres of waters of the United States, comprising 2.92 acres of depressional seasonal wetlands, 15.04 acres of vernal pools, 1.66 acres of riverine seasonal wetlands, 0.06 acres of seasonal wet swale, 1.54 acres of intermittent drainage, and 0.30 acres of detention basin outfall were delineated at the project site. The detention basin outfall is authorized by the U.S. Army Corps of Engineers Regulatory Permit #200100252.

DRAFT

1.0 INTRODUCTION

The purpose of this document is to present the results of a formal delineation of jurisdictional waters of the United States (U.S.), including wetlands, on the ±530-acre The Ranch (site) located in the City of Ranch Cordova, California (**Figure 1**). This report was prepared in accordance with the *Minimum Standards for Acceptance of Aquatic Resources Delineation Reports* (USACE 2016) and presents the results of Foothill Associates' review of available literature, aerial photographs, soil surveys (**Figure 2**), and fieldwork within the Site. The delineation methodology is described in this report, followed by the results of the delineation. Contact information and directions to the Site are provided in **Appendix A**. Site access notification information is provided in **Appendix B**. Details regarding soils, topography, hydrology, and vegetation are summarized herein and routine wetland determination data forms are provided in **Appendix C**. A detailed delineation map that illustrates potential waters of the U.S. within the Site is included in **Figure 3**.

All aquatic features that may have been impacted by The Ranch were mapped and addressed in a 2014 Preliminary Jurisdictional Determination (Regulatory No. SPK-2004-00707) issued by the U.S. Army Corps of Engineers; but modifications to the proposed design layout requires a new jurisdictional delineation.

DRAFT

2.0 REGULATORY BACKGROUND

The Corps regulates discharge of dredged or fill material into waters of the United States under Section 404 of the Clean Water Act (CWA). "Discharges of fill material" is defined as the addition of fill material into waters of the U.S., including, but not limited to the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; fill for intake and outfall pipes; and subaqueous utility lines [33 C.F.R. §328.2(f)].

Section 401 of the CWA (33 U.S.C. 1341) requires any applicant for a Federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

Section 404 of the CWA requires approval prior to discharging dredged or fill material into the waters of the United States. Typical activities requiring Section 404 permits are:

- Depositing of fill or dredged material in waters of the U.S. or adjacent wetlands;
- Site development fill for residential, commercial, or recreational developments;
- Construction of revetments, groins, breakwaters, levees, dams, dikes, and weirs; and
- Placement of riprap and road fills.

Section 10 of the Rivers and Harbors Act of 1899 requires approval prior to the accomplishment of any work in or over navigable waters of the United States, or which affects the course, location, condition, or capacity of such waters. Typical activities requiring Section 10 permits are:

- Construction of piers, wharves, bulkheads, dolphins, marinas, ramps, floats intake structures, and cable or pipeline crossings; and
- Dredging and excavation.

Any person, firm, or agency (including Federal, state, and local government agencies) planning to work in navigable waters of the United States, or dump or place dredged or fill material in waters of the United States, must first obtain a permit from the Corps. Permits, licenses, variances, or similar authorization may also be required by other Federal, state, and local statutes.

2.1. Waters of the United States

Waters of the United States were defined in a Federal Rule published on June 29, 2015 and which went into effect on August 28, 2015. The term "waters of the United States" includes (a) traditional navigable waters, (b) interstate waters, (c) territorial seas, (d) impoundments of jurisdictional waters, and (e) their tributaries. Tributaries must have a bed and bank and

DRAFT

ordinary high water mark and may have ephemeral, intermittent, or perennial flow. Additionally, the rule defines "adjacent waters" as jurisdictional due to their significant nexus with a jurisdictional water in class (a) through (e). Adjacent waters include any waters located in whole or part within 100 feet of a jurisdictional water in class (a) through (e); any waters located within the 100-year floodplain and within 1,500 feet of a jurisdictional water in class (a) through (e); and any waters within 1,500 feet (f) the ordinary high water mark of a traditionally navigable water, territorial sea, or the Great Lakes. Five classes of waters, prairie potholes, Carolina bays and Delmarva bays, pocosins, western vernal pools, and Texas coastal prairie wetlands, were determined to be jurisdictional due to their nexus with jurisdictional waters when considered in combination with similarly situated waters. Other waters not previously defined as jurisdictional that are located within the 100-year floodplain of a traditionally navigable water, interstate water, or territorial sea or are within 4,000 feet of the ordinary high water mark of a jurisdictional water in class (a) through (e) are evaluated on a case-specific basis.

The rule specifically exempts the following types of features from Federal jurisdiction: waste treatment systems, including ponds or lagoons designed to meet the requirements of the Clean Water Act, prior converted cropland, ditches with ephemeral or intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands, ditches that do not flow directly or indirectly into a jurisdictional water, artificially irrigated areas that would revert to dry land should irrigation cease, artificial constructed lakes, ponds, reflecting pools, or swimming pools constructed in uplands, water filled depressions created in uplands incidental to mining or construction activity, erosional features, puddles, and stormwater control features and wastewater recycling structures constructed in uplands [33 C.F.R. § 328.3].

The new rule was challenged in court and on October 9, 2015 the U.S. Court of Appeals for the Sixth Circuit stayed the new rule nationwide. Until a final ruling is made, the Corps will continue to operate pursuant to the Supreme Court's decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (126 S. Ct. 2208) and agency guidance subsequent to this decision. Under these rules, the Corps will assert jurisdiction over wetlands adjacent to traditional navigable waters, relatively permanent non-navigable tributaries (i.e., waters that have a continuous flow at least three months out of the year), and wetlands that abut relatively permanent tributaries. The Corps will determine jurisdiction over waters that are non-navigable tributaries that are not relatively permanent, and wetlands adjacent to these tributaries, by making a determination whether such waters "significantly affect the chemical, physical, and biological integrity of other jurisdictional waters more readily understood as "navigable." Finally, the Corps generally does not consider the following to be "waters of the United States": swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent or short duration flow) and ditches "wholly in and draining only uplands…which do not carry a relatively permanent flow of water." Navigable waters of the United States are defined as waters that have been used in the past, are now used, or are susceptible to use as a means to transport interstate or foreign commerce up to the head of navigation.

DRAFT

Section 10 and/or Section 404 permits are required for construction activities in these waters. Boundaries between jurisdictional waters and uplands are determined in a variety of ways depending on which type of water is present. Methods for delineating wetlands and non-tidal waters are described below.

Wetlands are defined as "*those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions*" [33 C.F.R. §328.3(b)]. Presently, to be a wetland, a site must exhibit positive indicators of three wetland criteria: hydrophytic vegetation, hydric soils, and wetland hydrology existing under the "normal circumstances" for the site.

The lateral regulatory extent of non-tidal waters is determined by delineating the ordinary high water mark (OHWM) [33 C.F.R. §328.4(c)(1)]. The OHWM is defined by the Corps as "*that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas*" [33 C.F.R. §328.3(e)].

DRAFT

3.0 METHODS

3.1. Site-Specific References

Available information pertaining to the natural resources of the region was reviewed. All references reviewed for this delineation are listed in **Section 6.0**. Pertinent site-specific reports and general references utilized for the delineation include the following:

- Baldwin. G., D. Goldman, D. Keil, R. Patterson, and T.J. Rosatti. 2012. T*he Jepson Manual, 2nd Edition*. Vascular Plants of California. ISBN: 9780520253124. January 12, 2013;
- Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. U.S. Army Corps of Engineers Waterways Experiment Station. Vicksburg, MS;
- Gretag Macbeth. 2000. *Munsell Soil Color Charts*. New Windsor, NY;
- Lichvar, R.W., Butterwick, M., Melvin, N.C., and Kirchner, W. 2016. *The National Wetland Plant List: 2016 Wetland Ratings*. Phytoneuron 2016-30: 1–17. Published April 28, 2016. ISSN 2153 733X;
- U.S. Army Corps of Engineers (USACE). 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0). U.S. Army Engineer Research and Development Center. Vicksburg, MS;
- USACE. 2014. *Preliminary Jurisdictional Determination*; *SPK-2004-00707*. October 14, 2014;
- U.S. Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS). 2010. *Field Indicators of Hydric Soils in the United States, Version 7.0*. L.M. Vasilas, G.W. Hurt, and C.V. Noble (Eds). USDA, NRCS in cooperation with the National Committee for Hydric Soils. Fort Worth, TX; and
- U.S. Geological Survey. 1967 (Photorevised 1980). *Buffalo Creek, California*. 7.5 -minute series topographic quadrangle. U.S. Department of the Interior.

3.2. Research and Field Methodology

This delineation utilized the Corps' 1987 three-parameter (vegetation, hydrology, and soils) methodology to delineate aquatic resources. The Supplement was also used in conjunction with the Corps Manual for applications in the Arid West Region. Where differences in the two documents occur, the Supplement takes precedence over the Corps Manual.

The Arid West Region consists of all or significant portions of 11 states, including California (USACE 2008). This region is differentiated from other surrounding areas by having a predominantly dry climate and long summer dry season. Vegetation characteristics of the Arid West Region include little to no forest cover consisting of mainly annual grasslands, shrublands, hardwood savannas, deciduous woodlands, and pinyon/juniper woodlands. The Arid West

DRAFT

Supplement was used on this site because it is located in the *Mediterranean California* Land Resource Region (LRR C), which is characterized by warm, wet winters and dry summers.

The three-parameter methodology requires the collection of data on soils, vegetation, and hydrology at several locations to establish the jurisdictional boundary of wetlands. Additional methods to identify and delineate other waters of the U.S. (e.g., streams, drainages, lakes) were used as applicable. The method typically used for delineation of non-wetland waters of the U.S. is the delineation of the OHWM. The OHWM was identified based on soils, vegetation, slope, and other indicators such as debris and high water marks.

A review of historic and recent aerial photographs, topographic maps, and soils survey data was conducted before delineating the Site in December 2003, and January through April 2004. Revisions were made in the field with Justin Cutler and/or Will Ness of the U.S. Army Corps of Engineers in April and June in 2005 and a reverification was conducted in October 2014. Biologists visually inspected the entire site and collected representative data at points within potential wetland areas and corresponding uplands. The location of each data point is depicted in **Figure 3** and corresponding routine wetland determination data forms are provided in **Appendix C**.

Correlations were developed between the three parameters (vegetation, hydrology, and soils) to make wetland determinations. Specifically, plots at data point locations were evaluated to determine the composition and identification of dominant plant species. The indicator status of all dominant plant species [as determined by the current *National Wetland Plant List*] was applied and evaluated as part of the vegetation assessment portion of the wetland determination process. The plant indicator status includes the following categories:

Obligate wetland plants (OBL):	Occur almost always under natural wetland conditions (estimated probability > 99%).
Facultative wetland plants (FACW):	Usually occur in wetlands, but occasionally found in non-wetlands (67-99%).
Facultative plants (FAC):	Equally likely to occur in wetlands and non-wetlands (34-66%).
Facultative upland plants (FACU):	Usually occur in non-wetlands, but occasionally found in wetlands (1-33%).
Upland (UPL):	Occur almost always under natural conditions in non-wetlands (>99%); may occur in wetlands in other regions.

The absolute cover was estimated for each vegetation stratum; these strata include tree, sapling/shrub, herb, and woody vine. Species that are dominant in more than one stratum were counted multiple times. Some wetland plant communities may fail a test based only on dominant species. Where indicators of hydric soils and hydrology are present and vegetation is

DRAFT

not dominated by hydrophytes, the vegetation was re-evaluated with the prevalence index, which takes into consideration all plant species in the community, not just the subset of dominant species.

The onsite soils were examined for hydric indicators. Hydric soil indicators are described in the *Field Indicators of Hydric Soils in the U.S.*, Version 7.0 (USDA, NRCS, 2010 and 2015). If one or more of these indicators are present, then the soil is hydric. Nearly all hydric soils exhibit characteristic morphologies that are caused by anaerobic, reduced soil conditions due to prolonged soil saturation. The most commonly observed indicators are related to iron (Fe) and manganese (Mn) redox concentrations or depletions. Less commonly observed indicators include gleyed matrix and black histic (low amounts of Fe-Mn and accumulations of organic carbon).

Observations were made and recorded for both primary and secondary wetland hydrology indicators, if present. Without monitoring or direct observation of inundation/saturation, indirect indicators of wetland hydrology are typically used and include primary indicators such as water marks, drift lines, and sediment deposits, or secondary indicators such as crayfish burrows or the FAC-neutral test.

3.3. GPS Data Integration

Boundaries of wetlands and other waters of the U.S. within the Site were surveyed and mapped with a Trimble GeoXT Global Positioning System (GPS) hand-held unit. This is a mapping-grade GPS unit capable of real-time differential correction and sub-meter accuracy. The GPS data were downloaded from the unit and differentially corrected utilizing Trimble Pathfinder Office software and appropriate base station data, and then converted to ESRI ® shape file format. Data are typically exported to the Geographic Information System (GIS) software in the State Plane coordinate system (NAD 83) with units as "survey feet." Within the GIS, data are edited and linear features are built into polygons using recorded width information. All wetland shape files are merged to create a single wetland file with calculated acreages. These results are presented in **Figure 3**.

DRAFT

4.0 RESULTS

4.1. Site Location and Land Use

4.1.1. Site Location

The ±530-acre Site is located in southeastern Sacramento County, approximately five miles south of U.S. Highway 50, east of Sunrise Boulevard, and the Folsom South Canal, and north of Jackson Road (Highway 16) within the City of Ranch Cordova. The Site lies east of and adjacent to Rancho Cordova Parkway, south of Douglas Road, and west of and adjacent to the proposed Americanos Boulevard. The Site is located in Township 8 North, Range 7 East, Section 16, in an area covered by the USGS *Buffalo Creek* 7.5-minute quadrangle (**Figure 1**).

4.1.2. Land Use

The majority of the Site is annual grassland, previously used to livestock grazing. Land uses surrounding the Site include residential development and agricultural (livestock grazing).

4.2. Physical Features

4.2.1. Soils

The Natural Resources Conservation Service has mapped five soil units on the Site (**Figure 2**). These include: **Fiddyment Fine Sandy Loam, 1 to 8 Percent Slopes**, **Hicksville Gravelly Loam, 0 to 2 Percent Slopes, Occasionally Flooded**, **Red Bluff-Redding Complex, 0 to 5 Percent Slopes**, **Redding Gravelly Loam, 0 to 8 Percent Slopes**, and **Redding Loam, 2 to 8 Percent Slopes**. General characteristics associated with these soils types are described below.

- **Fiddyment Fine Sandy Loam, 1 to 8 Percent Slopes**: This moderately deep, well-drained soil is located on hills between 50 and 350 feet above mean sea level (MSL). This soil formed in material weathered from consolidated sandstone or siltstone. Permeability is very slow and available water capacity is low. As a result, this soil type takes a very long time to saturate and the capacity of the soil to hold water available for use by most plant species is low. This soil unit is typically used for rangeland, irrigated hay and pasture, or for dryland crops, such as wheat. Typically, vegetation on this soil unit consists mainly of non-native grasses and herbaceous plant species. The hydric soils list for Sacramento County does not identify any hydric inclusions occurring within this soil type.
- **Hicksville Gravelly Loam, 0 to 2 Percent Slopes, Occasionally Flooded**: This very deep, moderately well-drained soil is on low stream terraces and the alluvial flats adjacent to drainageways on high terraces and hills between 75 to 230 feet above MSL. This soil unit formed in alluvium derived from mixed rock sources. Permeability is moderately slow in this soil type and available water capacity is low. As a result, this soil type takes a moderately long time to saturate and the capacity of the soil to hold water available for use by most plant species is low. This soil type is typically used as rangeland or for irrigated crops. Typically, vegetation on this soil unit consists mainly of non-native

DRAFT

grasses and herbaceous plant species. The hydric soils list for Sacramento County identifies two hydric inclusions occurring within this soil type, Columbia and Hicksville.

- **Red Bluff-Redding Complex, 0 to 5 Percent Slopes**: This soil complex is located on high terraces, between 90 to 310 feet above MSL. The Red Bluff soil is very deep and well drained. This soil formed in alluvium derived from mixed rock sources. This soil complex consists of approximately 45 percent Red Bluff soil and 40 percent Redding soil. Permeability is moderately slow and available water capacity is high in the Red Bluff soil. As a result, this soil type takes a moderately long time to saturate and the capacity of the soil to hold water available for use by most plant species is high. The Redding soil is moderately deep and moderately well drained. Permeability is very slow in the Redding soil and available water capacity is low. As a result, this soil type takes a long time to saturate and the capacity of the soil to hold water available for use by most plant species is low. This soil complex is used mainly as rangeland or to cultivate dry land crops, such as wheat. Typically, vegetation on this soil complex consists of non-native annual grasses and herbaceous plant species. The hydric soils list for Sacramento County identifies one unnamed hydric inclusion found within depressions of this soil type.
- **Redding Gravelly Loam, 0 to 8 Percent Slopes**: This moderately deep, well-drained soil type is located on high terraces and terrace remnants between 40 to 390 above MSL. This soil formed in gravelly and cobbled alluvium derived from mixed rock sources. Permeability is slow in Redding gravelly loam and available water capacity is low. As a result, this soil type takes a long time to saturate and the capacity of the soil to hold water available for use by most plant species is low. This soil unit is mainly used as rangeland for livestock grazing. In some areas this unit is used for irrigated hay and pasture or for dryland crops, such as wheat. Typically, vegetation on this soil unit consists of non-native annual grasses and herbaceous plant species. The hydric soils list for Sacramento County identifies one unnamed hydric inclusion found within depressions of this soil type.
- **Redding Loam, 2 to 8 Percent Slopes**: This moderately deep, moderately well-drained soil is on high terraces and terrace remnants between 40 to 170 feet above MSL. This soil formed in gravelly and cobbly alluvium derived from mixed rock sources. Permeability is very slow in the Redding soil and available water capacity is low. As a result, this soil type takes a long time to saturate and the capacity of the soil to hold water available for use by most plant species is low. This soil type is typically used for rangeland and less frequently for dryland crops, such as wheat, or irrigated crops, such as hay. Typically, vegetation on this soil unit consists of non-native annual grasses and herbaceous plant species. The hydric soils list for Sacramento County identifies one unnamed hydric inclusion found within depressions of this soil type.

4.2.2. Topography

The Site exhibits low relief topography with elevations ranging between 170 and 220 feet above MSL. The slopes throughout the Site range from approximately 0 to 8 percent. Moderate rolling

DRAFT

hills and extensive flatlands interspersed with seasonal drainage courses and wetlands typify the topography of the Site.

4.2.3. Regional Hydrology

The Site is located in the Upper Morrison Creek and Laguna Creek Watersheds (Hydrologic Unit Codes: 180201630402 and 180201630403). The Upper Morrison Creek Watershed encompasses approximately 50 square miles. The Laguna Creek Watershed encompasses approximately 45 square miles.

4.2.4. Site-Specific Hydrology

The Site is crossed by an unnamed intermittent drainage that runs northeast to southwest and flows offsite under Rancho Cordova Parkway. Water leaves the Site through the intermittent drainage as well as over land and through small riverine wetlands towards the east and south. Water enters the Site through the intermittent drainage, as well as through seasonal precipitation.

4.3. Vegetation

The vegetation assemblages and habitat types occurring on the Site include the following: California annual grassland and disturbed/development habitat.

4.3.1. California Annual Grassland

California annual grassland consists of a myriad of native and non-native annual plant species and occurs in a majority of the state at elevations from sea level to approximately 4,000 feet above MSL. Composition of this vegetation community varies depending on distribution, geographic location and land use. Additional major influences on this vegetation community include soil type, annual precipitation, and fall temperatures.

The plant community covering the majority of the Site is annual grassland, which accounts for 506.07 acres of the Site and is characterized primarily by an assemblage of non-native grasses and forbs. Much of the vegetation in these communities is common to the Central Valley. Dominant grass species consists of Italian rye grass (*Festuca perennis*), rattail sixweeks grass (*Festuca myuros*), soft brome (*Bromus hordeaceus*), and slender wild oat (*Avena fatua*). Common dominant herbaceous non-natives include jointed charlock (*Raphanus raphanistrum*) and field bindweed (*Convolvulus arvensis*).

4.3.2. Disturbed/Developed

Disturbed/developed habitat accounts for 2.45 acres in the Site. This habitat occurs in strictly defined areas consisting of portions of Rancho Cordova Parkway and a dirt roadway entering the Site from Big Meadow Way.

4.4. Classification of Aquatic Resources

As discussed previously in **Section 2.0**, aquatic resources are classified into multiple types based on topography, edaphics (soils), vegetation, and hydrologic regime. Primarily, the Corps

DRAFT

establishes two distinctions: wetland and non-wetland waters, which are commonly referred to as other waters.

Wetland types mapped within the Site include the following: depressional seasonal wetland, vernal pool, riverine seasonal wetland. Other waters delineated within the Site include: intermittent drainage, seasonal wet swale, and detention basin outfall. A description of all of the features delineated within the Site is provided in the following sections. Wetland data sheets are included in **Appendix C**.

4.4.1. Depressional Seasonal Wetland

A total of approximately **2.92 acres** of depressional seasonal wetlands have been identified within the Site. Depressional seasonal wetlands exhibit a hydrologic regime dominated by saturation, rather than inundation. Depressional seasonal wetlands were identified in the Site as depressions within the topography with a hydrologic regime dominated by saturation and capable of supporting hydrophytic plant species and hydric soils. Plant species in depressional seasonal wetlands are adapted to withstand short periods of saturation or saturated soils conditions but will not withstand prolonged periods of inundation, as is common in vernal pools. Vegetation observed in seasonal wetlands included: coyote thistle (*Eryngium vaseyi*), rabbitsfoot grass (*Polypogon monspeliensis*), hyssop loosestrife (*Lythrum hyssopifolia*), annual hairgrass (*Deschampsia danthonioides*), and Fremont's goldfields (*Lasthenia fremontii*).

4.4.2. Vernal Pool

A total of **15.04 acres** of vernal pools have been identified within the Site. Vernal pools are shallow, seasonally inundated depressional wetlands that form in soils with a subsurface layer that restricts the downward flow of water. These layers include hardpans, claypans, or thick clay layers. Vernal pools were identified in the Site as depressions within the topography with a hydrologic regime dominated by inundation and capable of supporting hydrophytic plant species and hydric soils. Plant species found within vernal pools are those that require extended periods of inundation and, as such, are commonly associated with these seasonal wetland features. Vegetation observed in the vernal pools onsite included: coyote thistle, Mediterranean barley, and stalked popcornflower (*Plagiobothrys stipitatus*).

4.4.3. Riverine Seasonal Wetland

A total of **1.66** acres of riverine seasonal wetlands have been identified within the Site. Riverine seasonal wetlands are defined by a hydrologic regime dominated by unidirectional flow of water. Riverine seasonal wetlands typically occur in topographic folds or swales and represent natural drainages that convey sufficient water to support wetland vegetation. Riverine seasonal wetlands typically convey water during and shortly after storm events. Riverine seasonal wetlands may have a moderately defined bed and bank and often exhibit sufficient gradient to convey water. As in depressional seasonal wetlands, plant species found within riverine seasonal wetlands are typically adapted to a hydrologic regime dominated by saturation rather than inundation. Dominant vegetation within the riverine seasonal wetlands includes: coyote thistle, rabbitsfoot grass, hyssop loosestrife, annual hairgrass, and Fremont's goldfields.

DRAFT

4.4.4. Seasonal Wet Swale

The seasonal wet swale accounts for **0.06 acres** of the Site and is located at the center of the southern boundary of the Site. Seasonal wet swales are not considered jurisdictional waterbodies, but do convey and hold water during and after storm events and can exhibit assemblages of wetland vegetation. Dominant vegetation of seasonal wet swales typically consists of grass and other wetland vegetation.

4.4.5. Intermittent Drainage

Intermittent drainages account for **1.54 acres** of the Site. Intermittent drainages are features that may not meet the three-parameter criteria for vegetation, hydrology, and soils, but do convey water and exhibit an OHWM. Water flows within intermittent drainages are fed primarily by precipitation and stormwater runoff. Dominant vegetation within consists of coyote thistle.

4.4.6. Detention Basin Outfall

The detention basin outfall accounts for **0.30 acres** of the Site and is located near the eastern end of the northern border. This detention basin outfall is actively maintained with reinforced large gravel barriers at either end. In addition, there does not appear to be any vegetation within or on the banks of the basin. The detention basin outfall is authorized by Regulatory Permit # 200100252.

DRAFT

5.0 CONCLUSIONS

All aquatic features that may have been impacted by The Ranch were mapped and addressed in a 2014 Preliminary Jurisdictional Determination (SPK-2004-00707), but modifications to the proposed design layout requires a new jurisdictional delineation.

The wetland types mapped within the Site include: depressional seasonal wetlands, vernal pools, and riverine seasonal wetlands. Non-wetland waters that were delineated within the Site include: seasonal wet swale, intermittent drainage, and detention basin outfall. The detention basin outfall is authorized by Regulatory Permit # 200100252. Areas deemed jurisdictional will be subject to the regulatory requirements of the federal Clean Water Act including permitting and mitigation, as required.

Table 1, below, summarizes the acreage per class of aquatic feature found on the Site. Detailed information on each feature is included in **Appendix C**.

TABLE 1 — AQUATIC RESOURCES WITHIN THE SITE

Aquatic Resource Type	Aquatic Resources Classification	Aquatic Resource Size (acres)
Depressional Seasonal Wetland	PEM2B	2.92
Vernal Pool	PEM2C	15.04
Riverine Seasonal Wetland	PEM2B	1.66
Seasonal Wet Swale	R4SB7	0.06
Intermittent Drainage	R4SB	1.54
Detention Basin Outfall	R4SB5	0.30
Total	**--**	**21.53***

*Acreages are calculated to six significant figures and subsequently round to three significant figures. Total acreage is further rounded to two significant figures.

DRAFT

6.0 REFERENCES

Baldwin. G., D. Goldman, D. Keil, R. Patterson, and T.J. Rosatti. 2012. *The Jepson Manual, 2nd Edition. Vascular Plants of California*. ISBN: 9780520253124. January 12, 2013. 1,600 pp.

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Vicksburg, MS: U.S. Army Corps of Engineers Waterways Experiment Station.

GoogleEarth. 2017. Aerial photographs ranging from 1993 – 2017.

Gregtag Macbeth. 2000. *Munsell Soil Color Charts*. New Windsor, NY.

Hitchcock, A. 1935. *Manual of the Grasses of the United States*. Washington, D.C.: United States Government Printing Office.

Hitchcock, L., & Cronquist, A. 1996. *Flora of the Pacific Northwest*. Seattle, WA: University of Washington Press.

Lichvar, R.W., Butterwick, M., Melvin, N.C., and Kirchner, W. 2016. *The National Wetland Plant List: 2016 Wetland Ratings*. Phytoneuron 2016-30: 1–17. Published April 28, 2016. ISSN 2153 733X.

Lichvar, Robert W. and Shawn McColley. 2008. *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States*. Vicksburg, MS: U.S. Army Corps of Engineers Research and Development Center.

Mason, H. 1957. *A Flora of the Marshes of California*. Berkeley, CA: University of California Press.

Munz, P. 1968. *A California Flora and Supplement*. Berkeley, CA: University of California Press.

National Research Council. 1995. *Wetlands: Characteristics and Boundaries*. Washington, D.C.: National Academy Press.

Sawyer, J., & Keeler-Wolf, T. 1995. *A Manual of California Vegetation*. Sacramento, CA: California Native Plant Society.

U.S. Army Corps of Engineers (USACE). 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0). U.S. Army Engineer Research and Development Center. Vicksburg, MS.

USACE. 2014. *Preliminary Jurisdictional Determination*; *SPK-2004-00707*. October 14, 2014.

USACE. 2016. *Minimum Standards for Acceptance of Aquatic Resource Delineation Reports*.

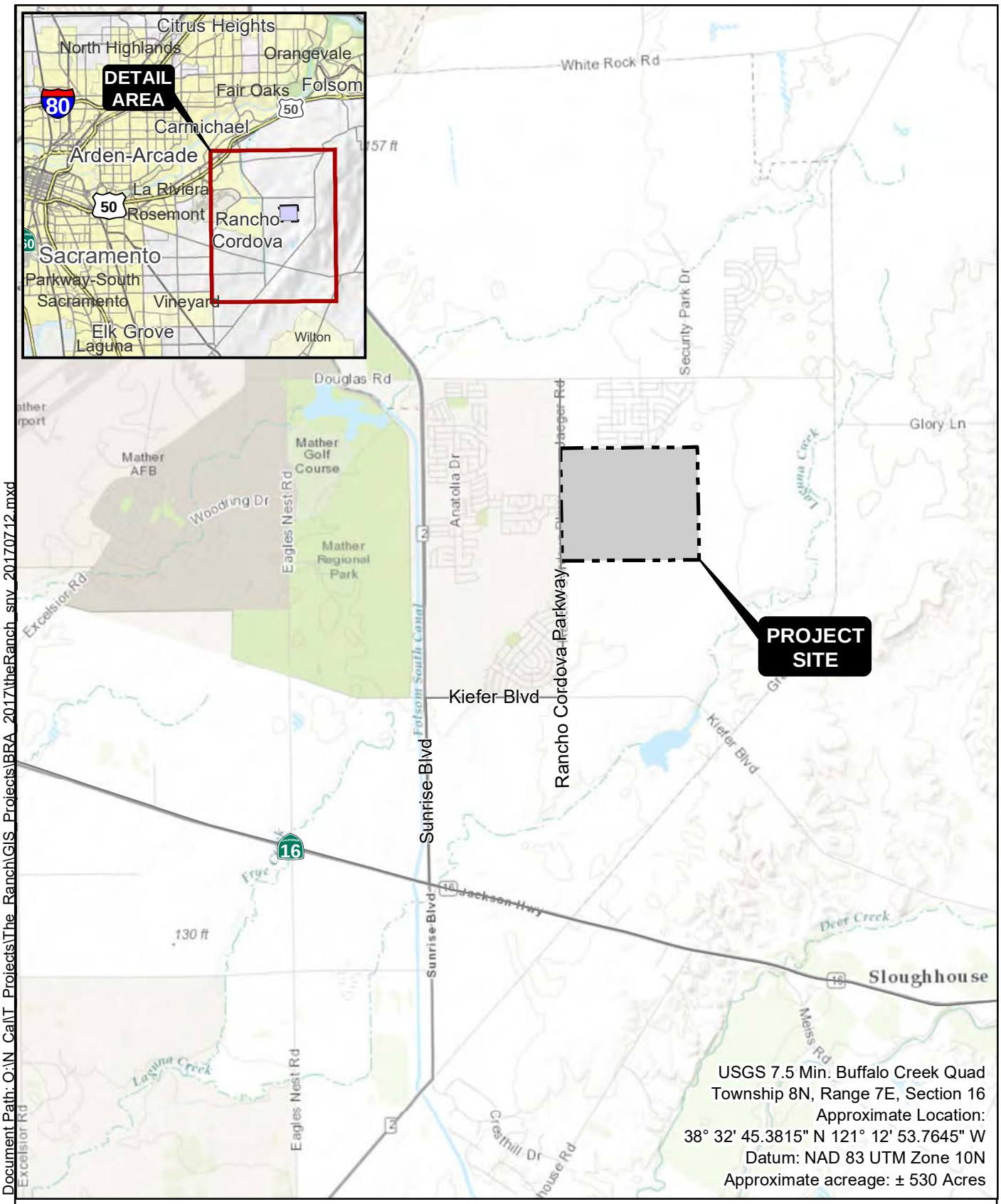
U.S. Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS). 2010. *Field Indicators of Hydric Soils in the United States, Version 7.0*. L.M. Vasilas, G.W. Hurt,

DRAFT

and C.V. Noble (Eds). USDA, NRCS in cooperation with the National Committee for Hydric Soils. Fort Worth, TX.

USDA, NRCS. 2015. *Field Indicators of Hydric Soils in the United States, Version 7.0, 2015 Errata*.

DRAFT



Document Path: O:\N_Cal\T_Projects\The_Ranch\GIS_Projects\BRA_2017\theRanch_snv_20170712.mxd

USGS 7.5 Min. Buffalo Creek Quad
Township 8N, Range 7E, Section 16
Approximate Location:
38° 32' 45.3815" N 121° 12' 53.7645" W
Datum: NAD 83 UTM Zone 10N
Approximate acreage: ± 530 Acres

SITE AND VICINITY

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE
© 2017

N

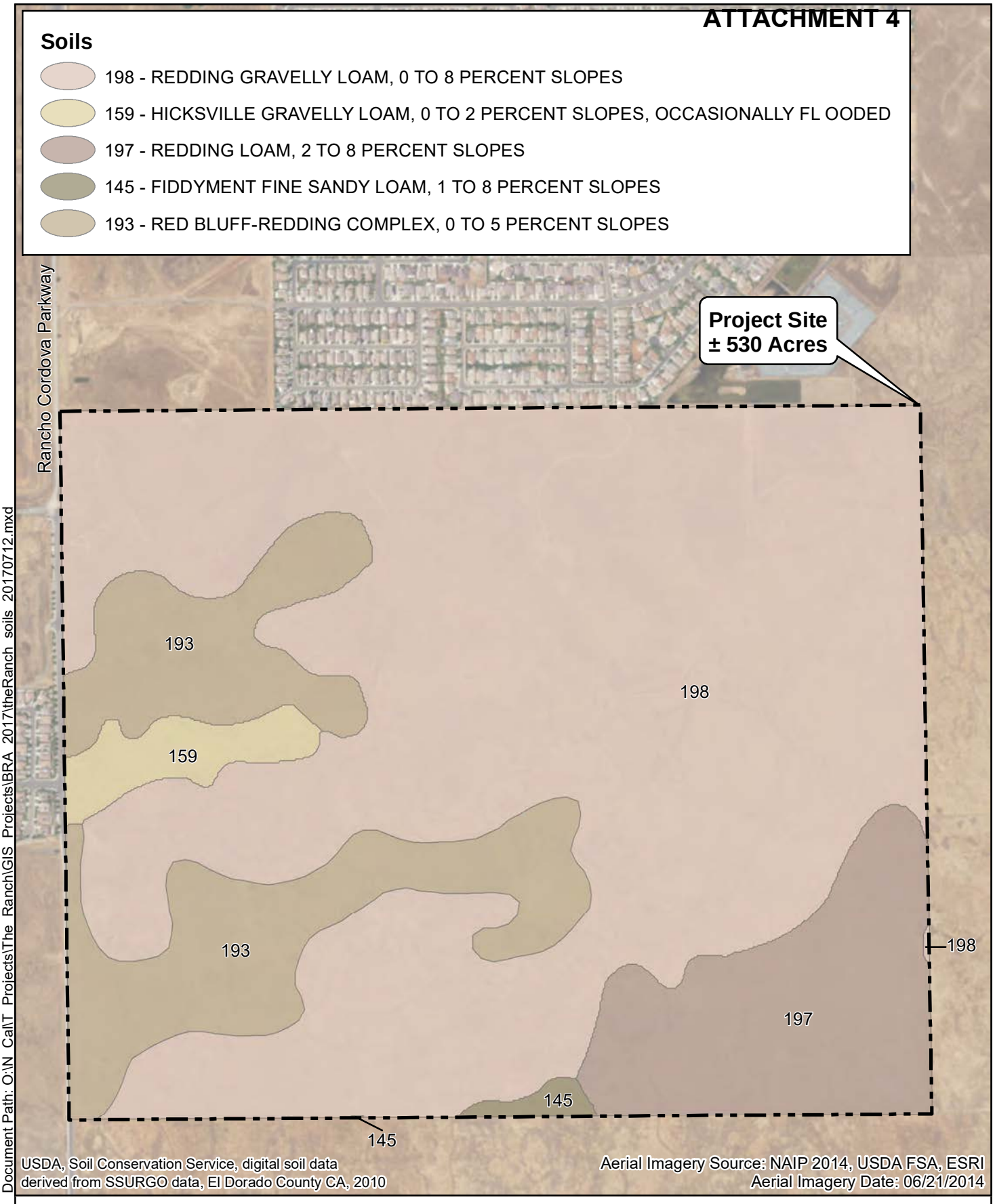
0 0.5 1
Miles
1 in = 1 miles

Drawn By: JFI
QA/QC: AMP
Date: 07/27/2017

FIGURE 1

THE RANCH

Document Name: theRanch_snv_20170712.mxd : 10/13/2017 1:09:28 PM



Document Path: O:\N Cal\T Projects\The Ranch\GIS Projects\BRA 2017\theRanch soils 20170712.mxd

SOILS

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE
© 2017

N

0 400 800
Feet
1 inch = 800 feet

Drawn By: JFI
QA/QC: AMP
Date: 07/27/2017

FIGURE 2

121° 13' 27.2033" W
38° 33' 06.9875" N

Detention Basin Outfall
Authorized by Regulatory
Permit #200100252

INDIVIDUAL WOUS FEATURE ACREAGES

DSW	
LABEL	ACRES*
79	0.001
81	0.001
82	0.000
83	0.002
84	0.000
85	0.002
86	0.002
87	0.000
88	0.001
89	0.000
90	0.001
91	0.000
92	0.002
93	0.000
94	0.001
95	0.000
96	0.004
97	0.000
98	0.002
99	0.000
100	0.000
101	0.001
102	0.000
103	0.005
104	0.001
105	0.001
107	0.004
109	0.288
110	0.003
111	0.000
112	0.001
113	0.001
114	0.002
116	0.001
117	0.008
118	0.001
119	0.001
120	0.001
121	0.000
122	0.001
123	0.000
124	0.003
125	0.019
126	0.000
127	0.000
128	0.012
129	0.000
130	0.002
131	0.001
132	0.001
133	0.013
134	0.002
135	0.000
136	0.001
137	0.000
138	0.001
139	0.003
140	0.000
141	0.002
142	0.003
143	0.002
144	0.001
145	0.000
146	0.001
147	0.001
148	0.002
149	0.004
150	0.001
151	0.001
152	0.002
153	0.004
154	0.017
155	0.006
156	0.019
157	0.015
158	0.002
159	0.003
160	0.002
161	0.001
162	0.001
163	0.000
164	0.001
165	0.001
167	0.001
170	0.003
171	0.000
172	0.000
173	0.001
174	0.000
175	0.002
176	0.002
177	0.001
178	0.001
179	0.009
180	0.002
181	0.002
187	0.002
188	0.000
189	0.001
190	0.000
191	0.004
194	0.001
195	0.005
196	0.000
197	0.000
198	0.055
199	0.002
200	0.001
201	0.051
202	0.000
204	0.012
207	0.001
208	0.003
209	0.069
210	0.015
211	0.001
212	0.000
213	0.000
214	0.003
215	0.040
216	0.002
217	0.000
218	0.000
220	0.000
221	0.002
222	0.000
223	0.001
224	0.004
226	0.013
227	0.009
229	0.000
230	0.007
231	0.000
232	0.005
233	0.010
234	0.003
235	0.002
236	0.004
239	0.002
240	0.008
243	0.001
244	0.002
245	0.001
246	0.001
247	0.004
249	0.002
250	0.001
252	0.001
253	0.001
254	0.001
255	0.006
256	0.002
257	0.004
258	0.001
259	0.001
260	0.001
261	0.001
262	0.003
263	0.004
264	0.001
265	0.001
266	0.002
267	0.009
268	0.003
269	0.005
271	0.008
277	0.001
278	0.001
279	0.000
280	0.007
281	0.003
283	0.015
284	0.001
286	0.001
287	0.000
288	0.002
290	0.007
291	0.002
292	0.062
293	0.007
294	0.003
295	0.002
296	0.010
297	0.002
298	0.002
299	0.003
300	0.001
306	0.014
317	0.006
319	0.007
320	0.003
321	0.004
331	0.003
332	0.004
336	0.002
357	0.009
cont. in second column	

DSW (CONTINUED)	
LABEL	ACRES*
361	0.073
364	0.011
381	0.410
385	0.009
390	0.032
392	0.015
393	0.024
395	0.010
396	0.009
398	0.033
403	0.029
404	0.002
405	0.018
406	0.032
409	0.003
410	0.006
411	0.005
412	0.005
413	0.006
414	0.002
417	0.006
418	0.021
420	0.026
421	0.105
422	0.034
423	0.051
424	0.006
425	0.004
426	0.003
427	0.007
428	0.009
429	0.001
430	0.002
431	0.010
434	0.005
438	0.004
439	0.001
440	0.002
447	0.087
452	0.011
453	0.016
454	0.013
458	0.006
462	0.005
463	0.001
466	0.005
467	0.012
468	0.003
470	0.003
471	0.001
472	0.001
473	0.002
474	0.004
475	0.002
478	0.004
479	0.002
480	0.004
481	0.007
486	0.004
487	0.002
489	0.001
495	0.003
496	0.006
498	0.002
499	0.008
503	0.001
504	0.026
505	0.003
512	0.001
516	0.001
543	0.000
544	0.004
545	0.002
546	0.001
549	0.001
550	0.000
552	0.004
553	0.000
554	0.001
555	0.000
556	0.001
557	0.006
563	0.011
564	0.004
565	0.000
566	0.001
567	0.002
568	0.001
569	0.008
570	0.002
571	0.000
572	0.000
573	0.000
574	0.004
578	0.007
579	0.003
588	0.001
589	0.155
591	0.001
611	0.008
613	0.000
615	0.002
616	0.000
617	0.001
618	0.000
619	0.001
620	0.005
690	0.000
691	0.000
692	0.000
693	0.000
694	0.000
695	0.000
696	0.000
697	0.000
698	0.000
700	0.000
701	0.010
702	0.001
704	0.047
705	0.044
706	0.011
707	0.001
709	0.008
718	0.015
720	0.033
751	0.034
759	0.012
761	0.015
767	0.016
768	0.008
769	0.017
770	0.017
SUBTOTAL	2.921

RSW	
LABEL	ACRES*
10	0.002
11	0.002
12	0.001
13	0.002
14	0.001
15	0.002
16	0.012
17	0.002
18	0.002
19	0.001
20	0.006
21	0.003
22	0.004
23	0.005
24	0.015
25	0.004
26	0.005
27	0.001
28	0.007
29	0.042
30	0.060
31	0.002
32	0.001
33	0.003
34	0.308
35	0.010
36	0.044
37	0.003
38	0.007
39	0.027
40	0.003
41	0.007
42	0.003
43	0.000
44	0.008
45	0.007
46	0.012
47	0.001
48	0.004
49	0.001
50	0.013
51	0.003
52	0.007
53	0.014
54	0.020
55	0.003
56	0.002
57	0.045
58	0.014
59	0.001
60	0.027
61	0.000
62	0.006
63	0.006
64	0.014
66	0.012
67	0.008
68	0.053
69	0.002
cont. in third column	

RSW (CONTINUED)	
LABEL	ACRES*
70	0.001
71	0.002
72	0.002
73	0.000
74	0.016
75	0.014
76	0.006
77	0.038
78	0.015
561	0.006
562	0.016
581	0.002
582	0.001
583	0.001
584	0.000
585	0.058
596	0.003
597	0.003
598	0.005
599	0.001
600	0.005
601	0.140
602	0.018
603	0.002
604	0.006
605	0.006
606	0.010
607	0.006
608	0.001
609	0.003
610	0.051
659	0.001
660	0.004
661	0.002
662	0.002
663	0.004
664	0.007
665	0.004
666	0.005
667	0.003
668	0.003
669	0.043
670	0.018
671	0.025
672	0.020
673	0.005
674	0.014
675	0.002
676	0.003
677	0.001
678	0.020
679	0.009
680	0.002
681	0.046
682	0.007
683	0.004
684	0.003
685	0.006
686	0.000
687	0.000
688	0.008
689	0.000
SUBTOTAL	1.664

VP	
LABEL	ACRES*
6	0.085
7	0.054
80	0.001
106	0.000
108	0.001
115	0.041
182	0.000
183	0.005
184	0.000
185	0.001
186	0.001
192	0.001
193	0.002
203	0.000
205	0.001
206	0.000
219	0.003
225	0.022
228	0.005
237	0.001
238	0.009
241	0.006
242	0.004
248	0.008
251	0.003
270	0.011
272	0.007
273	0.001
274	0.001
275	0.001
276	0.001
282	0.003
285	0.019
289	0.017
301	0.029
302	0.036
303	0.028
304	0.047
305	0.021
307	0.014
308	0.070
309	0.030
310	0.006
311	0.002
312	0.007
313	0.001
314	0.023
315	0.045
316	0.007
318	0.056
322	0.035
323	0.026
324	0.000
325	0.099
326	0.004
327	0.013
328	0.022
329	0.002
330	0.005
333	0.005
334	0.003
335	0.008
337	0.019
338	0.018
339	0.034
340	0.006
341	1.078
342	0.007
343	0.015
344	0.031
345	0.006
346	0.009
347	0.008
348	0.004
349	0.026
350	0.022
351	0.019
352	0.012
353	0.011
354	0.066
355	0.012
356	0.045
358	0.416
359	0.013
360	0.032
362	0.033
363	0.060
365	0.031
366	0.016
367	0.024
368	0.018
369	0.010
370	0.085
371	0.018
372	0.034
373	0.030
374	0.013
375	0.124
376	0.041
377	0.029
378	0.008
379	0.007
380	0.013
382	0.035
383	0.099
384	0.014
386	0.023
387	0.012
388	0.021
389	0.237
391	0.023
394	0.006
397	0.008
399	0.044
400	0.003
401	0.004
402	0.021
407	0.002
408	0.003
415	0.013
416	0.026
419	0.028
432	0.008
433	0.002
435	0.026
436	0.019
437	0.016
441	0.021
442	0.021
443	0.043
cont. in fourth column	

VP (CONTINUED)	
LABEL	ACRES*
444	0.080
445	1.012
446	0.047
448	0.107
449	0.017
450	0.047
451	0.072
455	0.031
456	0.002
457	0.016
459	0.011
460	0.001
461	0.021
464	0.004
465	0.010
469	0.024
476	0.001
477	0.052
482	0.026
483	0.110
484	0.016
485	0.006
488	0.029
490	0.009
491	0.007
492	0.010
493	0.016
494	0.015
497	0.003
500	0.010
501	0.010
502	0.012
506	0.011
507	0.017
508	0.001
509	0.003
510	0.036
511	0.011
513	0.001
514	0.009
515	0.046
517	0.013
518	0.169
519	0.119
520	0.257
521	0.213
522	0.065
523	0.016
524	0.006
525	0.019
526	0.004
527	0.142
528	0.031
529	0.033
530	0.066
531	0.005
532	0.005
533	0.012
534	0.147
535	0.041
536	0.011
537	0.051
538	0.040
539	0.039
540	0.027
541	0.006
542	0.015
547	0.992
548	0.034
551	0.047
556	0.006
558	0.056
560	0.050
575	0.027
576	0.023
577	0.026
580	0.012
586	0.207
590	0.065
592	0.004
593	0.004
594	0.005
595	0.028
612	0.003
614	0.001
621	0.089
622	0.047
623	0.040
624	0.017
625	0.015
626	0.013
627	0.087
628	0.120
629	0.110
630	0.069
631	0.024
632	0.153
633	0.067
634	0.062
635	0.145
636	0.151
637	0.058
638	0.172
639	0.059
640	0.057
641	0.020
642	0.075
643	0.019
644	0.011
645	0.007
646	0.006
647	0.002
648	0.000
649	0.000
650	0.000
651	0.001
652	0.000
653	0.001
654	0.002
655	0.078
656	0.107
657	0.097
658	0.057
699	0.007
703	0.003
708	0.017
710	0.001
711	0.002
712	0.000
713	0.023
714	0.067
715	0.162
716	0.069
717	0.019
719	0.895
721	0.008
722	0.023
723	0.038
724	0.015
725	0.068
726	0.042
727	0.157
728	0.025
729	0.062
730	0.014
731	0.015
732	0.187
733	0.006
734	0.014
735	0.007
736	0.037
737	0.156
738	0.066
739	0.071
740	0.054
741	0.026
742	0.031
743	0.004
744	0.046
745	0.058
746	0.005
747	0.009
748	0.007
749	0.011
750	0.019
752	0.080
753	0.110
754	0.001
755	0.003
756	0.000
757	0.001
758	0.016
760	0.003
762	0.001
763	0.074
764	0.394
765	0.134
766	0.254
SUBTOTAL	15.042

SWS	
LABEL	ACRES*
1	0.059

ID	
LABEL	ACRES*
65	1.544

DBO	
LABEL	ACRES*
771	0.303

TOTAL**	21.53

*Individual acreage reported to 3 significant figures. Features shown as 0 are < 0.0005 ac.
Digital GIS data file provides area in square feet as well as acres.
**Based on sum of subtotals at 2 significant figures.

WATERS OF THE U.S.

CLASSIFICATION	ACREAGE
DEPRESSIONAL WETLANDS	
Seasonal Wetland (DSW)	2.921
Vernal Pool (VP)	15.042
RIVERINE WETLANDS	
Seasonal Wetland (RSW)	1.664
Seasonal Wet Swale (SWS)	0.059
OTHER WATERS OF THE U.S.	
Intermittent Drainage (ID)	1.544
Drainage Basin Outfall	0.303
TOTAL	21.53

Other Features

- Data Point
- Project Boundary ±530 Acres

NOTES

- Delineated waters of the U.S, verified 8/15/05; #200400700.
- Digital base data provided by Wood Rodgers, Inc. Contour interval is 1 foot.
- Hydrologic Unit Code (HUC) for this site is 18020109.
- This wetland delineation utilizes the Corps' 1987 three-parameter methodology to delineate jurisdictional waters of the U.S.
- Study area wetlands and other waters of the U.S. were mapped using a Trimble GPS (Global Positioning System).

0 200 400
SCALE IN FEET

WETLAND DELINEATION

THE RANCH

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE
© 2014

FIGURE 3

DATE: 07/06/05
DELINEATED BY: CJS/RHB/KDW
(11/03 - 03/04, 05/04, 03/05 - 04/05 - 6/14)
REVISED: 10/09/2014
DRAWN BY: MUB

Document Path: O:\N_Cal\T_Projects\The_Ranch\GIS_Projects\Wetland_Delineation_ReSub_20140924.mxd

Document Name: Wetland_Delineation_ReSub_20140924 : 10/9/2014 3:41:02 PM

Appendix A — Contact Information and Directions

Client/Agent Contact Information:	Olga Sciorelli K. Hovnanian Homes 3721 Douglas Boulevard, Suite 150 Roseville, CA 95661 Phone Number: (916) 945-5362 Email: osciorelli@khov.com
Delineation Conducted By:	David Bise (Point of Contact) Rosie Black Cristian Singer Foothill Associates 590 Menlo Drive, Suite 5 Rocklin, CA 95765 Phone Number: (916) 435-1202 Email: dbise@foothill.com
Directions to the Project Site:	From Highway 50 east, take the Zinfandel Drive exit, turn right to stay on Zinfandel Drive, left onto Douglas Road, right onto Sunrise Boulevard, left onto Chrysanthy Boulevard, right on Steccato Drive, left on Appolon Drive, right on Sophistry Drive, left on Pericles Drive, and then left on Rancho Cordova Parkway. Rancho Cordova Parkway is the west boundary of the Project Site. The Project Site can be located within Section 16 of Township 8 North, Range 7 East on the USGS *Buffalo Creek*, California 7.5-minute quadrangle (38°32'45.6"N, 121°12'54.5"W).

DRAFT

Appendix B — Signed Statement Form Property Owner(s) Allowing Access

DRAFT

In the event the U.S. Army Corps of Engineers determined that a site inspection is necessary, I request the USACE to first contact Foothill Associates (Attn: David Bise) at (916) 435-1202 to schedule a date and time to enter the property described in this report. If the property is land-locked, the owner or proponent must obtain permission from the adjacent property owner(s) in order to provide access. I understand that this may delay the USACE's jurisdictional determination and the USACE's issuance of a determination letter.

Signature of Property Owner (s)	Date
Printed Name	
Signature of Property Owner (s)	Date
Printed Name	

DRAFT

Appendix C — Routine Wetland Determination Data Forms

Data forms provided herein are from the original 2005 delineation. While modifications and additions to jurisdictional features occurred between the original delineation and the 2014 Preliminary Jurisdictional Determination (Regulatory No. SPK-2004-00707), formal data forms were not required and are therefore not included.

DRAFT

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Jaeger 530 Applicant/Owner: River West Investments, Inc. Investigator: Cristian Singer	Date: 03/24/2004 County: Sacramento State: California
Do Normal Circumstances exist on the site? (●) Yes ( ) No Is the site significantly disturbed (Atypical Situation)? ( ) Yes (●) No Is the area a potential Problem Area? ( ) Yes (●) No (If needed, explain on reverse.)	Community ID: UPL Transect ID: 1 Plot ID: N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Trifolium subterraneum (65%)	HERB	
2. Deschampsia danthonioides (15%	HERB	FACW
3. Elatine sp. (5%)	HERB	OBL
4. Poa annua (10%)	HERB	FACW-
5. Ranunculus bonariensis (5%)	HERB	OBL
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0 %

Remarks: Trifolium subterraneum is not on the list (NL). Dominant vegetation is not hydrophytic.

HYDROLOGY

- [x] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [x] Aerial Photographs
  - [ ] Other
- [ ] No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (in.)

Depth to Free Water in Pit: N/A (in.)

Depth to Saturated Soil: 10.0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- [ ] Inundated
- [x] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [x] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: Wetland hydrology present.

Example Data Forms

SOILS

Map Unit Name
(Series and Phase): Redding loam, 2-8% slopes

Drainage Class: D

Taxonomy (Subgroup): Abruptic Durixeralfs

Field Observations
Confirm Mapped Type? (●) Yes ( ) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
1-2	O	N/A	N/A	N/A	N/A
2-12	A	5YR 3/4	10 YR 5/1	comm,med, distinct	silt loam

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: First 1-2 inches consist of mainly organic matter, root zone with no discernible matrix, etc. Hydric soil indicators not present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	( ) Yes	(●) No
Wetland Hydrology Present?	( ) Yes	(●) No
Hydric Soils Present?	( ) Yes	(●) No

Is this Sampling Point Within a Wetland? ( ) Yes (●) No

Remarks: Does not meet all three parameters; sampling period occurred during the wet season, hydrology unreliable; upland (UPL).

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Jaeger 530 Applicant/Owner: River West Investments, Inc. Investigator: Cristian Singer	Date: 03/24/2004 County: Sacramento State: California
Do Normal Circumstances exist on the site? (●) Yes ( ) No Is the site significantly disturbed (Atypical Situation)? ( ) Yes (●) No Is the area a potential Problem Area? ( ) Yes (●) No (If needed, explain on reverse.)	Community ID: UPL Transect ID: 2 Plot ID: N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Trifolium subterraneum (60%)	HERB	
2. Hordeum marinum (15%)	HERB	FAC
3. Poa annua (10%)	HERB	FACW-
4. Elatine sp. (5%)	HERB	OBL
5. (Hypochaeris glabra) (10%)	HERB	NI
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0 %

Remarks: Trifolium subterraneum is not on the list (NL). Hydrophytic vegetation not dominant.

HYDROLOGY

- [x] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [x] Aerial Photographs
  - [ ] Other
- [ ] No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (in.)

Depth to Free Water in Pit: N/A (in.)

Depth to Saturated Soil: 12.0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- [ ] Inundated
- [x] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [x] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: Wetland hydrologic indicators present.

Example Data Forms

SOILS

Map Unit Name (Series and Phase): Redding loam, 2-8% slopes

Drainage Class: D

Taxonomy (Subgroup): Abruptic Durixeralfs

Field Observations Confirm Mapped Type? (●) Yes ( ) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
1-2	O	N/A	N/A	N/A	N/A
2-14	A	5 YR 3/4	10 YR 5/1	comm. lg, distinct	silt loam

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☑ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Manganese stains, mottling common. Meets criteria.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	( ) Yes	(●) No
Wetland Hydrology Present?	(●) Yes	( ) No
Hydric Soils Present?	(●) Yes	( ) No

Is this Sampling Point Within a Wetland? ( ) Yes (●) No

Remarks: Does not all three parameters; sampling period occurred during the wet season, hydrology unreliable; upland (UPL).

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Jaeger 530 Applicant/Owner: River West investments, Inc. Investigator: Cristian Singer	Date: 03/24/2004 County: Sacramento State: California
Do Normal Circumstances exist on the site? (●) Yes ( ) No Is the site significantly disturbed (Atypical Situation)? ( ) Yes (●) No Is the area a potential Problem Area? ( ) Yes (●) No (If needed, explain on reverse.)	Community ID: UPL Transect ID: 3 Plot ID: N/A

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Trifolium subterraneum (65%)	HERB	
2. Deschampsia danthonioides 10%	HERB	FACW
3. Poa annua (5%)	HERB	FACW-
4. Elatine sp. (5%)	HERB	OBL
5.		
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0 %

Remarks: Trifolium subterraneum is not on the list (NL). Dominant vegetation is not hydrophytic.

HYDROLOGY

☑ Recorded Data (Describe in Remarks):
- ☐ Stream, Lake, or Tide Gauge
- ☑ Aerial Photographs
- ☐ Other

☐ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (in.)

Depth to Free Water in Pit: N/A (in.)

Depth to Saturated Soil: N/A (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☑ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Moist but not saturated at 12.0 inches. Wetland hydrologic indicators not present. Does not meet criteria.

Example Data Forms

SOILS

Map Unit Name (Series and Phase): Redding gravelly loam, 0-8% slopes

Drainage Class: D

Taxonomy (Subgroup): Abruptic Durixeralfs

Field Observations Confirm Mapped Type? (•) Yes ( ) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-2	O	N/A	N/A	N/A	gravelly loam w/cobble
1.4	A	7.5 YR 3/4	2.5Y 6/1	comm., lrg, promine	gravelly silt loam
4-12	A	5 YR 3/4	2.5Y 6/1	comm., lrg, promine	silt loam

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: First 1-2 inches are mix of root zone and cobble, gravel. Cobble up to 2.0" throughout but somewhat smaller at 6"-12" profile. Mottling and manganese up to at least 12.0": Mottle and matrix co-dominate in 1"-4" profile. Does not meet criteria

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	( ) Yes	(•) No
Wetland Hydrology Present?	( ) Yes	(•) No
Hydric Soils Present?	( ) Yes	(•) No

Is this Sampling Point Within a Wetland? ( ) Yes (•) No

Remarks: Does not meet all three parameters; upland (UPL).

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Jaeger 530 Applicant/Owner: Rive West Investments, Inc. Investigator: Cristian Singer	Date: 03/24/2004 County: Sacramento State: California
Do Normal Circumstances exist on the site? (•) Yes ( ) No Is the site significantly disturbed (Atypical Situation)? ( ) Yes (•) No Is the area a potential Problem Area? ( ) Yes (•) No (If needed, explain on reverse.)	Community ID: DSW Transect ID: 4 Plot ID: A

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Ranunculus bonariensis (40%)	HERB	OBL
2. Hordeum marinum (15%)	HERB	FAC
3. Trifolium subterraneum (10%)	HERB	NI
4. Poa annua (15%)	HERB	FACW-
5.		
6.		
7.		
8.		
9. other species, 3-5% cover		
10. Cordylanthus sp.	HERB	NI
11. Briza minor	HERB	FACW-
12. Juncus bufonius	HERB	FACW+
13. Psilocarphus sp.	HERB	OBL
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100 %

Remarks: Hydrophytic vegetation dominant.

HYDROLOGY

- [x] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [x] Aerial Photographs
  - [ ] Other
- [ ] No Recorded Data Available

Field Observations:

Depth of Surface Water:	N/A (in.)
Depth to Free Water in Pit:	N/A (in.)
Depth to Saturated Soil:	N/A (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- [ ] Inundated
- [x] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [x] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: Shallow depression; wetland hydrology indictors present.

Example Data Forms

SOILS

Map Unit Name (Series and Phase): Redding loam, 2-8% slopes

Drainage Class: D

Taxonomy (Subgroup): Abruptic Durixeralfs

Field Observations Confirm Mapped Type? (•) Yes ( ) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
1-12	A	5 YR 3/4	10 YR 5/1	com., med, promine	silt loam

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☑ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Hydric soil indicators present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (•) Yes ( ) No

Wetland Hydrology Present? (•) Yes ( ) No

Hydric Soils Present? (•) Yes ( ) No

Is this Sampling Point Within a Wetland? (•) Yes ( ) No

Remarks: Meets all three parameters; depressional seasonal wetland (DSW).

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Jaeger 530 Applicant/Owner: River West Investments, Inc. Investigator: Cristian Singer	Date: 03/24/2004 County: Sacramento State: California
Do Normal Circumstances exist on the site? (●) Yes ( ) No Is the site significantly disturbed (Atypical Situation)? ( ) Yes (●) No Is the area a potential Problem Area? ( ) Yes (●) No (If needed, explain on reverse.)	Community ID: UPL Transect ID: 4 Plot ID: B

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Taeniatherum caput-medusae 35%	HERB	NI
2. Holocarpha virgata (20%)	HERB	NI
3. Bromus hordeaceus (20%)	HERB	FACU-
4. Trifolium subterraneum (10%)	HERB	NI
5. Hordeum marinum (10%)	HERB	FAC
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0 %

Remarks: NI/FACU vegetation dominant.

HYDROLOGY

- [x] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [x] Aerial Photographs
  - [ ] Other
- [ ] No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (in.)

Depth to Free Water in Pit: N/A (in.)

Depth to Saturated Soil: N/A (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- [ ] Inundated
- [ ] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [x] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: Wetland hydrology indicators not present.

Example Data Forms

SOILS

Map Unit Name (Series and Phase): Redding loam, 2-8% slopes

Drainage Class: D

Taxonomy (Subgroup): Abruptic Durixeralfs

Field Observations Confirm Mapped Type? (●) Yes ( ) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-12	A	7.5 YR 3/3	N/A	few, fine, faint	silt loam

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☑ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Concretions are small and hard - relict. Does not meet criteria.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	( ) Yes	(●) No
Wetland Hydrology Present?	( ) Yes	(●) No
Hydric Soils Present?	( ) Yes	(●) No

Is this Sampling Point Within a Wetland? ( ) Yes (●) No

Remarks: Does not meet criteria; upland (UPL).

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Jaeger 530 Applicant/Owner: River West Investments, Inc. Investigator: Cristian Singer	Date: 03/24/2004 County: Sacramento State: California
Do Normal Circumstances exist on the site? (•) Yes ( ) No Is the site significantly disturbed (Atypical Situation)? ( ) Yes (•) No Is the area a potential Problem Area? (•) Yes ( ) No (If needed, explain on reverse.)	Community ID: VP Transect ID: 5 Plot ID: A

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Ranunculus bonariensis (45%)	HERB	OBL
2. Eryngium vaseyi (20%)	HERB	FACW
3. Glyceria sp. (15%)	HERB	OBL
4. Eleocharis macrostachya (10%)	HERB	OBL
5. Deschampsia danthonioides (10%	HERB	FACW
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100 %

Remarks: Hydrophytic vegetation dominant.

HYDROLOGY

[✓] Recorded Data (Describe in Remarks):
- [ ] Stream, Lake, or Tide Gauge
- [✓] Aerial Photographs
- [ ] Other

[ ] No Recorded Data Available

Field Observations:

Depth of Surface Water:	4.0-7.0 (in.)
Depth to Free Water in Pit:	0.0 (in.)
Depth to Saturated Soil:	0.0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [✓] Inundated
- [✓] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: Wetland hydrology indicators present.

Example Data Forms

SOILS

Map Unit Name (Series and Phase): Redding loam, 2-8% slopes

Drainage Class: D

Taxonomy (Subgroup): Abruptic Durixeralfs

Field Observations Confirm Mapped Type? (•) Yes ( ) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-3	A	7.5 YR 4/1	N/A	few,small,faint	silty clay loam
3-12	A	7.5 YR 4/2	2.5 YR 3/6	many, lrg, distinct	silty clay loam

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☑ Gleyed or Low-Chroma Colors
- ☑ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☑ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Many soft, large concretions. Large mottles throughout the 3-12 inch layer. Hydric soil indicators present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (•) Yes ( ) No

Wetland Hydrology Present? (•) Yes ( ) No

Hydric Soils Present? (•) Yes ( ) No

Is this Sampling Point Within a Wetland? (•) Yes ( ) No

Remarks: Meets all three parameters; vernal pool (VP).

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Jaeger 530 Applicant/Owner: River West Investments, Inc. Investigator: Cristian Singer	Date: 03/24/2004 County: Sacramento State: California
Do Normal Circumstances exist on the site? ◉ Yes ○ No Is the site significantly disturbed (Atypical Situation)? ○ Yes ◉ No Is the area a potential Problem Area? ○ Yes ◉ No (If needed, explain on reverse.)	Community ID: UPL Transect ID: 5 Plot ID: B

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Trifolium subterraneum (70%)	HERB	
2. Taeniatherum caput-medusae 15'	HERB	NI
3. Erodium sp. (10%)	HERB	NI
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0 %

Remarks: Trifolium subterraneum is not listed (NL). Vegetation community is dominantly NI.

HYDROLOGY

☑ Recorded Data (Describe in Remarks):
- ☐ Stream, Lake, or Tide Gauge
- ☑ Aerial Photographs
- ☐ Other

☐ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (in.)

Depth to Free Water in Pit: N/A (in.)

Depth to Saturated Soil: 10.0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☑ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Wetland hydrology indicators present.

Example Data Forms

SOILS

Map Unit Name (Series and Phase): Redding loam, 2-8% slopes

Drainage Class: D

Taxonomy (Subgroup): Abruptic Durixeralfs

Field Observations Confirm Mapped Type? (•) Yes ( ) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-10	A	5 YR 4/3	N/A	N/A	silt loam

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Hydric soil indicators not present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	( ) Yes	(•) No
Wetland Hydrology Present?	(•) Yes	( ) No
Hydric Soils Present?	( ) Yes	(•) No

Is this Sampling Point Within a Wetland? ( ) Yes (•) No

Remarks: Does not meet all three parameters; upland (UPL).

Approved by HQUSACE 3/92

Appendix D — Aquatic Resources Excel Spreadsheet

Information that would normally be included in the aquatic resources excel spreadsheet can be found in the CD submitted with the associated new Clean Water Act 404 application package.

DRAFT

APPENDIX C.2

Biological Resources Assessment

Biological Resources Assessment

The Ranch ±530- Acre Study Area
City of Rancho Cordova, California

DRAFT

Prepared for:

K. Hovnanian Homes

October 13, 2017

TABLE OF CONTENTS

1.0 Introduction 1
1.1. Project Description 1
2.0 Regulatory Framework 2
2.1. Federal Regulations 2
2.1.1. Federal Endangered Species Act 2
2.1.2. Migratory Bird Treaty Act 2
2.1.3. The Bald and Golden Eagle Protection Act 2
2.2. State Jurisdiction 3
2.2.1. California Endangered Species Act 3
2.2.2. California Department of Fish and Game Codes 3
2.2.3. Native Plant Protection Act 3
2.3. Jurisdictional Waters 3
2.3.1. Federal Jurisdiction 3
2.3.2. State Jurisdiction 5
2.4. CEQA Significance 5
2.4.1. California Native Plant Society 6
2.4.2. California Department of Fish and Wildlife Species of Concern 7
2.5. Draft South Sacramento Habitat Conservation Plan 7
2.6. City of Rancho Cordova General Plan 7
3.0 Methods 8
4.0 Results 10
4.1. Study Area Location and Description 10
4.2. Physical Features 10
4.2.1. Topography and Drainage 10
4.2.2. Soils 10
4.3. Biological Communities 12
4.3.1. Annual Grassland 12
4.3.2. Developed/Disturbed 12
4.3.3. Seasonal Wetland 13
4.3.4. Vernal Pool 13
4.3.5. Intermittent Drainage 13

DRAFT

4.3.6. Seasonal Wet Swale 13
4.3.7. Detention Basin Outfall 13
4.4. Special-Status Species 14
4.4.1. Listed and Special-Status Plants 15
4.4.2. Listed and Special-Status Wildlife 16
4.5. Sensitive Habitats 19
4.5.1. Jurisdictional Waters of the U.S. and State 19
5.0 Conclusions and Recommendations 20
5.1. Special-Status Plant Species 21
5.2. Western Spadefoot 21
5.3. American Badger 22
5.4. Vernal Pool Branchiopods 22
5.5. Swainson's Hawk 23
5.6. Burrowing Owl 23
5.7. Golden Eagle Foraging Habitat 24
5.8. Other Raptors and Migratory Birds 24
5.9. Pallid Bat 25
5.10. Sensitive Habitats 26
5.10.1. Jurisdictional Waters 26
5.11. Summary of Avoidance and Minimization Measures 27
6.0 References 28

List of Tables

Table 1 — Impacts to Biological Communities 20
Table 2 — Impacts to Sensitive Habitats 26

List of Figures

Figure 1 — Site and Vicinity 30
Figure 2 — Soils 31
Figure 3 — Biological Communities 32
Figure 4 — Proposed Project Impacts to Biological Communities 33

DRAFT

List of Appendices

Appendix A — Applicable Sections of Rancho Cordova General Plan and South Sacramento Habitat Conservation Plan
Appendix B — Regionally Occurring Listed and Special-Status Species
Appendix C — Plants and Wildlife Observed in the Study Area

DRAFT

Executive Summary

Foothill Associates' biologists synthesized the results of June 12 and 13, 2017, surveys within the 530-acre Study Area and past studies and biological reports to produce an up to date biological resources assessment of The Ranch Project located within the City of Rancho Cordova, California. The Study Area lies immediately east of Rancho Cordova Parkway and a half mile south of Douglas Road. The purpose of this document is to summarize the general biological resources within the Study Area, to assess the suitability of the Study Area to support special-status species and sensitive habitat types, and to provide recommendations for regulatory permitting or further analysis that may be required prior to development activities occurring on the site.

The Ranch site (Study Area) consists of ±530 acres of land that is dominated by annual grassland that is bisected northeast to southwest by an intermittent drainage and interspersed with numerous vernal pools and other seasonal wetlands. Land uses surrounding the Study Area include livestock grazing and residential development.

Known or potential biological constraints in the Study Area include the following:

- Wetlands and other waters of the U.S. subject to Clean Water Act 404/401 and Section 1600 of Fish and Game Code regulations;
- Potential habitat for special-status plants Ahart's dwarf rush, dwarf downingia, pincushion navarretia, and hoary navarretia;
- Potential habitat for western burrowing owl;
- Assumed occupied habitat for federally-listed vernal pool branchiopods; and
- Potential habitat for western spadefoot, American badger, western pond, pallid bat, and nesting birds.

DRAFT

1.0 INTRODUCTION

This report summarizes the findings of previous surveys, studies, and reports as well as 2017 fieldwork completed for the approximate 530-acre Study Area, located within the City of Rancho Cordova, California. This document addresses the onsite physical features, as well as plant communities present and the common plant and wildlife species occurring, or potentially occurring within the Study Area. Furthermore, the suitability of habitats to support special-status species and sensitive habitats are analyzed and recommendations are provided for any regulatory permitting or further analysis required prior to development activities occurring within the Study Area.

1.1. Project Description

The Ranch, also known as Jaeger Ranch, The Preserve, and Sunridge 530, is a ±530-acre parcel located approximately five miles southeast of downtown Rancho Cordova. The Study Area lies immediately east of Rancho Cordova Parkway, north of Kiefer Boulevard, west of Grant Line Road, and south of Douglas Road. The proposed project involves grading portions of the site and filling approximately 6.54 acres of waters of the U.S., including wetlands, to construct a mixed-use development. Proposed development includes: 314.62 acres of low density residential and light commercial development.

DRAFT

2.0 REGULATORY FRAMEWORK

Federal, State, and local environmental laws, regulations, and policies relevant to the California Environmental Quality Act (CEQA) review process are summarized below. The CEQA significance criteria are also included in this section.

2.1. Federal Regulations

2.1.1. Federal Endangered Species Act

The U.S. Congress passed the Federal Endangered Species Act (FESA) in 1973 to protect those species that are endangered or threatened with extinction. FESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend.

FESA prohibits the "take" of endangered or threatened wildlife species. "Take" is defined to include harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (FESA Section 3 [(3)(19)]). Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns (50 CFR §17.3). Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns (50 CFR §17.3). Actions that result in take can result in civil or criminal penalties.

In the context of the proposed project, FESA consultation with the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) would be initiated if development resulted in take of a threatened or endangered species or if issuance of a Section 404 permit or other federal agency action could result in take of an endangered species or adversely modify critical habitat of such a species.

2.1.2. Migratory Bird Treaty Act

Raptors (birds of prey), migratory birds, and other avian species are protected by a number of State and federal laws. The federal Migratory Bird Treaty Act (MBTA) prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior.

2.1.3. The Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (Eagle Act) prohibits the taking or possession of and commerce in bald and golden eagles with limited exceptions. Under the Eagle Act, it is a violation to "*take, possess, sell, purchase, barter, offer to sell, transport, export or import, at any time or in any manner, any bald eagle commonly known as the American eagle, or golden eagle, alive or dead, or any part, nest, or egg, thereof*." Take is defined to include pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, and disturb. Disturb is further defined in 50 CFR Part 22.3 as "*to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available (1) injury to*

an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

2.2. State Jurisdiction

2.2.1. California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. CESA is similar to the FESA but pertains to State-listed endangered and threatened species. CESA requires state agencies to consult with the California Department of Fish and Wildlife (CDFW), when preparing CEQA documents. The purpose is to ensure that the State lead agency actions do not jeopardize the continued existence of a listed species or result in the destruction, or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available (Fish and Game Code §2080). CESA directs agencies to consult with CDFW on projects or actions that could affect listed species, directs CDFW to determine whether jeopardy would occur and allows CDFW to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. CESA allows CDFW to authorize exceptions to the State's prohibition against take of a listed species if the "take" of a listed species is incidental to carrying out an otherwise lawful project that has been approved under CEQA (Fish & Game Code § 2081).

2.2.2. California Department of Fish and Game Codes

A number of species have been designated "fully protected" species under Sections 5515, 5050, 3511, and 4700 of the Fish and Game Code, but are not listed as endangered (Section 2062) or threatened (Section 2067) species under CESA. Except for take related to scientific research, all take of fully protected species is prohibited. The California Fish and Game Code defines take as "*hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.*" Additionally, Section 3503 of the California Fish and Game Code prohibits the killing of birds or the destruction of bird nests.

2.2.3. Native Plant Protection Act

The Native Plant Protection Act (NPPA), enacted in 1977, allows the Fish and Game Commission to designate plants as rare or endangered. There are 64 species, subspecies, and varieties of plants protected under the NPPA. The NPPA prohibits take of endangered or rare native plants, with some exceptions for agricultural and nursery operations and emergencies. Vegetation removal from canals, roads, and other Study Areas, changes in land use, and certain other situations require proper advance notification to CDFW.

2.3. Jurisdictional Waters

2.3.1. Federal Jurisdiction

The U.S. Army Corps of Engineers (Corps) regulates discharge of dredge or fill material into waters of the U.S. under Section 404 of the Clean Water Act (CWA). "Discharges of fill material"

DRAFT

is defined as the addition of fill material into waters of the U.S., including, but not limited to the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; Study Area-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; fill for intake and outfall pipes and subaqueous utility lines [33 C.F.R. §328.2(f)].

Waters of the U.S. include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, and wet meadows. Boundaries between jurisdictional waters and uplands are determined in a variety of ways depending on which type of waters is present. Methods for delineating wetlands and non-tidal waters are described below.

- Wetlands are defined as "*those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions*" [33 C.F.R. §328.3(b)]. Presently, to be a wetland, a Study Area must exhibit three wetland criteria: hydrophytic vegetation, hydric soils, and wetland hydrology existing under the "normal circumstances" for the Study Area.
- The lateral extent of non-tidal waters is determined by delineating the ordinary high water mark (OHWM) [33 C.F.R. §328.4(c)(1)]. The OHWM is defined by the Corps as "*that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas*" [33 C.F.R. §328.3(e)].

An aquatic feature is determined to be a water of the U.S. based on nexus with a traditionally navigable water pursuant to the Supreme Court's decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (126 S. Ct. 2208) and agency guidance subsequent to this decision. Under these rules, the Corps asserts jurisdiction over wetlands adjacent to traditional navigable waters, relatively permanent non-navigable tributaries (i.e., waters that have a continuous flow at least three months out of the year), and wetlands that abut relatively permanent tributaries. The Corps determines jurisdiction over waters that are non-navigable tributaries that are not relatively permanent, and wetlands adjacent to these tributaries, by making a determination whether such waters "significantly affect the chemical, physical, and biological integrity of other jurisdictional waters more readily understood as "navigable." Finally, the Corps generally does not consider the following to be "waters of the United States": swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent or short duration flow) and ditches "wholly in and draining only uplands…which do not carry a relatively permanent flow of water." Navigable waters of the United States are defined as waters that have been used in the past, are now used, or are susceptible to use as a means to transport interstate or foreign commerce up to the head of navigation.

DRAFT

2.3.2. State Jurisdiction

Regional Water Quality Control Boards

Discharges of fill or waste material to waters of the State are regulated by the State Water Resources Control Board (SWRCB) through its Regional Water Quality Control Boards (RWQCB) under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act (contained in the California Water Code). All waters of the U.S. are also considered waters of the State. In addition, other aquatic features that are not subject to Corps' jurisdiction, such as roadside ditches or isolated wetlands, may be considered waters of the State. This determination will be made by RWQCB staff on a case-by-case basis.

Section 401 of the CWA requires an applicant to obtain "water quality certification" to ensure compliance with State water quality standards before certain federal licenses or permits may be issued. Section 13260(a) of the Porter-Cologne Water Quality Control Act requires any person discharging waste, including dredged or fill material, or proposing to discharge waste, other than to a community sewer system, within any region that could affect the quality of the waters of the State (all surface and subsurface waters) to file a report of waste discharge. The permits subject to Section 401 include CWA Section 404 permits issued by the Corps. Waste discharge requirements under the Porter-Cologne Water Quality Control Act were typically waived for projects that required certification. Discharges to waters of the State that are not subject to a CWA Section 404 permit rely on the report of waste discharge process.

California Department of Fish and Wildlife

The CDFW is a trustee agency that has jurisdiction under Section 1600 *et seq.* of the California Fish and Game Code. Under Sections 1602 and 1603, a private party must notify CDFW if a proposed project will "*substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds…except when the department has been notified pursuant to Section 1601.*" Additionally, CDFW asserts jurisdiction over native riparian habitat adjacent to aquatic features, including native trees over 4-inches in diameter at breast height (DBH). If an existing fish or wildlife resource may be substantially adversely affected by the activity, CDFW may propose reasonable measures that will allow protection of those resources. If these measures are agreeable to the parties involved, they may enter into an agreement with CDFW identifying the approved activities and associated mitigation measures. Generally, CDFW recommends submitting an application for a Streambed Alteration Agreement (SAA) for any work done within the lateral limit of water flow or the edge of riparian vegetation, whichever is greater.

2.4. CEQA Significance

Section 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study Checklist contained in Appendix G of the CEQA Guidelines. Appendix G provides examples of impacts that would normally be considered significant. Based on these

DRAFT

examples, impacts to biological resources would normally be considered significant if the project would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery Study Areas;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and
- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional or state habitat conservation plan.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, State, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant according to CEQA. The reason for this is that although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish, or result in the permanent loss of, an important resource on a population-wide or region-wide basis.

2.4.1. California Native Plant Society

The California Native Plant Society (CNPS) maintains a rank of plant species native to California that have low population numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the *Inventory of Rare and Endangered Vascular Plants of California*. Potential impacts to populations of CNPS-ranked plants receive consideration under CEQA review. The following identifies the definitions of the CNPS ranks:

- Rank 1A: Plants presumed Extinct in California
- Rank 1B: Plants Rare, Threatened, or Endangered in California and elsewhere
- Rank 2: Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere

DRAFT

- Rank 3: Plants about which we need more information – A Review List
- Rank 4: Plants of limited distribution – A Watch List

All plants appearing on CNPS Rank 1 or 2 are considered to meet CEQA Guidelines Section 15380 criteria. While only some of the plants ranked 3 and 4 meet the definitions of threatened or endangered species, the CNPS recommends that all Rank 3 and Rank 4 plants be evaluated for consideration under CEQA.

2.4.2. California Department of Fish and Wildlife Species of Concern

Some additional fish, amphibian, reptile, bird, and mammal species may receive consideration by CDFW and lead agencies during the CEQA process, in addition to species that are formally listed under FESA and CESA or are fully protected. These species are included on the *Special Animals List*, which is maintained by CDFW. This list tracks species in California whose numbers, reproductive success, or habitat may be in decline. In addition to "Species of Special Concern" (SSC), the *Special Animals List* includes species that are tracked in the California Natural Diversity Database (CNDDB), but warrant no legal protection. These species are identified as "California Special Animals" (CSA).

2.5. Draft South Sacramento Habitat Conservation Plan

The draft *South Sacramento Habitat Conservation Plan* (SSHCP) was released in February 2017. Its purpose is to streamline State and federal permitting processes for covered development projects that take place within signatory municipalities. It aims to protect habitat, open space, and agricultural lands through a number of Biological Goals, Measurable Objectives, and Conservation Actions enumerated in *Chapter 7 – Conservation Strategy* included in **Appendix A** (County of Sacramento 2017). The Ranch Project would fall under the jurisdiction of the SSHCP, if implemented, for purposes of estimating impacts to covered species and for estimating mitigation costs.

2.6. City of Rancho Cordova General Plan

In addition to the federal and State regulations described above, the *City of Rancho Cordova General Plan* (General Plan) identifies goals, objectives, and policies to provide further protection to biological resources within the County's limits (City of Rancho Cordova 2006). Applicable General Plan policies are summarized below and included in **Appendix A**.

The General Plan's *Natural Resources Element* aims to identify "*the ways in which Rancho Cordova will protect, maintain, and enhance its natural resources*" enumerated by list of goals. Goal NR.1 seeks to "*protect and preserve diverse wildlife and plant habitat, including habitat for special status species.*" Goals NR.2 and NR.3 seek to preserve the areas wetlands and creek corridors. These goals are achieved through a number of policies and action items as described in the *Natural Resources Element* included in **Appendix A**.

DRAFT

3.0 METHODS

Available information pertaining to the natural resources of the region was reviewed. All references reviewed for this assessment are listed in the **References** section. The following site-specific information was reviewed:

- California Department of Fish and Wildlife (CDFW). 2017. *California Natural Diversity Data Base* (CNDDB: *Citrus Heights, Folsom, Clarksville, Carmichael, Buffalo Creek, Folsom SE, Elk Grove, Sloughhouse, Carbondale* U.S. Geological Survey (USGS) 7.5-minute series quadrangles), Sacramento, CA. Accessed [07/11/2017] (**Appendix B**);
- California Native Plant Society (CNPS). 2017. *Inventory of Rare and Endangered Plants* (online edition, v8-02) (CNPS: *Citrus Heights, Folsom, Clarksville, Carmichael, Buffalo Creek, Folsom SE, Elk Grove, Sloughhouse, Carbondale* quadrangles). Accessed [07/11/2017] (**Appendix B**);
- U.S. Fish and Wildlife Service (USFWS). 2017. *Information for Planning and Conservation* (IPaC) *Trust Resource Report: The Ranch, Sacramento County*. Accessed [07/11/2017] (**Appendix B**);
- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2017. *Web Soil Survey*. Available online at: http://websoilsurvey.sc.egov.usda.gov/App/HomePage.html. Accessed [07/12/2017];
- U.S. Geological Survey. 1967. Photorevised 1980. *Buffalo Creek, California*. 7.5-minute series topographic quadrangle. United States Department of Interior; and
- Biological reports and associated documents previously prepared for the Study Area.

Prior to conducting a survey of the Study Area, existing information, including *The Ranch at Sunridge Project: Section 7 Biological Assessment* (Foothill Associates 2012), *Jaeger ±530-Acre Study Area: Wetland Delineation Report* (Foothill Associates 2005), *Special Status Plant Report ±530-Acre Peery Arrillaga Sunrise Douglas Site* (North Fork Associates 2002), and rare plant survey letter reports prepared by Foothill Associates in 2009 and 2017 for the Study Area were reviewed. The results of the special-status species records search and five-mile radius CNNDB query are summarized in **Appendix B**. The most recent field surveys of the Study Area were conducted on June 12 and 13, 2017. The Study Area was systematically surveyed on foot with binoculars to ensure total search coverage, with special attention given to identifying those portions of the Study Area with the potential for supporting special-status species and sensitive habitats. During the field surveys, biologists recorded plant and animal species observed (**Appendix C**), as well as characterized biological communities occurring within the Study Area. Wetland features were previously delineated within the Study Area and verified by the Corps in 2014 (Corps 2014). Wetland polygons along the eastern boundary of Rancho Cordova Parkway were remapped in 2017 to address impacts that may have occurred during expansion of Rancho Cordova Parkway.

DRAFT

Following the Study Area survey, the potential for each species identified in the records search to occur in the Study Area was determined based within the Study Area surveys, soils, and species-specific information, as shown in **Appendix B**.

DRAFT

4.0 RESULTS

4.1. Study Area Location and Description

The Study Area is located in the City of Rancho Cordova north of Kiefer Boulevard, east of Rancho Cordova Parkway, south of Douglas Road, and west of Grant Line Road. Land uses surrounding the Study Area include residential developments to the north and west and rangeland to the south and east. The Study Area is located within Section 16, Township 8 North, Range 7 East, of the USGS 7.5-minute series *Buffalo Creek, California* quadrangle. The approximate location of the center of the Study Area is 38° 32' 43.93" North, 121° 12' 55.20" West (**Figure 1**).

The Study Area consists of ±530 acres of land that is currently used for livestock grazing.

4.2. Physical Features

4.2.1. Topography and Drainage

The general topography of the Study Area is gently undulating, generally sloping in a westerly direction with elevations ranging from 200 feet above mean sea level (MSL) at points along the eastern boundary of the Study Area to 170 feet above MSL in the central drainage channel at the western boundary of the Study Area (52 – 61 meters). The Study Area is crossed by an unnamed intermittent drainage that runs northeast to southwest and flows off the Study Area under Rancho Cordova Parkway and into Anatolia Preserve. The Study Area also contains numerous depressional and riverine wetlands. Water leaves the Study Area through the intermittent drainage as well as over land and through small riverine wetlands on the eastern and southern portions of the Study Area. Water enters the Study Area through the intermittent drainage as well as through seasonal precipitation.

The Study Area is located in the Upper Morrison Creek and Laguna Creek Watersheds. The Upper Morrison Creek Watershed encompasses approximately 50 square miles. Its main drainage, Morrison Creek, flows approximately 20 miles from the foothills in the east through the cities of Rancho Cordova and Sacramento. It drains into the Sacramento River. The Laguna Creek Watershed encompasses approximately 45 square miles. Its main drainage, Laguna Creek, flows 25 miles from the foothills in the east through the cities of Rancho Cordova, Elk Grove, and Sacramento. Historically a seasonal drainage, Laguna Creek now carries water throughout much of the year due to urban and agricultural runoff caused by increasing urbanization of the watershed in southern Sacramento County. Laguna Creek drains to Morrison Creek and ultimately to the lower Sacramento River.

4.2.2. Soils

The Natural Resources Conservation Service (NRCS) has mapped five soil units within the Study Area (**Figure 2**). The soil units that occur on Study Area include: **Fiddyment Fine Sandy Loam, 1 to 8 Percent Slopes**, **Hicksville Gravelly Loam, 0 to 2 Percent Slopes, Occasionally Flooded**, **Red Bluff-Redding Complex, 0 to 5 Percent Slopes**, **Redding Gravelly Loam, 0 to 8 Percent Slopes**,

DRAFT

and **Redding Loam, 2 to 8 Percent Slopes**. General characteristics associated with these soils types are described below.

- **Fiddyment Fine Sandy Loam, 1 to 8 Percent Slopes**: This moderately deep, well-drained soil is located on hills between 50 and 350 feet above MSL. This soil formed in material weathered from consolidated sandstone or siltstone. Permeability is very slow and available water capacity is low. As a result, this soil type takes a very long time to saturate and the capacity of the soil to hold water available for use by most plant species is low. This soil unit is typically used for rangeland, irrigated hay and pasture, or for dryland crops, such as wheat. Typically, vegetation on this soil unit consists mainly of non-native grasses and herbaceous plant species. The hydric soils list for Sacramento County does not identify any hydric inclusions occurring within this soil type.
- **Hicksville Gravelly Loam, 0 to 2 Percent Slopes, Occasionally Flooded**: This very deep, moderately well-drained soil is on low stream terraces and the alluvial flats adjacent to drainageways on high terraces and hills between 75 to 230 feet above MSL. This soil unit formed in alluvium derived from mixed rock sources. Permeability is moderately slow in this soil type and available water capacity is low. As a result, this soil type takes a moderately long time to saturate and the capacity of the soil to hold water available for use by most plant species is low. This soil type is typically used as rangeland or for irrigated crops. Typically, vegetation on this soil unit consists mainly of non-native grasses and herbaceous plant species. The hydric soils list for Sacramento County identifies two hydric inclusions occurring within this soil type, Columbia and Hicksville.
- **Red Bluff-Redding Complex, 0 to 5 Percent Slopes**: This soil complex is located on high terraces, between 90 to 310 feet above MSL. The Red Bluff soil is very deep and well drained. This soil formed in alluvium derived from mixed rock sources. This soil complex consists of approximately 45 percent Red Bluff soil and 40 percent Redding soil. Permeability is moderately slow and available water capacity is high in the Red Bluff soil. As a result, this soil type takes a moderately long time to saturate and the capacity of the soil to hold water available for use by most plant species is high. The Redding soil is moderately deep and moderately well drained. Permeability is very slow in the Redding soil and available water capacity is low. As a result, this soil type takes a long time to saturate and the capacity of the soil to hold water available for use by most plant species is low. This soil complex is used mainly as rangeland or to cultivate dry land crops, such as wheat. Typically, vegetation on this soil complex consists of non-native annual grasses and herbaceous plant species. The hydric soils list for Sacramento County identifies one unnamed hydric inclusion found within depressions of this soil type.
- **Redding Gravelly Loam, 0 to 8 Percent Slopes**: This moderately deep, well-drained soil type is located on high terraces and terrace remnants between 40 to 390 above MSL. This soil formed in gravelly and cobbled alluvium derived from mixed rock sources. Permeability is slow in Redding gravelly loam and available water capacity is low. As a result, this soil type takes a long time to saturate and the capacity of the soil to hold water available for use by most plant species is low. This soil unit is mainly used as rangeland for livestock grazing. In some areas this unit is used for irrigated hay and

DRAFT

pasture or for dryland crops, such as wheat. Typically, vegetation on this soil unit consists of non-native annual grasses and herbaceous plant species. The hydric soils list for Sacramento County identifies one unnamed hydric inclusion found within depressions of this soil type.

- **Redding Loam, 2 to 8 Percent Slopes**: This moderately deep, moderately well-drained soil is on high terraces and terrace remnants between 40 to 170 feet above MSL. This soil formed in gravelly and cobbly alluvium derived from mixed rock sources. Permeability is very slow in the Redding soil and available water capacity is low. As a result, this soil type takes a long time to saturate and the capacity of the soil to hold water available for use by most plant species is low. This soil type is typically used for rangeland and less frequently for dryland crops, such as wheat, or irrigated crops, such as hay. Typically, vegetation on this soil unit consists of non-native annual grasses and herbaceous plant species. The hydric soils list for Sacramento County identifies one unnamed hydric inclusion found within depressions of this soil type.

4.3. Biological Communities

The primary terrestrial biological community that occurs within the Study Area is annual grassland. The following aquatic biological communities also occur within the Study Area: seasonal wetlands (depressional and riverine), vernal pools, intermittent drainage, seasonal wet swale, and a detention basin outfall. These communities provide habitat to a number of common species of wildlife and may provide suitable habitat for special-status species. Dominant vegetation observed within each biological community is discussed in detail below. A comprehensive list of plants observed within the Study Area is provided in **Appendix C**. The location and extent of each biological community are depicted in **Figure 3**.

4.3.1. Annual Grassland

The plant community covering the majority of the Study Area is annual grassland, which accounts for approximately 506.07 acres of the Study Area and is characterized primarily by an assemblage of non-native grasses and forbs. Much of the vegetation in these communities is common to the Central Valley. Dominant grass species consists of Italian rye grass (*Festuca perennis*), rattail sixweeks grass (*Festuca myuros*), soft brome (*Bromus hordeaceus*), and slender wild oat (*Avena fatua*). Common dominant herbaceous non-natives include jointed charlock (*Raphanus raphanistrum*) and field bindweed (*Convolvulus arvensis*).

Annual grassland habitat supports breeding, foraging, and shelter habitat for several species of wildlife. Species expected to occur in this habitat include savannah sparrow (*Passerculus sandwichensis*), western meadowlark (*Sturnella neglecta*), black-tailed jackrabbit (*Lepus californicus*), and gopher snake (*Pituophis melanoleucus*).

4.3.2. Developed/Disturbed

A total of 2.45 acres of the Study Area is classified as developed/disturbed. This acreage is composed of paved and unpaved roads and an existing structure, a utility shed located in the northern-central portion of the Study Area. These areas primarily contain ruderal (weedy)

DRAFT

vegetation but may provide nesting or roosting substrate for some wildlife species such as birds and bats.

4.3.3. Seasonal Wetland

Seasonal wetlands account for 4.58 acres of the Study Area. The seasonal wetlands are depressional or riverine. Depressional seasonal wetlands consist of topographic folds that inundate or flow for short periods of time following intense rains, but do not maintain seasonal aquatic or saturated soils conditions for durations long enough for colonization by perennial, obligate plant species. Riverine seasonal wetlands occur in linear topographic depressions and are characterized by flowing water.

Dominant vegetation occurring within the seasonal wetlands includes: coyote thistle (*Eryngium vaseyi*), rabbitsfoot grass (*Polypogon monspeliensis*), hyssop loosestrife (*Lythrum hyssopifolia*), annual hairgrass (*Deschampsia danthonioides*), and Fremont's goldfields (*Lasthenia fremontii*).

4.3.4. Vernal Pool

Vernal pools account for 15.04 acres of the Study Area. Vernal pools are shallow, seasonally inundated depressional wetlands that form in soils with a subsurface layer that restricts the downward flow of water. Dominant vegetation within these features includes: coyote thistle, Mediterranean barley, and stalked popcornflower (*Plagiobothrys stipitatus*).

4.3.5. Intermittent Drainage

Intermittent drainages account for 1.54 acres of the Study Area. Intermittent drainages are features that may not meet the three-parameter criteria for vegetation, hydrology, and soils, but do convey water and exhibit an ordinary high water mark. Water flows within intermittent drainages are fed primarily by precipitation and stormwater runoff. Dominant vegetation within the intermittent drainages consists of coyote thistle.

4.3.6. Seasonal Wet Swale

The seasonal wet swale accounts for 0.06 acres of the Study Area and is located at the center of the southern boundary of the Study Area. Seasonal wet swales are not considered jurisdictional waterbodies, but do convey and hold water during and after storm events and can exhibit assemblages of wetland vegetation. Dominant vegetation of seasonal wet swales typically consists of grass and other wetland vegetation.

4.3.7. Detention Basin Outfall

The detention basin outfall accounts for 2.92 acres of the Study Area and is located near the eastern end of the northern border. The detention basin outfall is a manmade feature designed to convey periodic excesses of water from a reservoir along the eastern end of the northern border of the Study Area to the intermittent drainage that bisects the Study Area. Conveyed water drains through tailings placed at the southern end of the basin outfall. Aquatic species that may be present in the adjacent intermittent drainage are obstructed from entering the detention basin outfall. The detention basin outfall is heavily managed and receives periodic

DRAFT

high-intensity disturbance – the surface of the detention basin outfall is bare earth and is routinely scraped to remove all vegetation. It is not considered to be sensitive habitat or provide habitat for any special-status species.

4.4. Special-Status Species

Special-status species are plant and animal species that have been afforded special recognition by federal, State, or local resource agencies or organizations. Listed and special-status species are of relatively limited distribution and may require specialized habitat conditions. Special-status species are defined as meeting one or more of the following criteria:

- Listed or proposed for listing under CESA or FESA;
- Protected under other regulations (e.g. Migratory Bird Treaty Act);
- Included on the CDFW Special Animals List;
- Identified as Rank 1-4 by CNPS; or
- Receive consideration during environmental review under CEQA.

Special-status species considered for this analysis are based on queries of the CNDDB, the USFWS, and CNPS ranked species (online versions) for the *Buffalo Creek, California* and eight surrounding quadrangles. **Appendix B** includes the common name and scientific name for each species, regulatory status (federal, State, local, CNPS), habitat descriptions, and potential for occurrence in the Study Area. The following set of criteria has been used to determine each species' potential for occurrence in the Study Area:

- **Present**: Species known to occur within the Study Area based on CNDDB records and/or observed within the Study Area during the biological surveys.
- **High**: Species known to occur on or in the vicinity of the Study Area (based on CNDDB records within five miles and/or based on professional expertise specific to the Study Area or species) and there is suitable habitat within the Study Area.
- **Low**: Species known to occur in the vicinity of the Study Area and there is marginal habitat within the Study Area **-OR-** Species is not known to occur in the vicinity of the Study Area, however, there is suitable habitat within the Study Area.
- **None**: Species is not known to occur on or in the vicinity of the Study Area and there is no suitable habitat within the Study Area -**OR-** Species was surveyed for during the appropriate season with negative results **-OR-** The Study Area occurs outside of the known elevation or geographic ranges.

Only those species that are known to be *present* or have a *high* or *low* potential for occurrence are discussed further in the following sections.

DRAFT

4.4.1. Listed and Special-Status Plants

According to the records search, 25 special-status plant species have the potential to occur on or in the vicinity of the Study Area. Based on field observations and literature review, four species were determined to have the potential for occurrence to occur within the Study Area. The following species are considered to have a *low* potential within the Study Area: Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*) dwarf downingia (*Downingia pusilla*), pincushion navarretia (*Navarretia myersii* ssp. *myersii*), and hoary navarretia (*Navarretia eriocephala*).

Plant Species with a Low Potential for Occurrence

Ahart's dwarf Rush

Ahart's dwarf Rush is ranked as a CNPS 1B species, which indicates that this species is rare, threatened, or endangered in California and elsewhere. It is a small annual herb that is found in vernal pool margins and grassland from 100 to 330 feet (30 to 100 meters) above MSL. The identification period is March through May. The vernal pools and grassland of the Study Area provide habitat for this species. Though this species has not been observed within the Study Area during previous site visits, there are two CNDDB records for this species within five miles of the Study Area (CDFW 2017). Therefore, this species has a *high* potential to occur within the Study Area.

Dwarf Downingia

Dwarf downingia is ranked as a CNPS 2B species, which indicates that this species is rare, threatened, or endangered in California but is more common elsewhere. It is an annual herb found in mesic areas within valley and foothill grassland and vernal pools from 3 to 1,460 feet (1 to 445 meters) above MSL. The identification period for this species is from March through May. There are no documented CNDDB records of this species occurring within five miles of the Study Area (CDFW 2017). This species has the potential to occur within the non-native annual grassland and vernal pools within the Study Area. There is a *low* potential for this species to occur within the non-native annual grassland and vernal pools within the Study Area.

Pincushion Navarretia

Pincushion navarretia is ranked as a CNPS 1B species. It is an annual herb found in vernal pools, which are often acidic from 66 to 1,083 feet (20 to 330 meters) above MSL. The identification period for this species is from April through May. There are no documented CNDDB records of this species occurring within five miles of the Study Area (CDFW 2017). This species has the potential to occur within the vernal pools within the Study Area. There is a *low* potential for this species to occur within the vernal pools within the Study Area.

Hoary Navarretia

Hoary navarretia is ranked as a CNPS 4 species. It is an annual herb found in mesic areas of mixed pine woodland, oak woodland, and grassland from 350 to 1,300 (105 to 400 meters) above MSL. The identification period for this species is from May through June. There are no documented CNDDB records of this species occurring within five miles of the Study Area (CDFW

DRAFT

2017). This species has the potential to occur within the grassland of the Study Area. There is a *low* potential for this species to occur within the Study Area.

4.4.2. Listed and Special-Status Wildlife

According to the records search, 50 special-status wildlife species have the potential to occur within the Study Area or in the vicinity. Based on field observations and literature review, 24 species were determined to have the potential to occur in the Study Area. Species that are known to be *present* or that are considered to have a *high* potential to occur within the Study Area include: vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardi*), ferruginous hawk (*Buteo regalis*), golden eagle (*Aquila chrysaetos*), white-tailed kite (*Elanus leucurus)*, California linderiella (*Linderiella occidentalis*), western burrowing owl (*Athene cunicularia*), and western spadefoot (*Spea hammondii*). Species that are considered to have a I potential to occur within the Study Area include: grasshopper sparrow (*Ammodramus savannarum*), loggerhead shrike (*Lanius ludovicianus*), merlin (*Falco columbarius*), mountain plover (*Charadrius montanus*), short-eared owl (*Asio flammeus*), American badger (*Taxidea taxus*), pallid bat (*Antrozous pallidus*), blennosperma vernal pool andrenid bee (*Andrena blennospermatis*), an unnamed andrenid bee (*Andrena subapasta*), Ricksecker's water scavenger beetle (*Hydrochara ricksecker*i), hairy water flea (*Dumontia oregonensis*), and mid-valley fairy shrimp (*Branchinecta mesovallensis*).

Wildlife Species with a High Potential for Occurrence

Western Burrowing Owl – State Species of Concern

Western burrowing owl is a small ground-dwelling owl that occurs in western North America from Canada to Mexico, and east to Texas, and Louisiana. Although in certain areas of its range western burrowing owls are migratory, these owls are predominantly non-migratory in California (Zeiner *et. al.* 1990). The breeding season for western burrowing owls occurs from February to August, peaking in April and May (Zeiner *et. al.* 1990). Western burrowing owls nest in burrows in the ground, often in old ground squirrel burrows. This owl is also known to use artificial burrows including pipes, culverts, and nest boxes. There are 12 CNDDB records for this species within five miles of the Study Area (CDFW 2017), though no western burrowing owls were observed during site visits. The Study Area contains suitable burrows to support this species. Therefore, this species has as a *high* potential for occurrence.

Golden Eagle—California Fully Protected

Golden eagles live in semi-open habitats where they have easy access to their primary prey of small to medium-sized mammals. Grasslands, deserts, savannahs, and early successional stages of forest and shrub habitats provide necessary foraging habitat. Nests are placed on cliffs or large trees and are maintained year and after year. Breeding occurs from January through August. Golden eagle home range territories are estimated to average 48 square miles in northern California (Zeiner *et al.* 1990). Breeding territories range from 8 to 21 square miles, or three to five miles surrounding the nest, but activity is often concentrated in a smaller core area. Although only one nest is used each year, a territory may contain multiple alternate nests. There is one CNDDB record of golden eagle documented within five miles of the Study Area

DRAFT

(CDFW 2017). No golden eagles were observed during previous site visits. Although the Study Area does not provide suitable nesting trees, the non-native annual grassland provides foraging habitat for this species. Therefore, this species has as a *high* potential for occurrence.

White-tailed Kite—California Fully Protected

White-tailed kite is listed as California Fully Protected. White-tailed kite is a year-long resident in coastal and valley lowlands in California. White-tailed kite breed from February to October, peaking from May to August (Zeiner *et. al.* 1990). This species nests near the top of dense oaks, willows, or other large trees. There are three CNDDB records of white-tailed kite documented within five miles of the Study Area (CDFW 2017). One white-tailed kite was observed foraging within the annual grassland during the June 12, 2017 rare plant survey. The annual grassland provides suitable foraging habitat for this species. Therefore, this species is considered to be *present* within the Study Area.

Nesting Birds and Raptors

The nests of raptors and most other birds are protected under the MBTA. Raptors are also protected by Section 3503.5 of the California Fish and Game Code, which makes it illegal to destroy any active raptor nest. Additionally, the USFWS and CDFW identified a number of avian species of conservation concern that do not have specific statutory protection. Avian species forage and nest in a variety of habitats throughout Sacramento County. As shown in **Appendix B**, the annual grassland on and surrounding the Study Area may provide nesting and foraging habitat for raptors and other protected birds, including: ferruginous hawk, grasshopper sparrow, merlin, mountain plover, and short-eared owl. Raptors and other protected migratory birds have a *high* potential to occur in the Study Area.

Vernal Pool Branchiopods with High Potential for Occurrence

The records search indicated that three species of vernal pool branchiopods occur within five miles of the Study Area: vernal pool fairy shrimp (*Branchinecta lynchi*), a federally threatened species, vernal pool tadpole shrimp (*Lepidurus packardi*), a federally endangered species, and California linderiella (*Linderiella occidentalis*), a California Special Animal. These species require continuous inundation typically ranging from six to eight weeks to complete their lifecycle (Nature Serve 2017). The vernal pools in the Study Area provide habitat for these species and there are 22 known CNDDB occurrences of vernal pool fairy shrimp, 43 CNDDB occurrences of vernal pool tadpole shrimp, and 25 CNDDB occurrences of California linderiella within five miles of the Study Area (CDFW 2017); therefore, these species a *high* potential for occurrence within the Study Area.

Western Spadefoot

Western spadefoot occurs throughout the Central Valley and on the coast from Point Conception, south to the Mexican border. This species occurs from sea level up to 4,500 feet (0 to 1400 meters) above MSL in the southern Sierra foothills. Western spadefoot individuals are most commonly found in grassland habitats with temporary pools of water, but they have also been found in open chaparral and valley-foothill pine-oak woodlands (Stebbins 2003). This species spends most of the year underground, where individuals seek refuge from desiccating

DRAFT

by constructing and residing in small burrows. This species often breeds in temporary pools and quiet streams between the months of January and May that remain inundate for at least six weeks. The vernal pools and depressional seasonal wetlands in the Study Area provide breeding habitat and there is one known occurrence within five miles of the Study Area (CDFW 2017). Therefore, this species has a *high* potential to occur within the Study Area.

Wildlife Species with a Low Potential for Occurrence

American Badger—California Species of Concern, Species of Local Concern

American badger is a California Species of Special Concern. American badgers are found in dry, open habitats including grassland and open woodland. Suitable burrowing habitat requires dry, sandy soil. Breeding occurs in summer and early fall, with young being born from March to April (Nature Serve 2017). There are no CNDDB records for this species within five miles of the Study Area (CDFW 2017). The annual grassland and burrows provides marginal habitat for this species given the lack of sandy soils within the Study Area. No American badgers were observed during the biological surveys. Therefore, this species has a *low* potential to occur within the Study Area.

Pallid Bat—California Species of Concern

California is home to several special-status bat species, including the pallid bat. Bat numbers are in decline throughout the U.S. due to loss of roosting habitat, habitat conversion, and habitat alteration. There are no CNDDB records for this species within five miles of the Study Area (CDFW 2017). No bat species were observed roosting during previous site visits. The sparse man-made structures, including utility towers and a utility shed in the center of the Study Area, provide marginal day roosting habitat and the annual grassland provides foraging habitat for this species. Therefore, this species has a *low* potential to roost within the Study Area and could utilize the Study Area for foraging.

Vernal Pool Branchiopods with Low Potential for Occurrence

The records search indicated that two species of vernal pool branchiopods other than those listed above have the potential to occur within the Study Area or vicinity: Mid-valley fairy shrimp (*Branchinecta mesovallensis*), a California Special Animal, and hairy water flea (*Dumontia oregonensis*), a California Special Animal (CDFW 2017). These species require continuous inundation typically ranging from six to eight weeks to complete their lifecycle (Nature Serve 2017). The vernal pools in the Study Area provide habitat for these species though there are no CNDDB occurrences within five miles of the Study Area for either species. Therefore, these species have a *low* potential for occurrence within the Study Area.

Blennosperma Vernal Pool Andrenid Bee and Unnamed Andrenid Bee—California Special Animals

The blennosperma vernal pool andrenid bee and another Andrenid Bee without a common name (*Andrena subapasta*) are small, ground-nesting bees found in the upland areas near vernal pools wherever blennosperma flowers and other grassland forbs are present. They are generally slender and dark-olive green with pale apical bands on the dorsum of the metasomal segments. The species were not observed during previous site visits. The uplands and vernal

DRAFT

pools may provide habitat for these species if they support blennosperma populations other appropriate grassland forbs; however, there are no known CNDDB occurrences within five miles of the Study Area (CDFW 2017). Therefore, these species have a *low* potential to occur within the Study Area.

Ricksecker's Water Scavenger Beetle—California Special Animal

Ricksecker's water scavenger beetle is an aquatic beetle that is a California Special Animal. This species inhabits a wide variety of aquatic habitats, including creeks and shallow ponds. The waterbodies within the Study Area provide potential habitat for this species, though this species has not been observed within the Study Area during previous site visits. There are no CNDDB occurrences for this species within five miles of the Study Area. Therefore, this species has a *low* potential to occur within the Study Area.

4.5. Sensitive Habitats

Sensitive habitats include those that are of special concern to resource agencies or those that are protected under CEQA, Section 1600 of the California Fish and Game Code, and/or Sections 401 and 404 of the Clean Water Act. Additionally, sensitive habitats are protected under the specific policies outlined in the proposed *South Sacramento Habitat Conservation Plan*. Sensitive habitats known to occur within the Study Area, which include aquatic features are vernal pools, seasonal wetlands, seasonal swale, and intermittent drainage.

4.5.1. Jurisdictional Waters of the U.S. and State

Jurisdictional waters of the U.S. and State located in the Study Area total approximately 22 acres. This acreage includes depressional seasonal wetlands (2.92 acres), vernal pools (15.04 acres), riverine seasonal wetlands (1.66 acres), intermittent drainages (1.54 acres), and seasonal wet swale (0.06 acres) (**Figure 3**). To date, potential wetland areas in the Study Area have been formally delineated and the Corps has verified these acreages. As discussed in **Section 2.3**, jurisdictional waters of the U.S. are subject to Section 404 of CWA and are regulated by the Corps.

DRAFT

5.0 CONCLUSIONS AND RECOMMENDATIONS

As discussed, the Study Area consists of land that supports primarily annual grassland, developed/disturbed, seasonal wetlands, vernal pools, intermittent drainage, and seasonal wet swale. **Table 1** summarizes the biological communities and expected impacts from the proposed project. Proposed project impacts are shown in **Figure 4**.

TABLE 1 — IMPACTS TO BIOLOGICAL COMMUNITIES

Habitat Types	Project Impacts	Previously Permitted Impacts	City (CIP) Impacts	SSHCP Buffer Acreage	Preserved Acreage	Total Acreage
Wetlands						
Depressional Seasonal Wetland	1.04	—	—	0.03	1.85	2.92
Vernal Pool	4.75	0.02	0.18	0.12	9.97	15.04
Riverine Seasonal Wetland	0.51	0.01	—	<0.01	1.15	1.66
Intermittent Drainage	—	<0.01	—	—	1.53	1.54
Seasonal Wet Swale	0.06	—	—	—	—	0.06
Detention Basin Outfall	—	—	—	—	0.30	0.30
Biological Communities						
Annual Grassland	305.15	—	0.51	13.16	187.16	506.07
Developed/Disturbed	2.43	—	—	—	0.03	2.45
Total	**313.93**	**0.03**	**0.69**	**13.31**	**201.98**	**530.05**

Note: Acreage may not add across rows or columns due to rounding.

Known or potential biological constraints in the Study Area include the following:

- Wetlands and other waters of the U.S. subject to Clean Water Act 404/401 and Section 1600 of Fish and Game Code regulations;
- Potential habitat for special-status plants Ahart's dwarf rush, dwarf downingia, pincushion navarretia, and hoary navarretia;
- Potential habitat for western burrowing owl;
- Assumed occupied habitat for federally-listed vernal pool branchiopods; and
- Potential habitat for western spadefoot, American badger, western pond turtle, pallid bat, and nesting birds.

DRAFT

5.1. Special-Status Plant Species

As discussed previously, portions of the Study Area contain suitable habitat for four special-status plant species that are known to occur in the vicinity and were not the targets of the June 12 and 13, 2017 botanical survey. The non-listed special-status species include Ahart's dwarf rush, dwarf downingia, pincushion navarretia, and hoary navarretia. Ground disturbance associated with the project would result in the temporary disturbance of 0.09 acres and permanent removal of 318.82 acres of annual grassland, which provides habitat for potentially occurring special-status plants. Temporary disturbance and permanent removal would impact special-status plants, if present, through removal of individuals and elimination of their habitat.

Since the June 12 and 13 botanical survey was not conducted during the bloom period when these species are identifiable, prior to construction a qualified botanist should conduct a botanical survey in May when all four potentially occurring special-status plant species will be within their evident and identifiable bloom period as specified by Avoidance and Mitigation Measure (AMM) PLANT-1 in the SSHCP. The results of these surveys should be documented in a letter report to City of Rancho Cordova. If no special-status plants are observed during the recommended botanical surveys, no additional measures are recommended.

If any special-status plant covered by the SSHCP are identified within 250 feet of areas of potential construction disturbance, they should be avoided to the extent feasible. If they cannot be avoided, the Implementing Entity will assure one unprotected occurrence of the species is protected within a SSHCP Preserve before any ground disturbance occurs at the project site in accordance with SSHCP AMM PLANT-2. If any federally-listed plants not covered by the SSHCP are identified within areas of potential construction disturbance, they should be avoided to the extent feasible. If the federally-listed plants cannot be avoided, Section 7 consultation would be required and a biological opinion from the USFWS would need to be obtained prior to transplantation and commencement of construction activities. Similarly, if any state-listed plants not covered by the SSHCP occur within the project footprint, they should be avoided to the extent feasible. If the state-listed plants cannot be avoided, an Incidental Take Permit would be required from the CDFW. Additional measures may be required through the consultation process with the CDFW and/or the USFWS, including compensatory mitigation or transplanting and monitoring.

5.2. Western Spadefoot

No western spadefoot toads were observed during previous site visits. However, the annual grassland provides suitable upland habitat and vernal pools provide suitable breeding habitat for this species. Vegetation clearing within the annual grassland and filling of the vernal pools could impact this species if present. In addition, construction equipment and vehicle movement could impact these species if present within the project footprint.

Western spadefoot is a covered species under the SSHCP and there are six AMMs that apply to this species. If covered activities must be implemented during the wet season (October 15 through May 15), exclusion fencing must be installed around the project footprint, temporary high-visibility construction fencing must be installed along the edge of work areas, and silt

DRAFT

fencing must be installed immediately behind the temporary high-visibility construction fencing to exclude western spadefoot per AMM WS-2. Additionally, the project site must be monitored daily by an approved biologist and construction personnel must be trained on the required avoidance measures per AMM WS-3. AMM WS-4 stipulates that all excavated steep-walled holes and trenches greater than six inches deep must be covered with plywood to avoid western spadefoot entrapment. AMM WS-5 specifies that BMP-2, if implemented, must be implemented using non-entangling erosion control material such as coconut coir matting and fiber rolls containing burlap. If a western spadefoot is encountered during construction activities, the approved biologist must notify the CDFW immediately and construction activities must be suspended within a 100-foot radius of the animal until the animal leaves the project site on its own volition as required by AMM WS-6.

5.3. American Badger

The annual grassland provides habitat for American badger. A qualified biologist should conduct a pre-construction survey for American badger within 14 days prior to the start of ground disturbance. If no American badgers are observed, then a letter report documenting the results of the survey should be provided to the project proponent for their records, and no additional measures are recommended. If construction does not commence within 14 days of the pre-construction survey, or halts for more than 14 days, a new survey is recommended.

If American badgers or their dens are found, additional avoidance measures are recommended including having a qualified biologist conduct a pre-construction survey within 24 hours prior to commencement of construction activities, performing a Worker Awareness Training to all construction workers, and being present on the Study Area during grading activities for the purpose of temporarily halting construction activities until the biologist determines that the badger has left the construction footprint on its own accord.

5.4. Vernal Pool Branchiopods

As discussed previously, vernal pools in the Study Area represent potential habitat for special-status invertebrate species including mid-valley fairy shrimp, vernal pool fairy shrimp, California linderiella, hairy water flea, and vernal pool tadpole shrimp. The USFWS typically considers vernal pool branchiopod habitat to be indirectly impacted by fill or development activities within 250 feet of the habitat. However, the 250-foot indirect impact area may be reduced based on Study Area-specific information such as topography or hydrologic data indicating that activities can encroach closer than 250 feet without impacting those habitats or their watersheds. Temporary disturbance and filling of vernal pools would impact vernal pool branchiopods, if present, through removal of individuals and elimination of their habitat.

Protocol-level surveys, consisting of a dry-season and wet-season survey, can be conducted to determine the presence or absence of these species. If the species are absent and USFWS accepts the survey findings, then no mitigation for listed vernal pool branchiopods is likely required. If the species are present, or if the project proponent decides to assume presence without conducting the surveys, then mitigation for listed vernal pool branchiopods would be required.

DRAFT

If mitigation for listed vernal pool branchiopods is required and the project has a federal nexus (e.g., is pursuant to a Corps permit, is federally funded, or occurs on federal land), impacts to listed vernal pool invertebrates can be addressed through Section 7 consultation with the USFWS. If the project does not have a federal nexus, the project proponent, through coordination with USFWS, can prepare a Habitat Conservation Plan under Section 10 of FESA. Typically, the USFWS requires compensatory mitigation for impacts to these species at a 3:1 ratio. Possible mitigation opportunities include creation of habitat within the Study Area or off-site preservation and creation of vernal pools or purchase of vernal pool credits at a qualified mitigation bank. If the SSHCP is approved, the project proponent can also pay the appropriate habitat mitigation fee for impacts to suitable habitat for listed fairy shrimp.

5.5. Swainson's Hawk

Although no Swainson's hawks were observed on the property, the Study Area is considered potential foraging habitat for this species since they are known to nest within five miles of the Study Area and because it is within foraging habitat modeled as modeled by the SSHCP. The nearest recorded nest location is approximately half a mile east of the northeast corner of the Study Area. Currently, the CDFW recommends that impacts to suitable Swainson's hawk foraging habitat within 10 miles of an active nest should be mitigated by securing a conservation easement or fee title on suitable Swainson's hawk foraging habitat in the region. Currently, this translates to the following: (1) for projects within a one-mile radius of an active nest site, the project proponent should preserve 1.0 acre of similar habitat for each acre lost, (2) for projects within a one to five-mile radius of an active nest site, the project proponent should preserve 0.75 acre of similar habitat for each acre lost, and (3) for projects within a five to ten-mile radius of an active nest site, the project proponent should preserve 0.5 acre of similar habitat for each acre lost.

In the case of a conservation easement, the applicant should prepare and implement a Swainson's hawk mitigation plan to the satisfaction of CDFW that includes the preservation of Swainson's hawk foraging habitat on the appropriate amount of foraging acreage. The lead agency under CEQA, in coordination with CDFW, would determine what mitigations would be appropriate for impacts to Swainson's hawk foraging and nesting habitat.

If the SSHCP is approved, the project proponent can also pay the appropriate habitat mitigation fee for impacts to Swainson's hawk foraging habitat or participate in the City of Rancho Cordova habitat mitigation program for Swainson's hawk. The project proponent may also choose to purchase approved offsite mitigation bank credits.

5.6. Burrowing Owl

Although burrowing owls were not observed during previous site visits, the Study Area contains annual grassland that is potentially suitable habitat for burrowing owl and portions of the Study Area are modeled as burrowing owl habitat by the SSHCP. Vegetation clearing activities within the annual grassland could impact potential nest Study Areas for this species. In addition, noise and vibration associated with construction activities in the vicinity of annual grassland could result in nest abandonment.

DRAFT

SSHCP AMM WBO-1 requires an initial burrowing owl survey of the Study area and surrounding 250 feet, where accessible. Transects must be no more than 50 feet apart and all burrows must be mapped.

If the project site does not avoid all suitable habitat mapped by the initial survey, then AMM WBO-2 requires a minimum of two pre-construction survey started no more than 15 days before the onset of construction activities to document the presence or absence of burrowing owls.

If burrowing owls or evidence of burrowing owls are observed within the Study Area or surrounding 250 feet, then AMM WBO-3 requires that 250-foot non-disturbance buffers be established around occupied burrows. If construction activities must take place within these buffer areas then a third-party project proponent must develop an avoidance, minimization, and monitoring plan that is approved by the CDFW. If construction activities take place during the non-breeding season (September 1 through January 31), then the third-party project proponent may request approval from the CDFW for a qualified biologist to excavate unoccupied burrows.

AMM WBO-4 requires the monitoring of the construction buffer zones by an approved biologist and the training of construction personnel by the biologist on avoidance procedures, buffer zones, and protocols in the event that a burrowing owl flies into an active construction zone.

Conditions for approved passive relocation of burrowing owls are specified by AMM WBO-5; conditions for and appropriate methods of rodent control are specified by AMM WBO-7.

5.7. Golden Eagle Foraging Habitat

A known golden eagle nest is located within five miles of the Study Area. Given the territory size of foraging golden eagles, the site could potentially be within the pair's foraging territory. There is not suitable nesting habitat for golden eagles onsite. The annual grassland onsite provides suitable foraging habitat for golden eagle. While the project would result in the removal of approximately 306 acres of suitable foraging habitat, the onsite preserve protects approximately 187 acres of suitable foraging habitat. In addition, mitigation would be required for impacts to Swainson's hawk foraging habitat which would also serve as potential foraging habitat for golden eagle. Therefore, additional measures beyond habitat mitigation has specified for Swainson's hawks and pre-construction nesting bird surveys as specified in **Section 5.8** are not recommended for this species.

5.8. Other Raptors and Migratory Birds

Several species of raptors and other migratory birds may forage and nest in the Study Area, including the special-status species white-tailed kite and loggerhead shrike. Active nests are protected by the California Fish and Game Code Section 3503.5 and the MBTA. Construction activities could result in disturbance of nest Study Areas through temporary increases in ambient noise levels and increased human activity. In addition, vegetation clearing operations, including pruning or removal of trees and shrubs, could impact nesting birds if these activities

DRAFT

occur during the nesting season (February 1 to August 31). All vegetation clearing including removal of trees and shrubs should be completed between September 1 to January 31, if feasible.

Because construction activity will occur in modeled habitat for covered raptor species, AMM RAPTOR-1 requires that a qualified biologist conduct a field investigation to determine if existing or potential nesting sites are present within the project footprint or surrounding 0.25-mile area where accessible.

If potential or existing nest sites are found during the initial surveys and if construction activities will take place during the breeding season (February 1 to August 31), then AMM RAPTOR-2 requires pre-construction surveys to be conducted within 30 days and three days of ground disturbing activity to determine if active nests are present within the project footprint or surrounding 0.25-mile area where accessible.

If active nests are found within the project footprint or surround 0.25-mile area, then AMM RAPTOR-3 requires that a 0.25-mile temporary nest disturbance buffer be created around the active nest until the young have fledged.

If project-related construction activities within the temporary nest disturbance buffer are determined to be necessary, then AMM RAPTOR-4 requires that an approved biologist be retained to monitor the nest daily throughout the nesting season. Work within the temporary nest disturbance buffer can occur with the written permission of the CDFW. If nesting raptors begin to exhibit agitated behavior then the approved biologist will have the authority to shut down construction activities and the biologist, third-party project proponent, and CDFW will meet to determine the best course of action to avoid nest abandonment or take of individuals. Additionally, the approved biologist will train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a covered raptor species flies into an active construction zone.

5.9. Pallid Bat

The existing grassland provides suitable foraging habitat and the existing utility shed provide potential roosting habitat for the pallid bat within the Study Area. Removal of man-made structures could impact bats should they be roosting in areas proposed for removal.

A qualified biologist should conduct a preconstruction survey within 14 days prior to clearing or grading operations and removal of any potential roosting site substrates. If no bats are observed, a letter report should be prepared to document the survey, and no additional measures are recommended. If construction does not commence within 14 days of the pre-construction survey, or halts for more than 14 days, an additional survey is required prior to starting work.

If special-status bat species are present and roosting on or within 100 feet of the Study Area, then the biologist should establish an appropriate buffer around the roost site. At minimum, no potential roosting structures should be removed until the biologist has determined that no bats

DRAFT

are roosting in the structure. Additional mitigation measures for bat species, such as installation of bat boxes or alternate roost structures, would be recommended only if special-status bat species are found to be roosting within the project area. In addition, a pre-construction worker awareness training should be conducted alerting workers to the presence of and protections for various bat species.

5.10. Sensitive Habitats

Table 2 summarizes the sensitive habitats and expected impacts from the proposed project. Proposed Project impacts to sensitive habitats are shown in **Figure 4**.

TABLE 2 — IMPACTS TO SENSITIVE HABITATS

Sensitive Habitats	Impacted Acreage	Preserved Acreage	Total Acreage†
Depressional Seasonal Wetland	1.04	1.85	2.89
Vernal Pool	4.75	9.97	14.72
Riverine Seasonal Wetland	0.51	1.15	1.66
Intermittent Drainage	0.01 (temporary)	1.53	1.54
Seasonal Wet Swale	0.06	—	0.06
Total	**6.58**	**14.5**	**20.87**

†Total acreages do not account for buffer areas or non-sensitive habitats.

5.10.1. Jurisdictional Waters

Proposed construction activities will impact approximately 6.58 acres of aquatic features located in the Study Area (**Figure 4**).

A Section 404 permit should be obtained from the Corps and a Section 401 Water Quality Certification should be obtained for the Regional Water Quality Control Board (RWQCB) prior to the start of construction that will impact any water of the U.S, and water of the state. Any waters of the U.S. or jurisdictional wetlands that would be lost or disturbed should be replaced or rehabilitated on a “no-net-loss” basis in accordance with the Corps mitigation guidelines. Habitat restoration, rehabilitation, and/or replacement should be at a location and by methods agreeable to the agencies. A Lake and Streambed Alteration Notification (SAA) should also be prepared and submitted to CDFW for impacts to features under CDFW jurisdiction.

Water quality concerns during construction would be addressed in a Section 401 water quality certification from the Regional Water Quality Control Board. A Storm Water Pollution Prevention Plan (SWPPP) would also be required during construction activities. SWPPPs are

DRAFT

required in issuance of a National Pollutant Discharge Elimination System (NPDES) construction discharge permit by the U.S. Environmental Protection Agency. Implementation of Best Management Practices (BMPs) during construction is standard in most SWPPPs and water quality certifications. Examples of BMPs include stockpiling of debris away from regulated wetlands and waterways; immediate removal of debris piles from the Study Area during the rainy season; use of silt fencing and construction fencing around regulated waterways; and use of drip pans under work vehicles and containment of fuel waste throughout the Study Area during construction.

A Lake and Streambed Alteration Agreement from CDFW may also be required for impacts to wetlands and other waters. A Streambed Notification should be submitted to CDFW for review to determine if a streambed agreement is necessary.

5.11. Summary of Avoidance and Minimization Measures

- Obtain a 404 permit, 401 Water Quality Certification, and SAA prior to the start of construction;
- Conduct pre-construction surveys for Ahart's dwarf rush, dwarf downingia, pincushion navarretia, and hoary navarretia in May;
- Conduct pre-construction burrowing owl protocol surveys between February and June.
- Assume presence of listed vernal pool branchiopods and mitigate according to SSHCP unless project proponent wants to conduct focused surveys;
- Conduct pre-construction surveys for western spadefoot, American badger, western pond turtle, pallid bat, and nesting birds prior to the start of construction as applicable and
- Conduct worker awareness training at the start of construction for potentially occurring special-status species.

DRAFT

6.0 REFERENCES

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, eds. 2012. *The Jepson Manual: Vascular Plants of California*, *2nd Edition*. University of California, Berkeley.

Barbour, Michael G., Todd Keeler-Wolf, and Allan A. Schoenherr, Editors. 2007. *Terrestrial Vegetation of California*, Third Edition. University of California Press, Berkeley and Los Angeles, California.

Bloom, P. and D. Van De Water. 1994. *Swainson's Hawk in Life on the Edge: A Guide to California's Endangered Natural Resources: Wildlife*. BioSystems Books, Santa Cruz, California.

Bradbury, M., Estep, J.A., and D. Anderson. In Preparation. *Migratory Patterns and Wintering Range of the Central Valley Swainson's Hawk*.

Calflora. 2017. *The Calflora Database: Information on California plants for Education, Research and Conservation*. Berkeley, California. Available online at: http://www.calflora.org. [Accessed 07/11/2017].

Californiaherps. 2017. *A Guide to the Amphibians and Reptiles of California*. Available online at: http://californiaherps.com. [Accessed 07/11/2017].

California Department of Fish and Wildlife (CDFW). 2009. *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities*. State of California, California Natural Resources Agency. Department of Fish and Wildlife. November 24, 2009.

CDFW. 2012. *Staff Report on Burrowing Owl Mitigation*. State of California Natural Resources Agency Department of Fish and Game. March 7, 2012.

CDFW. 2017. *California Natural Diversity Data Base* (CNDDB: *Citrus Heights, Folsom, Clarksville, Carmichael, Buffalo Creek, Folsom SE, Elk Grove, Sloughhouse, and Carbondale* U.S. Geological Survey (USGS) 7.5-minute series quadrangles (quadrangles)), Sacramento, CA. [Accessed 07/11/2017].

California Native Plant Society (CNPS). 2017. *Inventory of Rare and Endangered Plants* (online edition, v8-01a) (CNPS: *Clarksville, Rocklin, Pilot Hill, Coloma, Shingle Springs, Latrobe, Buffalo Creek, Folsom SE, and Folsom quadrangles*). [Accessed 07/11/2017].

California Wildlife Habitat Relationship System (CWHR). Various years. Various *Life History Accounts* and *Range Maps*. California Department of Fish and Wildlife, Sacramento, California. Available online at: http://www.dfg.ca.gov/biogeodata/cwhr/cawildlife.aspx. [Accessed 07/11/2017].

DRAFT

City of Rancho Cordova. 2006. *Rancho Cordova General Plan*. Rancho Cordova, California.

County of Sacramento. 2017. *Draft South Sacramento Habitat Conservation Plan*. Sacramento, California.

Foothill Associates. 2005. *Jaeger ±530-Acre Study Area: Wetland Delineation Report.* Rocklin, California.

Foothill Associates. 2012. *The Ranch at Sunridge Project: Section 7 Biological Assessment. Rocklin, California*.

Nature Serve. 2017. *Nature Serve Explorer*: *An Online Encyclopedia of Life* [Web Application]. Version 7.1. Last updated 2016. NatureServe, Arlington, Virginia. Available online at: http://www.natureserve.org/explorer. [Accessed 07/11/2017].

North Fork Associates. 2002. *Special Status Plant Report ±530-Acre Peery Arrillaga Sunrise Douglas Site*. Auburn, California.

Sawyer, John O. and Todd Keeler-Wolf. 1995. *A Manual of California Vegetation*. California Native Plant Society, Sacramento, California.

Stebbins, R. C. 2003. *Western Amphibians and Reptiles*, *3rd Edition*. Boston: Houghton Mifflin Co.

U.S. Army Corps of Engineers (Corps). 2014. *Preliminary Jurisdictional Determination Letter.* October 14, 2014.

U.S. Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS). 1974. *Soil Survey of Sacramento County, California*. USDA, NRCS, in cooperation with the Regents of the University of California (Agricultural Experiment Station).

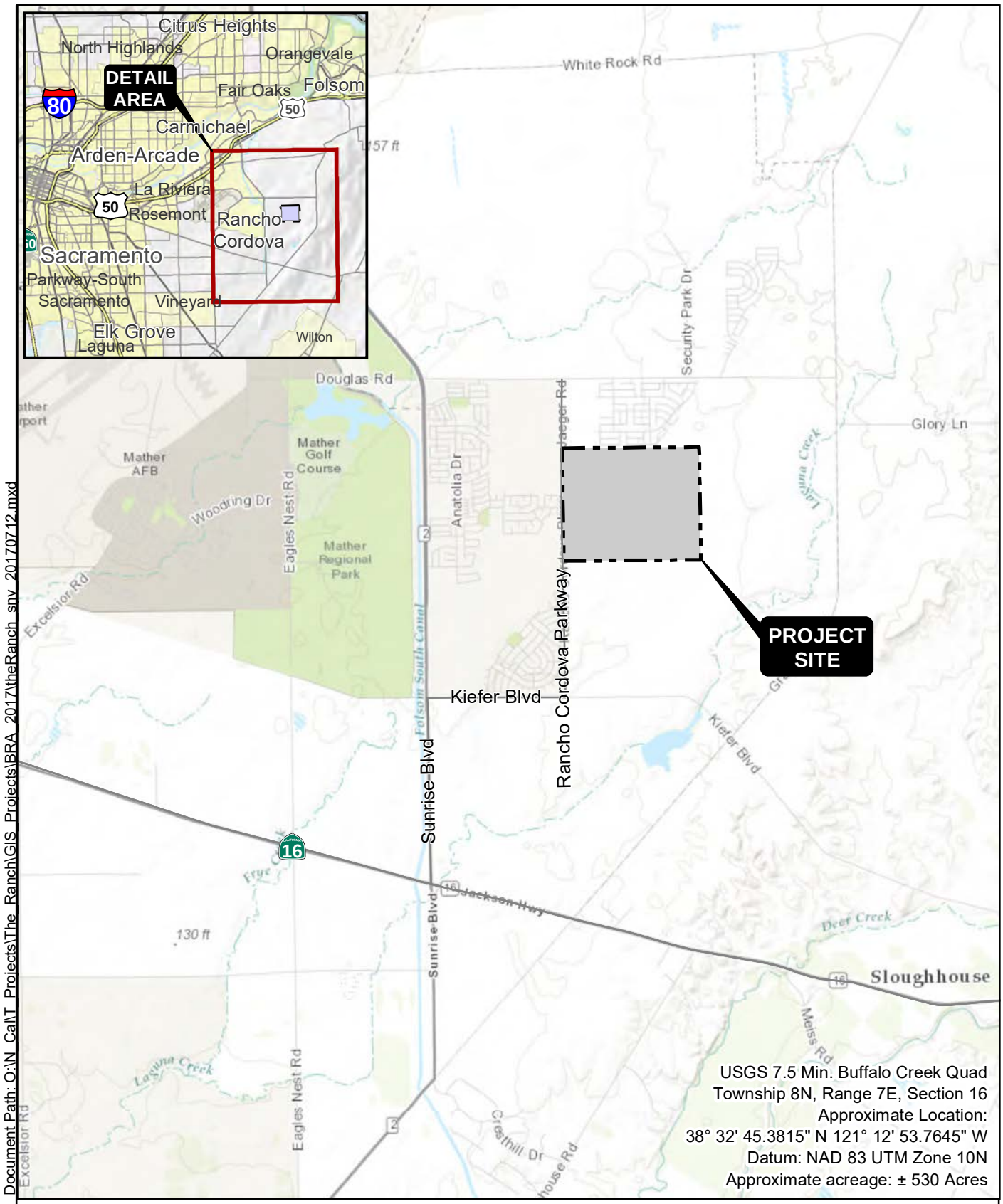
USDA, NRCS. 2017. *Web Soil Survey*. Available online at: http://websoilsurvey.sc.egov.usda.gov/App/HomePage.html. [Accessed 07/11/2017].

U.S. Fish and Wildlife Service (USFWS). 2017. *Information for Planning and Conservation* (IPaC) *Trust Resource Report: The Ranch, Sacramento County*. [Accessed 07/11/2017].

U.S. Geological Survey (USGS). 1967 (1980 edition). *Buffalo Creek, California*. 7.5 -minute series topographic quadrangle. U.S. Department of the Interior.

Zeiner, D.C., W.R. Laudenslayer Jr., K.E. Mayer, and M. White, eds. 1990. *California's Wildlife Volume II: Birds*, State of California: The Resource Agency, Department of Fish and Game, Sacramento, CA.

DRAFT



Document Path: O:\N_Cal\T_Projects\The_Ranch\GIS_Projects\BRA_2017\theRanch_snv_20170712.mxd

USGS 7.5 Min. Buffalo Creek Quad
Township 8N, Range 7E, Section 16
Approximate Location:
38° 32' 45.3815" N 121° 12' 53.7645" W
Datum: NAD 83 UTM Zone 10N
Approximate acreage: ± 530 Acres

SITE AND VICINITY

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE
© 2017

N

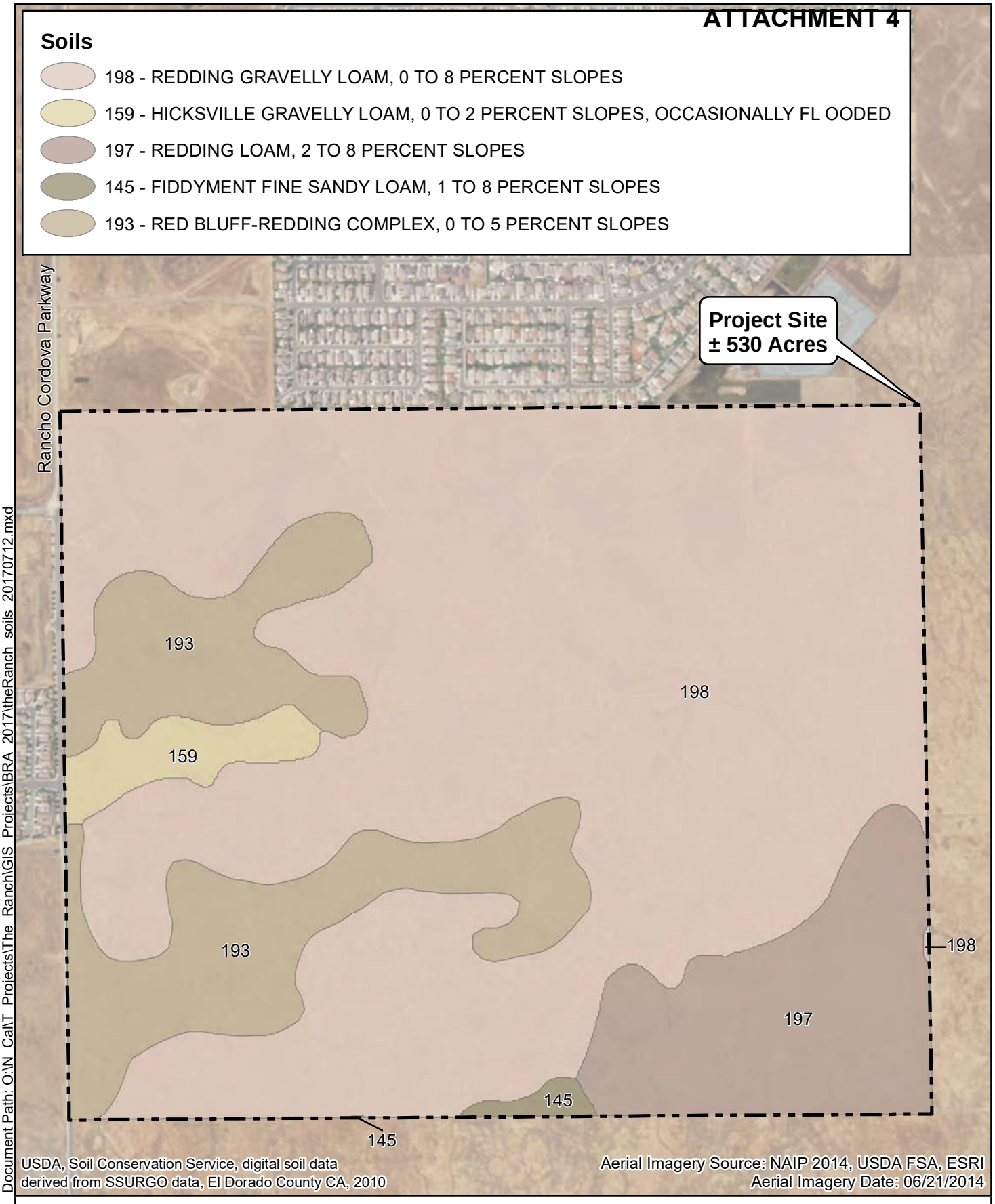
0 0.5 1
Miles
1 in = 1 miles

Drawn By: JFI
QA/QC: AMP
Date: 07/27/2017

FIGURE 1

THE RANCH

Document Name: theRanch_snv_20170712.mxd : 10/13/2017 1:09:28 PM



Document Path: O:\N Cal\T Projects\The Ranch\GIS Projects\BRA 2017\theRanch soils 20170712.mxd

SOILS

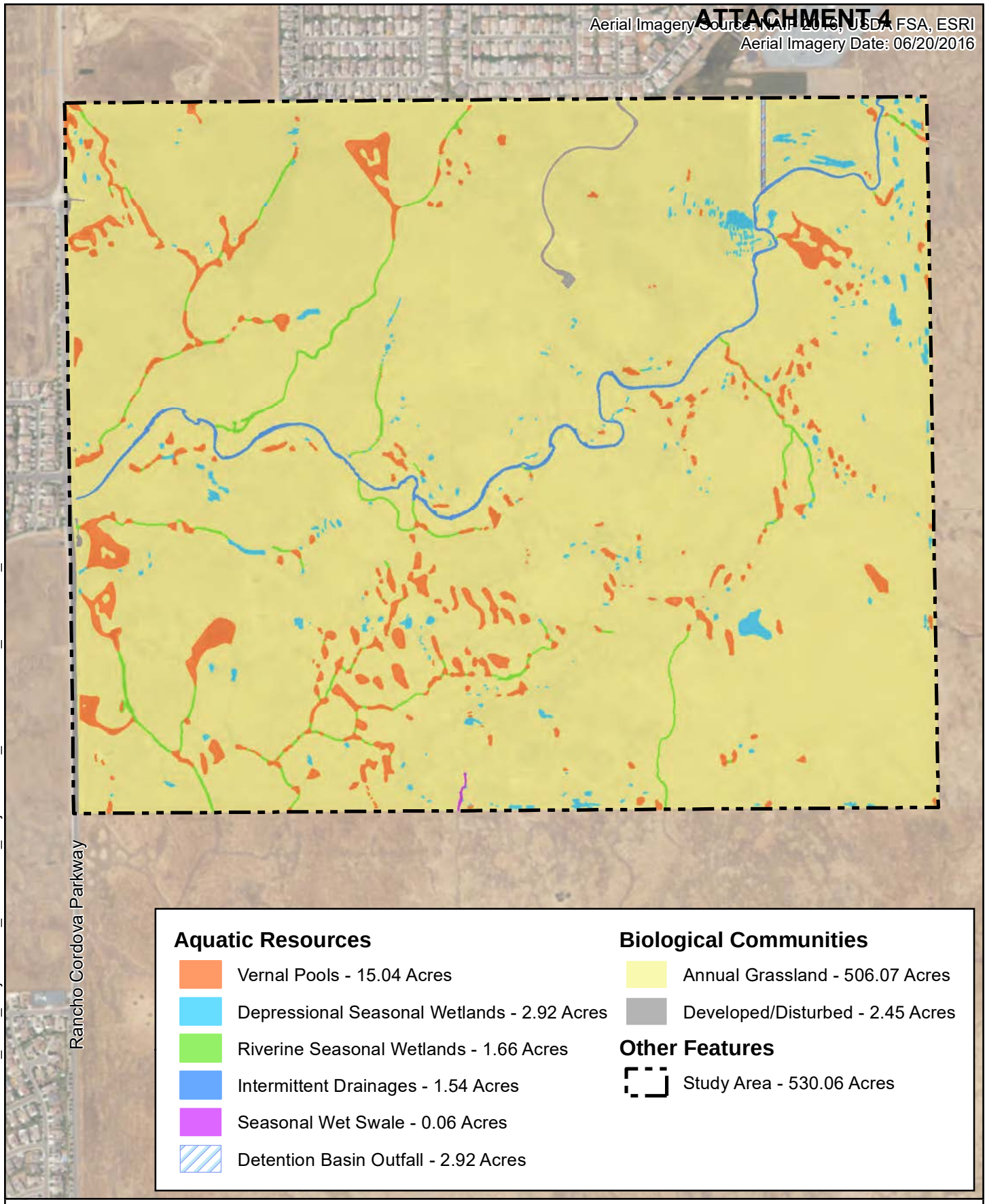
FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE
© 2017

N

0 400 800
Feet
1 inch = 800 feet

Drawn By: JFI
QA/QC: AMP
Date: 07/27/2017

FIGURE 2



Document Path: O:\N_Cal\T_Projects\The_Ranch\GIS_Projects\BRA_2017\theRanch_bioComms_20170713.mxd

BIOLOGICAL COMMUNITIES

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE
© 2017

N

0 400 800
Feet
1 inch = 800 feet

Drawn By: JFI
QA/QC: AMP
Date: 07/12/2017

FIGURE 3

Habitat Types	Preserved (Acres)	Buffer Area (Acres)	Project Impact (Acres)	City Capital Improvement Projects Impact (Acres)	Past Impact (Acres)	Temp. Impact (Acres)	Total (Acres)
Wetlands:							
Depressional Seasonal Wetland	1.85	0.03	1.04				2.92
Vernal Pool	9.97	0.12	4.75	0.18	0.02		15.04
Riverine Seasonal Wetland	1.15	<0.01	0.51		0.01		1.66
Intermittent Drainage	1.53				<0.01	0.01	1.54
Seasonal Wet Swale			0.06				0.06
Detention Basin Outfall	0.30						0.30
Subtotal:	14.80	0.15	6.36	0.18	0.03	0.01	21.53
Biological Communities:							
Annual Grassland	187.16	13.16	305.15	0.51		0.09	506.07
Developed/Disturbed	0.03	0.00	2.43				2.45
Subtotal:	187.18	13.16	307.57	0.51		0.09	508.52
Total	**201.98**	**13.31**	**313.93**	**0.69**	**0.03**	**0.10**	**530.05**

Other Features

- Development Footprint ± 315 Acres
- Preserve Buffer ± 13 Acres
- Preserve Boundary ± 202
- Project Boundary ± 530 Acres

Rancho Cordova Parkway

Aerial Imagery Source: NAIP 2016, USDA FSA, ESRI
Aerial Imagery Date: 06/20/2016

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE
Drawn By: JFI QAQC: MUB Date: 07/27/2017 © 2017

IMPACTS TO BIOLOGICAL COMMUNITIES

N

0 600 1,200
Feet
1 inch = 300 feet

FIGURE 4

Document Path: O:\N CalT Projects\The Ranch\GIS Projects\BRA 2017\theRanch bioCommImpacts 20170718.mxd

Appendix A — Applicable Sections of the City of Rancho Cordova General Plan

DRAFT

IX NATURAL RESOURCES ELEMENT

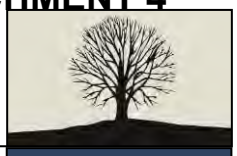


TABLE OF CONTENTS

Introduction **3**

Purpose **3**

Related Plans and Programs 4

Relationship to Other General Plan Elements 7

Issues and Considerations **7**

Natural Resources Setting 7

Plant and Animal Habitat 8

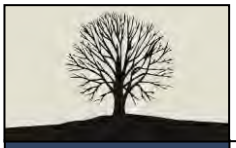
Wetlands and Creeks 8

Water Resources 8

Soils/Aggregate Resources 9

Issues this Element Attempts to Solve 10

Goals, Policies, and Actions **10**



IX NATURAL RESOURCES ELEMENT

THIS PAGE INTENTIONALLY LEFT BLANK

IX NATURAL RESOURCES ELEMENT

VISION STATEMENT

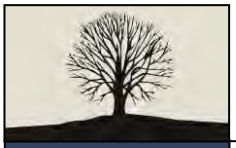
Rancho Cordova will achieve a balance of natural resources and urban form through the compatible preservation of natural resources within the man-made environment. Natural resources will be protected, conserved, and reflected in the built environment. Creek corridors, preserves, trees, and open space areas will enhance neighborhoods and public spaces. The community's water resources will be conserved and protected from contamination. All new development will be consistent with stormwater regulations and protect against erosion. The community will strive to conserve energy and to recycle construction materials, green waste, and consumer goods.

INTRODUCTION

Natural resources connect with urban life in many ways, providing an important relationship between humans and the natural environment; including biological resources, and water resources. Ensuring quality management and protection of the City's numerous natural resources will contribute to Rancho Cordova's environmental health as well as to quality of life for residents. The City will become a leader in natural resource conservation, managing natural resources to ensure long-term sustainability while evaluating new opportunities and techniques in conservation.

PURPOSE

The Natural Resources Element identifies the ways in which Rancho Cordova will protect, maintain, and enhance its natural resources for the betterment of current residents and future generations. In combination, the Natural Resources Element and the Open Space, Parks and Trails Element represent the conservation element of the General Plan. The Open Space, Parks and Trails Element contains details on the City's Open Space Plan. It also attempts to balance the present needs of resource users with the need for resource conservation for the common good. The goals, policies, and actions in this Element will foster the preservation of Rancho Cordova's many valuable natural resources, including wildlife, habitat, water resources, soils, and mineral resources.



RELATED PLANS AND PROGRAMS

The Natural Resources Element relates to several other federal, State and local plans and programs, including the following:

- **National Environmental Policy Act.** The National Environmental Policy Act (NEPA) is a federal environmental review process for projects that have a federal nexus (e.g., impact federal resources or lands, receive federal funding, or require federal approval or permits). NEPA requires federal agencies to integrate environmental values into their decision-making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions. This Element is consistent with the intent of NEPA. It contains a goal and supporting policies and actions related to protecting and preserving diverse wildlife and plant habitat.

- **Federal Endangered Species Act.** The Federal Endangered Species Act (FESA) is a federal law that protects species that are endangered or threatened with extinction. FESA prohibits the "take" of endangered or threatened wildlife species. "Take" is defined as harassing, harming (including significantly modifying or degrading habitat), pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (16 USC 1532, 50 CFR 17.3). Actions in this Element require the City to coordinate with federal agencies on wetland preserves and creek corridors.

- **Vernal Pool Recovery Plan.** The U.S. Fish & Wildlife Service's Vernal Pool Recovery Plan (Recovery Plan) covers 33 plant and animal species that occur exclusively or primarily within the California and southern Oregon vernal pool ecosystem. As drafted, the Recovery Plan identifies a five-part strategy to ameliorate or eliminate threats to affected species and to preserve intact vernal pools. This Element contains a goal, policies and actions related to preserving wetlands.

- **Section 404 of the Clean Water Act (404 Permits).** Section 404 of the Clean Water Act regulates the discharge of dredged or fill material into waters of the United States (waters of the U.S.), including wetlands and vernal pools. Activities in waters of the U.S. that are regulated under this program include fill for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports) and mining projects. This Element contains a goal, policies and actions related to preserving and mitigating for the loss of wetlands.

- **Section 401 of the Clean Water Act (Water Quality Certification).** Section 401 of the Clean Water Act requires a State Water Quality Certification for all federal permit or license applications for any activity that may result in a discharge to a water body to ensure compliance with state water quality standards. Most Certifications are issued in connection with section 404 permits for dredge and fill discharges. The Central Valley Regional Water Quality Board issues Section 401 water quality certifications for projects in Rancho Cordova. This Element contains a goal with supporting policies and actions related to creeks and a goal with supporting policies and actions related to water quality.

- **Section 402 of the Clean Water Act (NPDES Permits).** Section 402 of the Clean Water Act establishes permit programs to authorize discharge of storm water from municipal storm sewer systems. Rancho Cordova has a Municipal Stormwater Permit under the National Pollutant Discharge Elimination System (NPDES) Permit Program with Sacramento County, Elk Grove, Galt and the City of Sacramento. The Regional Water Quality Control Board, Central Valley Region, issues and administers the Sacramento NPDES municipal stormwater permit. This Element contains a policy and supporting actions related to urban runoff and discharging materials into creeks.

- **California Environmental Quality Act.** The California Environmental Quality Act (CEQA) is the State's environmental review process that requires public agencies to identify the significant environmental effects of a project and either avoid the significant environmental effects, where feasible, or mitigate the significant environmental effects, where feasible. This Element contains an action that specifically requires CEQA analysis of projects.

- **California Endangered Species Act.** The California Endangered Species Act is the State's listing of endangered and threatened species. It requires state agencies to consult with the California Department of Fish and Game (CDFG) when preparing CEQA documents to ensure that the state lead agency actions do not jeopardize the existence of listed species. This Element contains a goal and supporting policies and actions related to protecting and preserving diverse wildlife and plant habitat, and an action requiring coordination with CDFG on Swainson's hawk mitigation.

- **California Fish and Game Code.** The California Fish and Game Code contains laws and regulations relating to California's fish, wildlife, plants, and their habitats. The Code is administered by the California Department of Fish and Game. This Element contains a goal and supporting policies and actions related to protecting and

preserving diverse wildlife and plant habitat, and an action requiring coordination with CDFG on Swainson's hawk mitigation.

- **Surface Mining and Reclamation Act.** The Surface Mining and Reclamation Act (SMARA) addresses the need for a continuing supply of mineral resources and to prevent or minimize the negative impacts of surface mining to public health, property and the environment. SMARA's requirements apply to all surface mining operations in California that disturb more than one acre or remove more than 1,000 cubic yards of material including, but is not limited to, prospecting and exploratory activities, dredging and quarrying, streambed skimming, borrow pitting, and the stockpiling of mined materials. This Element contains a goal and supporting policies and actions related to environmentally sensitive extraction of minerals and reclamation.

- **California Integrated Waste Management Act.** The California Integrated Waste Management Act (CIWMA) requires each city and county to prepare, adopt, and submit to the California Integrated Waste Management Board a source reduction and recycling element (SRRE) that demonstrates how the jurisdiction will meet the IWMA's mandated diversion goals. This Element contains a goal and supporting policies and actions related to waste reduction, reuse, recycling and composting.

- **California Public Resources Code, Sections 41500-41510.** The Public Resources Code (PRC) requires each city and county to prepare, adopt and submit to the Waste Management Board a program for the safe collection, recycling, treatment, and disposal of hazardous wastes that are generated by households. This Element contains a goal and supporting policies and actions related to recycling and a goal and supporting policies and actions related to recycling of hazardous materials.

- **South Sacramento Habitat Conservation Plan (SSHCP).** The South Sacramento Habitat Conservation Plan (SSHCP) is a mitigation plan being prepared and managed by Sacramento County that seeks strategies that allow commercial, residential, and other development, while balancing the needs of sensitive plant and animal species. The SSHCP covers land within Sacramento County, including portions of the cities of Rancho Cordova, Elk Grove and Galt. The SSHCP is intended to consolidate environmental efforts to protect and enhance wetlands (primarily vernal pools) and upland habitats to provide ecologically viable conservation areas. The SSHCP will also minimize regulatory hurdles and streamline the development permit process for projects that are covered by and consistent with the plan. This Element contains a goal with supporting policies and actions related to protecting and preserving diverse wildlife and plant habitat, a policy about participation in an HCP, and a goal with supporting policies and actions related to preserving natural wetlands.

- **American River Parkway Plan.** The American River Parkway Plan was adopted by the City of Sacramento, Sacramento County and the State Legislature to manage the

Parkway's natural resources and promote recreation in a natural environment with minimal impacts. Sacramento County is currently updating the American River Parkway Plan. The ARPP Update is required because the context and usage of the three areas has changed considerably since the Plan was adopted. The City of Rancho Cordova is participating in the ARPP Update. This regional resource/amenity passes through the northern portion of Rancho Cordova. This Element contains a goal with supporting policies and actions related to protecting and preserving diverse wildlife and plant habitat.

RELATIONSHIP TO OTHER GENERAL PLAN ELEMENTS

The Natural Resources Element is closely related to the Open Space, Parks, and Trails Element and Air Quality Element of the General Plan. The Open Space, Parks and Trails Element contains goals, policies and actions that establish the open space plan for the City. Together, the two elements represent the conservation element of the General Plan. The Air Quality Element contains policies about maximizing air quality benefits through the use of landscaping and trees, which are directly related to policies in the Natural Resources Element. Where appropriate, cross-references are provided to alert the reader to information in the other elements.

ISSUES AND CONSIDERATIONS

NATURAL RESOURCES SETTING

The Planning Area contains many varied natural resources, from habitats to creeks to water supplies. Each resource has an important function within the City and the region. The City does not contain forests, harbors, or fisheries. Therefore, the Natural Resources Element does not contain goals, policies or actions related to such resources.

IX NATURAL RESOURCES ELEMENT

Plant and Animal Habitat

A variety of unique and valuable habitats are found within the Planning Area, including, but not limited to, oak and cottonwood woodlands, various grasslands, vernal pool areas, and open water and rivers. The habitats of the Planning Area contain numerous special status plant and animal species. A comprehensive list of the habitats and species in the Planning Area is provided in the Background Report that accompanies the General Plan.

Table NR-1 at the end of this Element includes a current list of special-status species that occur within the Rancho Cordova Planning Area.

Wetlands and Creeks

Wetlands and creeks in the Planning Area provide a variety of functions to the community. Creeks provide important ecosystem functions. The riparian habitat associated with creeks supports diverse and abundant plant and animal life and provides movement corridors for animals. Wetlands in the project area also have important ecological functions in that they support unique assemblages of specially adapted biota. In addition to their ecological functions, wetlands and creeks provide important water filtration and treatment, water supply, water storage, and recreational functions.

Water Resources

The Planning Area contains several surface water and groundwater resources. Major surface water resources include the American River, the Cosumnes River, Morrison Creek, Laguna Creek, Elder Creek, Buffalo Creek, Blodgett Reservoir, and the Folsom South Canal. Groundwater is found in aquifer zones underneath the Planning Area.

Former Aerojet and Boeing operations associated with rocket testing resulted in groundwater contamination in portions of the Planning Area. The groundwater contamination spread in a plume that extends south and west within Rancho Cordova, as well as north under the American River into Carmichael. The Environmental Protection Agency (EPA) designated the Aerojet property as a Superfund site. A site is only designated as a Superfund site if it has been contaminated by hazardous waste and if the Environmental Protection Agency (EPA) has identified the site as a candidate for cleanup because it poses a risk to human health and/or the environment. In 2000, the EPA proposed a plan to clean up the plume of groundwater contamination to the west of the Aerojet property and to ensure continued, safe water supplies for area residents. Aerojet has

installed wells, pipelines, and treatment systems in the first phase of their effort to remove the groundwater contamination. Cleaning of the contamination officially began in 1979.

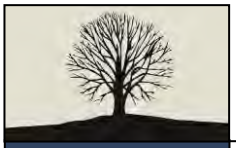
The current groundwater remediation is anticipated to be a long-term commitment, possibly operating more than 100 years. A significant volume of extracted and treated groundwater, possibly exceeding 30,000 acre-feet per year, is expected to be discharged to the American River. After flowing downstream to the Sacramento River and south to the Freeport pumping station, the water will be introduced into the County's municipal water system. The use of this water has been established through legal agreements between Aerojet, Sacramento County, and affected local water agencies.

Water is provided to the Rancho Cordova's Planning Area by three water purveyors including Sacramento County Water Agency (SCWA) Zone 40, Golden State Water Company (GSWC), and California-American Water Company (Cal-Am). The City's water supply is currently provided by a combination of ground and surface water resources. Future water supplies will be provided from a variety of sources, including: water from the Central Valley Project; appropriate water supplies; water transfer supplies; groundwater; recycled water; surface water from the American River; SMUD transfer water; and Aerojet replacement water.

A Water Supply Evaluation was prepared for the General Plan to identify water supply needs of the proposed General Plan under buildout of proposed land uses in the City's current boundaries as well as the Planning Area outside of the City under the State law providing for coordination between cities and counties and water planning activities of water purveyors and agencies. This work involved consultation with the current public and private water purveyors in the Planning Area, as well as requests for formal consultation regarding water supply availability by the City. Urban Water Management Plans (UWMP) for all water purveyors were obtained and used in the Water Supply Evaluation. The UWMPs identified the purveyor's existing and projected future water supplies and projected water demands through 2030 within each of their service areas.

Soils/Aggregate Resources

The soils in the Planning Area are largely expansive clay soils, which tend to present challenges for construction. The Planning Area also contains approximately 10,275 acres of mine tailings, which are comprised of high-quality aggregate resources and possibly mineral resources such as gold. There are several existing mining operations within the Planning Area, some of which may expand in the future. These operations will play an important role in supplying materials for the build-out of the community.



IX NATURAL RESOURCES ELEMENT

ISSUES THIS ELEMENT ATTEMPTS TO SOLVE

The goals, policies, and actions in this Element attempt to solve the following issues, raised during discussion of natural resource conservation:

- Protecting wildlife and wetlands areas.

- Encouraging the City and various public agencies to work together to establish natural resource protection areas both inside and outside of the City.

- Ensuring compatibility and mutual benefit, to the maximum extent feasible, between mitigation preserves and urban development.

- Reducing the impacts of new development on the use of water and mineral resources.

- Ensuring the availability of aggregate resources to support construction within the City.

- Maintaining continuous and uninterrupted connections between mitigation preserves providing habitat corridors that allow species migration and minimize habitat and species isolation.

- Reducing solid waste production and promoting recycling activities that seek to reduce the amount of solid waste to state-mandated levels.

GOALS, POLICIES, AND ACTIONS

The goals of this element are as follows and are listed subsequently with corresponding policies and actions. The term "feasible" as used in the Natural Resources Element of the City General Plan shall be defined as follows: "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors.

- **Goal NR1: Protect and preserve diverse wildlife and plant habitats, including habitat for special status species.**

- **Goal NR.2: Preserve the City's rich and diverse natural wetlands.**

- **Goal NR.3: Preserve and maintain creek corridors and wetland preserves with useable buffer zones throughout the new development areas as feasible.)**

- **Goal NR.4: Encourage the planting and preservation of high-quality trees throughout the City.**
- **Goal NR.5: Protect the quantity and quality of the City's water resources.**
- **Goal NR.6: Support the environmentally sensitive extraction of minerals and the subsequent reclamation of mined areas.**
- **Goal NR.7: Reduce per capita energy consumption.**
- **Goal NR.8: Promote waste reduction, reuse, recycling, and composting efforts.**

GOAL NR.1 - PROTECT AND PRESERVE DIVERSE WILDLIFE AND PLANT HABITATS, INCLUDING HABITAT FOR SPECIAL STATUS SPECIES.

Policy NR.1.1 - Protect rare, threatened, and endangered species and their habitats in accordance with State and federal law.

- **Action NR.1.1.1** - Incorporate habitat preserves and interconnected wildlife corridors in new development areas to allow for animal movement where feasible and as necessary for viability of protected species.
- **Action NR.1.1.2** – Review projects through the entitlement process and CEQA analysis to ensure that they comply with this policy if the site contains unique habitat, creeks, and/or wooded corridors.
- **Action NR.1.1.3** - As part of the consideration of development applications for individual Planning Areas containing habitats that support special-status plant and animal species that are planned to be preserved, the City may require that these preserved habitats have interconnections with other habitat areas where feasible and appropriate to promote the viability of the preserved habitat to support the special-status species identified. The determination of the design and size of the "interconnections" shall be made by the City, with the consideration of a recommendation from a qualified professional, after California Department of Fish and Game and U.S. Fish and Wildlife Service are provided with an opportunity to comment.

Cross reference: LU.3.4

- **Action NR.1.1.4** - Prior to the approval of any public or private development project in areas containing trees, the City shall require that a determinate survey be conducted during the nesting season (March 1 and August 31) to identify if active nesting by birds protected under the Migratory Bird Treaty Act (MBTA) is taking place. If all site disturbance is to occur outside this time, the actions described in this mitigation measure are not required. If nesting activity is observed, consultation with the City of Rancho Cordova Planning Department shall be conducted in order to determine the appropriate mitigation, if any, required to minimize impacts to nesting birds. No activity may occur within 100 feet of any nesting activity or as otherwise required following consultation with the California Department of Fish and Game.

Policy NR.1.2 - Conserve Swainson's hawk habitat consistent with State policies and Department of Fish and Game guidelines.

- **Action NR.1.2.1** – Establish a Swainson's Hawk Ordinance in coordination with the California Department of Fish and Game to establish the process of mitigating for the loss of Swainson's hawk foraging habitat based on habitat value lost to development. The ordinance will set forth a process where habitat lost to development will be mitigated through the permanent protection of equivalent or better existing habitat conditions (referred to hereafter as "mitigation lands"). The specific required mitigation ratios (habitat acreage lost versus mitigation lands) and any other provisions to mitigation process shall be established through technical studies as part of the development of the ordinance and will take into account value of habitat to be converted in relation to habitat value of the mitigation lands (e.g., relation to nesting sites), proximity of the mitigation lands to adjacent conditions affecting habitat (e.g., nearby land uses and already permanently protected lands), and other relevant factors. The ordinance will also establish standards ensuring that mitigation land will be adequately protected and managed in perpetuity (e.g., via conservation easement, deed restriction or other appropriate method), and setting forth the timing of the required provision of mitigation lands in relation with the timing of the loss of habitat in the City (as its boundaries may be changed through subsequent annexations), such that mitigation lands shall be provided no later than prior to ground disturbance.

Policy NR.1.3 – Promote educational programs that inform the public about natural resources.

- **Action NR.1.3.1** – Coordinate with non-profit groups, educational institutions, and other agencies to provide environmental education programs that inform the public about the City's natural resources, existing preserve sites, and cohabitation with common urban wildlife populations.

Policy NR.1.4 - Discourage the planting of invasive species.

- **Action NR.1.4.1** - Create an educational leaflet that identifies common invasive species and recommends the planting of non-invasive species.

- **Action NR.1.4.2** - The City shall adopt and maintain a Noxious Weed Ordinance. The Noxious Weed Ordinance shall include regulatory standards for construction activities that occur adjacent to natural areas to inhibit the establishment of noxious weeds through accidental seed import.

Policy NR.1.5 - Ensure the protection of wildlife through the establishment of programs to control feral pet populations.

Policy NR.1.6 – Participate in the development of a habitat conservation plan to address the unique biological resources in Rancho Cordova.

Policy NR.1.7 – Prior to project approval, the City shall require a biological resources evaluation for private and public development projects in areas identified to contain or possibly contain listed plant and/or wildlife species based upon the City's biological resource mapping provided in the General Plan EIR or other technical materials.

- **Action NR.1.7.1** - For those areas in which special status species are found or likely to occur, the City shall require feasible mitigation of impacts to those species that ensure that the project does not contribute to the decline of the affected species such that their decline would impact the viability of the species. Feasible mitigation shall be determined by the City after the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG) are provided an opportunity to comment, and may emphasize a multi-species approach. This may include development or participation in a habitat conservation plan.

Policy NR.1.8 - The City shall encourage creation of habitat preserves that are immediately adjacent to each other in order to provide interconnected open space areas for animal movement.

Policy NR.1.9 - The City shall require that impacts to riparian habitats be mitigated at a no net loss of existing function and value based on field survey and analysis of the riparian habitat to be impacted. No net loss may be accomplished by avoidance of the habitat, restoration of existing habitat, or creation of new habitat, or through some combination of the above.

Policy NR.1.10 - The placement of new roadways within habitat preserves shall be discouraged, but is not prohibited. This Policy shall not apply to roadways shown in the Circulation Element or needed to meet goals or policies of the Circulation Element.

Policy NR.1.11 - In such cases where a new roadway crosses a habitat preserve or separates two adjacent preserves, the roadway shall include design features, where feasible and appropriate, to allow for the movement of wildlife across or beneath the road without causing a hazard for vehicles, bicycles and pedestrians on the roadway.

GOAL NR.2 - PRESERVE THE CITY'S RICH AND DIVERSE NATURAL WETLANDS.

Policy NR.2.1 – Require mitigation that provides for "no net loss" of wetlands consistent with current State and federal policies.

- **Action NR.2.1.1** - During the environmental review process, evaluate feasible on-site alternatives that will reduce impacts to wetland resources and effectively preserve these resources.

Policy NR.2.2 - Ensure that direct and indirect effects to wetland habitats are mitigated to the extent feasible by environmentally sensitive project siting and design or other measures.

Policy NR.2.3 – Work with private and non-profit conservation organizations to ensure competitive pricing for mitigation bank credits by allowing government agencies, non-profit organizations, and private landowners to establish vernal pool preserves, designate mitigation areas, create and restore vernal pools, and sell credits to developers for off-site mitigation.

Policy NR.2.4 - Educate the public on the importance and benefit of wetlands areas.

- **Action NR.2.4.1** - Develop trails and associated educational facilities (e.g., information kiosks, signage) around wetland and vernal pool preserves where possible while maintaining the integrity of sensitive natural resources.

- **Action NR.2.4.2** – Consider constructing low impact trails interior to preserves, such as elevated board walkways, in coordination with the U.S. Fish and Wildlife Service and U.S. Army Corps of Engineers.

Policy NR.2.5 - The City shall require that drainage improvements that discharge into areas of wetlands to be preserved are, to the maximum extent feasible, designed to mimic the undeveloped surface water flow conditions of the area in terms of seasonality, volume, and flow velocity.

GOAL NR.3 - PRESERVE AND MAINTAIN CREEK CORRIDORS AND WETLAND PRESERVES WITH USEABLE BUFFER ZONES THROUGHOUT THE NEW DEVELOPMENT AREAS AS FEASIBLE.

Policy NR.3.1 - Coordinate with property owners and local interest groups, such as the Sacramento Urban Creeks Council, to restore, enhance, and preserve creeks in Rancho Cordova.

Policy NR.3.2 - In general, the City will encourage the preservation of existing location, topography, and meandering alignment of natural creeks. The modification, re-creation and realignment of creek corridors shall recreate the character of the natural creek corridor to the extent feasible, appropriate and consistent with other City policies. Channelization and the use of concrete within creek corridors shall be discouraged, but is not prohibited.

- **Action NR.3.2.1** – Develop guidelines for channel creation or modification that will ensure channel meander, naturalized side slope, and varied channel bottom elevation are considered in design.

- **Action NR.3.2.2** – Adopt and implement improvement standards for soft bottom channels.

Policy NR.3.3 – Encourage the creation of secondary flood control channels where the existing channel supports extensive riparian vegetation.

- **Action NR 3.3.1 –** Work with affected local, state, and federal agencies, including SACOG, the California Department of Water Resources, Delta Keepers, and the U.S. Army Corps of Engineers, to determine when natural creek corridors can and should accommodate storm flows or if separate storm water conveyance structures are necessary.

Cross reference: OSPT 2.3

Policy NR.3.4 – Encourage projects that contain wetland preserves or creeks, or are located adjacent to wetland preserves or creeks, to be designed for visibility and, as appropriate, access.

- **Action NR.3.4.1** - Establish performance standards for natural resource preserves that accomplish the following:

  – Provide sufficient width for a mowed firebreak (where necessary), adjacent passive recreation uses, and access for channel maintenance and flood control.

– Offer sufficient width in and/or adjacent to preserves to allow for existing and created wildlife habitat, species sensitive to human disturbance, vegetative filtration for water quality, corridor for wildlife habitat linkage, protection from runoff, and other impacts of urban uses adjacent to the corridor.

– Allow for sufficient width adjacent to natural resource preserves to allow for trails and greenbelts.

– Prohibit the placement of water quality treatment structures designed to meet pollutant discharge requirements within mitigation preserves.

- **Action NR.3.4.2** – Establish standards that allow public access in the floodplain and buffers along creek corridors and preserves. Mitigation measures shall be incorporated into environmental documents and conditions of approval that require open-view fencing adjacent to preserves.

- **Action NR.3.4.3 –** Establish standards and/or guidelines for development adjoining wetland preserves or creeks to maximize visibility by designing the land plan with public streets on at least one side of the corridor or preserve with vertical curbs, gutters, footpath(s), street lighting, and post and cable barriers to prevent unauthorized vehicular entry into creek corridors and preserves.

GOAL NR.4 – ENCOURAGE THE PLANTING AND PRESERVATION OF HIGH-QUALITY TREES THROUGHOUT THE CITY.

Policy NR.4.1 - Conserve native oak and landmark tree resources for their historic, economic, aesthetic, educational, and environmental value.

- **Action NR.4.1.1 -** Implement the City's Tree Preservation and Protection Ordinance (and update as necessary) to establish minimum requirements for preserving native trees and landmark trees in the City, including a definition of the size, species, and age requirements of landmark, oak, and other trees to be protected and/or replaced.

- **Action NR.4.1.2** - Where feasible, require underground utility lines that are in close proximity to oaks and other landmark trees to be designed and installed to minimize impacts to trees. Work with the utility provider(s) to coordinate transmission line location and other potential impacts associated with the undergrounding of the utilities.

- **Action NR.4.1.3** - Establish development guidelines that require all oak habitat to be avoided to the maximum extent feasible. When avoidance is not possible, require mitigation efforts that result in preservation of in-kind habitat in the Planning Area.

Policy NR.4.2 - Improve overall landscaping quality and sustainability in all areas visible to the public.

- **Action NR.4.2.1** - Create development guidelines to establish minimum planting standards and require appropriate tree species and planting densities within newly landscaped areas that are visible to or shared by the public. An adopted Tree List should be used as a guideline for all tree plantings within the City.

Cross reference: UD.2.6.2

- **Action NR.4.2.2** - Create development guidelines that address landscaping standards and that require appropriate tree species and densities in buffer areas. The guidelines should also ensure that medians will include native plantings and trees, and will be wide enough to support the long-term viability of the plantings.

Cross reference: UD.2.6.2

- **Action NR.4.2.3** - Provide leaflets and planting guides that promote the use of drought-tolerant native vegetation in home landscaping.

- **Action NR.4.2.4** – Discourage the use of invasive non-native species.

- **Action NR.4.2.5** – Establish a mistletoe abatement and remediation program.

- **Action NR.4.2.6** - Establish guidelines to require planting of trees to reduce "heat island" effects, in order to reduce the need for air conditioning and thus conserve energy.

Policy NR.4.3 - Promote trees as economic and environmental resources for the use, education, and enjoyment of current and future generations.

- **Action NR.4.3.1** - Achieve "Tree City USA" status. This will require the City to continue to implement the City's Tree Preservation and Protection Ordinance (and update as necessary), appoint a board, department or commission to advise the city on tree issues, spend two dollars per capita on community forestry activities, and hold an Arbor Day celebration.

Cross reference: AQ.2.4

- **Action NR.4.3.2** - Designate local funds to educate the public on tree planting and preservation.

- **Action NR.4.3.3** - Coordinate with SMUD to offer programs or other resources to provide property owners with information on proper tree selection, proper location to reduce heat transfer effects, planting and maintenance.

- **Action NR.4.3.4** – Actively participate in the Sacramento Tree Foundation Greenprint Program.

Policy NR.4.4 - Prior to the approval of any public or private development project in areas identified or assumed to contain trees, the City shall require that a determinate survey of trees species and size be performed. If any native oaks or other native trees six inches or more in diameter at breast height (dbh), multitrunk native oaks or native trees of 10 inches or greater dbh, or non-native trees of 18 inches or greater dbh that have been determined by a certified arborist to be in good health are found to occur, such trees shall be avoided if feasible. If such trees cannot be avoided, the project applicant shall do one of the following:

- All such trees shall be replaced at an inch-for-inch ratio. A replacement tree planting plan shall be prepared by a certified arborist or licensed landscape architect and shall be submitted to the City of Rancho Cordova for approval prior to removal of trees; or,

- The project applicant shall submit a mitigation plan that provides for complete mitigation of the removal of such trees in coordination with the City of Rancho Cordova. The mitigation plan shall be subject to the approval of the City.

- If the City of Ranch Cordova adopts a tree preservation ordinance at any time in the future, any future development activities shall be subject to that ordinance instead.

GOAL NR.5 - PROTECT THE QUANTITY AND QUALITY OF THE CITY'S WATER RESOURCES.

Policy NR.5.1 - Promote water conservation within existing and future urban uses.

- **Action NR.5.1.1** - Install water-conserving landscaping and irrigation on City-owned and operated facilities.

- **Action NR.5.1.2** - Require development project approvals to include a finding that all feasible and cost-effective options for conservation and water reuse are incorporated into project design.

- **Action NR.5.1.3** - Establish a program that requires per capita water consumption to be reduced by at least 20 percent by 2030 from 2006 baseline conditions consistent with State law. The program shall include the following measures:

- Restrict water usage through metering or establishing designated watering days for the City's residences and businesses.

- Promote water conservation efforts through education.

- Implement standards that require low-flow appliances and fixtures in all new development.

- Work with water providers and water conservation agencies to create an incentive program that encourages retrofitting existing development with low-flow water fixtures.

- Require new development and landscaped public areas to utilize state-of-the-art irrigation systems that reduce water consumption (e.g., gray-water systems).

- Encourage drought-tolerant and native vegetation.

- **Action NR.5.1.4** – Require water purveyors to include a provision for water supply monitoring and reporting in the franchise agreements.

Policy NR.5.2 - Encourage the use of treated wastewater to irrigate parks, golf courses, and landscaping.

- **Action NR.5.2.1** – Establish a Large-Scale Recycled Water Program and Citywide Recycled Water Distribution System Ordinance.

- **Action NR.5.2.2** – Coordinate with the City's water purveyors and the SRCSD to establish a connected "purple pipe" system throughout the City's new development areas that uses recycled water.

Policy NR.5.3 - Protect surface and ground water from major sources of pollution, including hazardous materials contamination and urban runoff.

- **Action NR.5.3.1** - Restrict hazardous materials storage in the 100-year and 200-year floodplain to prevent surface water contamination.

Cross reference: S.5.3

Cross reference: S.5.1

- **Action NR.5.3.2** - Educate the community on laws governing the proper handling of hazardous materials, especially those laws which pertain to discharging materials into creeks.

- **Action NR.5.3.3** - Install appropriate signage to deter the discharge of hazardous materials into storm drains.

- **Action NR.5.3.4** - Future land uses that are anticipated to utilize hazardous materials or waste shall be required to provide adequate containment facilities to ensure that surface water and groundwater resources are protected from accidental releases. This shall include double-containment, levees to contain spills, and monitoring wells for underground storage tanks, as required by local, state, and federal standards. Future land uses that include on-site storage of hazardous materials and waste comply with all applicable local, state and federal regulations, including those regulating the use, storage, handling and disposal of hazardous materials.

Policy NR.5.4 - Prevent contamination of the groundwater table and surface water, and remedy existing contamination to the extent practicable.

- **Action NR.5.4.1** – Provide information on pollution prevention, disposal of hazardous waste and chemicals, liability and clean-up on the City's website and in educational materials and brochures.

- **Action NR.5.4.2** - Require clean-up of contaminated ground and surface water by current and/or past owners or polluters.

- **Action NR.5.4.3** - Encourage pollutant cleansing companies to use the latest technologies available in order to expedite the cleansing process and do the least harm to the environment.

Policy NR.5.5 – Minimize erosion to stream channels resulting from new development in urban areas consistent with State law.

Cross reference: 5.2.3.1

- **Action NR.5.5.1** - Require development projects to contain urban runoff control strategies and requirements that are consistent with Master Drainage Plans and the City's urban runoff management program.

- **Action NR.5.5.2** - Require development within newly urbanizing areas to incorporate runoff control measures into their site design or to participate in an area-wide

runoff control management effort consistent with standards developed by the Public Works Department.

- **Action NR.5.5.3** - Encourage new development to incorporate features such as grassy swales, multi-use retention or detention basins, and integrated drainage systems to enhance water quality. Work with the Cordova Recreation and Park District to establish standards for integrating retention/detention basins into park sites and create examples of desirable and innovative natural drainage features.

- **Action NR.5.5.4** - Require the use of best management practices to protect receiving waters from the adverse effects of construction activities, sediment and urban runoff consistent with current state law.

Policy NR.5.6 - Incorporate Storm Water, Urban Runoff, and Wetland Mosquito Management Guidelines and Best Management Practices into the design of water retention structures, drainage ditches, swales, and the construction of mitigated wetlands in order to reduce the potential for mosquito-borne disease transmission.

Policy NR.5.7 - Continue to cooperate and participate with the County, other cities, and the Regional Water Quality Control Board regarding compliance with the joint National Pollutant Discharge Elimination System Permit (NPDES No. CAS082597) or any subsequent permit and support water quality improvement projects in order to maintain compliance with regional, state and federal water quality requirements.

Policy NR.5.8 - The City shall require groundwater impact evaluations be conducted for the Grant Line West, Westborough, Aerojet, Glenborough, Mather and Jackson Planning Areas to determine whether urbanization of these areas would adversely impact groundwater remediation activities associated with Mather and Aerojet prior to the approval of large-scale development. Should an adverse impact be determined, a mitigation program shall be developed in consultation with applicable local, state, and federal agencies to ensure remediation activities are not impacted. This may include the provision of land areas for groundwater remediation facilities, installation/extension of necessary infrastructure, or other appropriate measures.

GOAL NR.6 - SUPPORT THE ENVIRONMENTALLY SENSITIVE EXTRACTION OF MINERALS AND THE SUBSEQUENT RECLAMATION OF MINED AREAS.

Policy NR.6.1 – Ensure that the environmental effects of mining and reclamation on aquifers, streams, scenic views, and surrounding residential uses are prevented or minimized.

- **Action NR.6.1.1** – Regulate surface mining operations as required by California's Surface Mining and Reclamation Act of 1975 ("SMARA"), Public Resources Code Section 2207 (relating to annual reporting requirements), and State Mining and Geology Board regulations for surface mining and reclamation practice.

- **Action NR.6.1.2** – Coordinate mining operations and urban development to minimize conflicts between residents and mining, particularly where mining is required before urbanization.

- **Action NR.6.1.3** – Require inactive mined lands to be reclaimed to a usable condition that is readily adaptable to the future, anticipated land uses.

Policy NR.6.2 – Eliminate residual hazards to the public health and safety.

- **Action NR.6.2.1** – Establish and require minimum setbacks of future and reauthorized surface mining from adjoining residential land uses.

- **Action NR.6.2.2** - Prohibit the use of cyanide-leaching systems for gold extraction.

Policy NR.6.3 - While mining activities are anticipated to be phased out within the City, the City recognizes the right of these uses to continue and will require setbacks, buffers, screening, and other appropriate measures to allow for the continued operation of mining activities.

GOAL NR.7 - REDUCE PER CAPITA ENERGY CONSUMPTION.

Cross reference: H.6.1

Policy NR.7.1 - Increase energy conservation Citywide.

- **Action NR.7.1.1** - Develop educational programs to increase energy conservation at the household and business levels.

- **Action NR.7.1.2** - Develop a comprehensive program to conserve energy resources at City-operated facilities.

Policy NR.7.2 - Promote the development and use of advanced energy technology and building materials in Rancho Cordova.

Cross reference: LU.2.7

Policy NR.7.3 - Encourage the development of energy efficient buildings and subdivisions.

- **Action NR 7.3.1** - Offer incentives (e.g., reduced fees, expedited entitlement processing, density bonus) for plans/projects that exceed Title 24 energy efficiency requirements by ten percent.

Policy NR.7.4 - Promote energy rebate programs offered by local energy providers (e.g., SMUD, PG&E) as a way to bring energy efficiency into older neighborhoods and developments.

- **Action NR.7.4.1** - Consider the following items as ways to implement this policy:
  - Fund a program that offers incentives for adding energy efficient systems into existing developments;
  - Work with local utility providers to make the public aware of energy rebate programs; and
  - Work with community organizations, such as SMUD, to encourage the inclusion of energy efficient systems in remodels and retrofits of existing development.

GOAL NR.8 - PROMOTE WASTE REDUCTION, REUSE, RECYCLING, AND COMPOSTING EFFORTS.

Policy NR.8.1 - Support recycling efforts by developing a set of programs to educate residents on recycling and provide recycling services.

- **Action NR.8.1.1 -** Continue providing curbside recycling and green waste service to all single-family and duplex residences in Rancho Cordova.
- **Action NR.8.1.2** - Create and facilitate a series of educational workshops for the public and businesses on composting and recycling. Provide at least one program to increase recycling by occupants of multi-family housing.
- **Action NR.8.1.3** - Encourage all office, commercial, and multi-family complexes to provide recycling bins and collection service for paper, plastic, glass, and metal.
- **Action NR.8.1.4** - Provide recycling centers at City facilities (e.g., City Hall, libraries) that are available to the public free-of-charge.

- **Action NR.8.1.5** - Provide locations for household hazardous wastes to be recycled.

- **Action NR.8.1.6** – Remove impediments to successful recycling.

Policy NR.8.2 - Encourage all companies that do business in Rancho Cordova to recycle and reuse construction scraps, demolition materials, concrete, industrial waste, and green waste.

- **Action NR.8.2.1** - Encourage the school districts within the Planning Area to support recycling at school sites by placing easily accessible recycling bins, providing educational programs on recycling, and using recycled products.

Cross reference: N.1.5

Policy NR.8.3 - Promote the use of rubberized asphalt on all public roadways in an effort to recycle old tires and reduce noise impacts. Implementation of this policy will help to preserve aggregate resources.

Policy NR.8.4 - Encourage the use of recycled materials and source reduction (also known as waste prevention) by governmental agencies and local businesses.

- **Action NR.8.4.1** - Ensure that at least 50 percent of the City's office supply purchases are comprised of recycled or reusable products.

Policy NR.8.5 - Meet state mandates for solid waste reduction and recycling. Increase recycling efforts beyond those required by state law through supporting businesses that buy and sell re-used materials, such as materials exchange centers.

- **Action NR.8.5.1** - Implement the State's source reduction and recycling element (required by the California Integrated Waste Management Act) and the household hazardous waste element (required by PRC 41500-41510).

Policy NR.8.6 - Encourage the use of recycled-content products and construction materials.

Policy NR.8.7 - Maintain contact with Sacramento County and Allied Waste (or its successor) regarding the capacity projections of Kiefer Landfill and Lockwood Landfill to ensure an adequate capacity in their disposal facilities for the long-term disposal needs of Rancho Cordova.

TABLE NR-1
SPECIAL STATUS SPECIES OCCURRING WITHIN THE RANCHO CORDOVA PLANNING AREA

Scientific Name	Common Name	State Listing Status	Federal Listing Status	Other Status
Plant Species				
Downingia pusilla	Dwarf downingia	None	None	CNPS:2 R-E-D: 1-2-1
Gratiola heterosepala	Boggs Lake hedge-hyssop	Endangered	None	CNPS: 1B R-E-D: 1-2-2 USFWS: SC
Juncus leiospermus	Ahart's dwarf rush	None	None	CNPS: 1B R-E-D: 3-2-3 USFWS: SC
Legenere limosa	Legenere	None	None	CNPS: 1B R-E-D: 2-3-3 USFWS: SC
Narvarretia myersii ssp. myersi	Pincushion navarretia	None	None	CNPS: 1B R-E-D: 3-3-3 USFWS: SC
Orcuttia tenuis	Slender orcutt grass	Endangered	Threatened	CNPS: 1B R-E-D: 2-3-3
Orcuttia viscida	Sacramento orcutt grass	Endangered	Endangered	CNPS: 1B R-E-D: 3-3-3
Sagittaria sanfordii	Sanford's arrowhead	None	None	CNPS: 1B R-E-D: 2-2-3 USFWS: SC
Amphibian Species				
Spea (Scaphiopus) hammondii	Western spadefoot	None	None	CDFG: CSC USFWS: SC
Bird Species				
Accipiter cooperii	Cooper's hawk	None	None	CDFG: CSC
Agelaius tricolor	Tricolored blackbird	None	None	CDFG: CSC USFWS: SC
Ardea alba	Great egret	None	None	

Scientific Name	Common Name	State Listing Status	Federal Listing Status	Other Status
Ardea herodias	Great blue heron	None	None	
Asio flammeus (nesting)	Short-eared Owl	None	None	CDFG: CSC
Athene cunicularia (burrow sites)	Burrowing owl	None	None	CDFG: CSC USFWS: SC
Buteo swainsoni	Swainson's hawk	Threatened	None	
Circus cyaneus (nesting)	Northern harrier	None	None	CDFG: CSC
Elanus leucurus	White-tailed kite	None	None	CDFG: fully protected
Eremophila alpestris actia	California horned lark	None	None	CDFG: CSC
Icteria virens (nesting)	Yellow-breasted chat	None	None	CDFG: CSC
Lanius ludovicianus (nesting)	Loggerhead shrike	None	None	CDFG: CSC USFWS: SC
Plegadis chihi (rookery site)	White-faced ibis	None	None	CDFG: CSC USFWS: SC
Riparia riparia	Bank swallow	Threatened	None	
Invertebrate Species				
Branchinecta lynchi	Vernal pool fairy shrimp	None	Threatened	
Branchinecta mesovallensis	Midvalley fairy shrimp	None	None	USFWS: SC
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	None	Threatened	
Lepidurus packardi	Vernal pool tadpole shrimp	None	Endangered	
Linderiella occidentalis	California linderiella (fairy shrimp)	None	Endangered	USFWS: SC
Mammal Species				
Antrozous pallidus	Pallid bat	None	None	CDFG: CSC
Bassariscus astutus	Ringtail	None	None	CDFG: CFP

Scientific Name	Common Name	State Listing Status	Federal Listing Status	Other Status
Myotis ciliolabrum	Western small-footed myotis	None	None	USFWS: SC
Myotis evotis	Long-eared myotis	None	None	USFWS: SC
Myotis thysanodes	Fringed myotis	None	None	USFWS: SC
Myotis volans	Long-legged myotis	None	None	USFWS: SC
Myotis yumaensis	Yuma myotis	None	None	USFWS: SC
Taxidea taxus	American badger	None	None	CDFG: CSC
Reptile Species				
Emys (=Clemmys) marmorata marmorata	North-western pond turtle	None	None	CDFG: CSC USFWS: SC

Key to Ranks and Lists

CDFG: CSC	California Species of Special Concern
CDFG: CFP	California Fully Protected
USFWS: SC	USFWS Species of Concern

CNPS Lists:

List 1A: Plants Presumed Extinct in California
List 1B: Plants Rare, Threatened or Endangered in California or Elsewhere
List 2: Plants Rare, Threatened or Endangered in California, But More Common Elsewhere
List 3: Plants About Which We Need More Information – A Review List
List 4: Plants of Limited Distribution – A Watch List

Scientific Name	Common Name	State Listing Status	Federal Listing Status	Other Status
CNPS R-E-D Codes:				

R Rarity

1 Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time

2 Distributed in a limited number of occurrences, occasionally more if each occurrence is small

3 Distributed in one to several highly restricted occurrences, or present in such small numbers that it is seldom reported

E Endangerment

1 Not Endangered

2 Endangered in a portion of its range

3 Endangered throughout its range

D Distribution

1 More or less widespread outside California

2 Rare outside California

3 Endemic to California

Source: Ecosystem Sciences, March 2005 and California Department of Fish and Game (CDFG). 2006. California Natural Diversity Database. Wildlife & Habitat Data Analysis Branch, Department of Fish and Game (Version: 09 December 2005)

Appendix B — Regionally Occurring Listed and Special-Status Species

Regulatory Status Legend

FE = Federal endangered FT = Federal threatened FC = Federal candidate PT = Federal proposed threatened FPD = Federal proposed for delisting FD = Federal delisted FSC = Federal Species of Concern	CE = California state endangered CT = California state threatened CFP = California fully protected CSC = California Species of Special Concern CSA = California Special Animals List CR = California state rare	1A = plants presumed extinct in California 1B = plants rare, threatened, or endangered in California and elsewhere 2 = plants rare, threatened, or endangered in California, but common elsewhere 3 = plants about which we need more information 4 = plants of limited distribution

DRAFT

Table 1 — Legally Protected Species

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Plants				
Boggs Lake hedge-hyssop *Gratiola heterosepala*	--; CE; SLC; 1B	Annual herb found in shallow ponds and margins of vernal pools from 30 to 7800 feet above sea level.	April – June	**None**; Though, the vernal pools within the Study Area provide habitat for this species, this species was not observed during the June 12 and 13, 2017, rare plant survey. There are five CNDDB occurrences within five miles of the Study Area.
El Dorado bedstraw *Galium californicum* ssp. *sierrae*	FE; --; --; 1B	Annual herb found in open pine forests and oak woodlands on gabbroic soils from 300 to 2000 feet above sea level.	May – June	**None**; the Study Area does not provide habitat for this species.
Ione manzanita *Arctostaphylos myrtifolia*	FT; --; --; 1B	Perennial evergreen shrub found in chaparral and open woodlands on Ione soils from 200 to 2000 feet.	November – March	**None**; the Study Area does not provide habitat for this species.
Ione buckwheat *Eriogonum apricum* var. *apricum*	FE; CE; --; 1B	Perennial herb found in chaparral on Ione soil from 200 to 500 feet.	July – October	**None**; the Study Area does not provide habitat for this species.
Irish Hill buckwheat *Eriogonum apricum* var. *prostratum*	FE; CE; --; 1B	Perennial herb found in chaparral on Ione soil from 300 to 400 feet above sea level.	June – July	**None**; the Study Area does not provide habitat for this species.
Layne's ragwort *Packera layneae*	FT; --; --; 1B	Perennial herb found in chaparral and oak and pine woodlands on rocky serpentine or gabbroic soil from 600 to 3500 feet.	April – August	**None**; the Study Area does not provide habitat for this species.
Pine Hill ceanothus *Ceanothus roderickii*	FE; --; --; 1B	Perennial evergreen shrub found in chaparral and oak and pine woodlands on serpentine or gabbroic soils from 800 to 3500 feet.	April – June	**None**; the Study Area does not provide habitat for this species.
Pine Hill flannelbush *Fremontodendron decumbens*	FE; --; --; 1B	Perennial evergreen shrub found in chaparral and oak and pine woodlands on rocky gabbroic or serpintine soils from 1400 to 2500 feet above sea level.	April – July	**None**; the Study Area does not provide habitat for this species.
Sacramento Orcutt grass *Orcuttia viscida*	FE; CE; SLC; 1B	Annual herb found in vernal pools from 100 to 350 feet above sea level. It is known only in Sacramento County.	April – July	**None**; Though, the vernal pools within the Study Area provide habitat for this species, this species was not observed during the June 24, 2009, and June 12 and 13, 2017, rare plant surveys. There are eight CNDDB occurrences within five miles of the Study Area.
Slender Orcutt grass *Orcuttia tenuis*	FT; CE; SLC; 1B	Annual herb found in vernal pools and the margins of stock ponds from 100 to 5700 feet above sea level.	May – July	**None**; Though, the vernal pools within the Study Area provide habitat for this species, this species was not observed during the June 24, 2009, and June 12 and 13, 2017, rare plant surveys. There is one CNDDB occurrence within five miles of the Study Area.
Invertebrates				
Conservancy fairy shrimp *Branchinecta conservatio*	FE; --; --; --	Crustacean found in vernal pools from 10 to 500 feet above sea level. This species if found in Butte, Tehama, Glenn, Yolo, Solano, Stanislaus, Merced, and Ventura counties.	Wet season	**None**; the project site is outside of the known range for this species.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT; --; SLC; --	Insect found in riparian areas of chaparral and oak woodland up to 500 feet above sea level. Species leaves bore holes on the trunk of its host plant, blue elderberry shrub.	Year-round	**None**; the Study Area does not provide habitat for this species. There are five CNDDB occurrences within 5 miles of the Study Area.
Vernal pool fairy shrimp *Branchinecta lynchi*	FT; --; SLC; --	Crustacean found in vernal pools and similar ephemeral wetlands.	Wet season	**High**; the vernal pools and other wetlands within the Study Area provide habitat for this species. There are 22 CNDDB occurrences within five miles of the Study Area.
Vernal pool tadpole shrimp *Lepidurus packardi*	FE; --; SLC; --	Crustacean found in vernal pools and similar natural and artificial seasonally ponded waterbodies.	Wet season	**Present**; this species was observed by a Foothill biologist during a 2004 reconnaissance survey. There are 43 CNDDB occurrences within five miles of the Study Area.
Fish				
Central Valley steelhead *Oncorhynchus mykiss irideus*	FT; --; CSC; --	Salmonid found in the ocean, rivers, creeks, and lakes. They can survive for extended periods in waters up to 70° F.	Year-round	**None**; the Study Area does not provide habitat for this species.
Delta smelt *Hypomesus transpacificus*	FT; CE; --; --	Found in bays, rivers, and sloughs.	Year-round	**None**; the Study Area does not provide habitat for this species.

DRAFT

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Amphibians/ Reptiles				
California red-legged frog *Rana draytonii*	FT; CSC; --; --	Found in or near quiet, permanent waterbodies. Individuals may range up to a mile from water along riparian corridors.	Summer	**None**; the Study Area is not within the known extant range of this species.
California tiger salamander *Ambystoma californiense*	FT; CT; SLC; --	Found in grasslands and pine and oak woodlands. Breeds in ponded water. Spends summers in small mammal burrows. Found in the Central Valley from Kern to Yolo County.	November – February	**None**; though the grassland, burrows, and detention basin outfall of the Study Area provide habitat for this species, the Study Area is outside of the know range for this species and this species has not been observed during previous focused surveys.
Giant garter snake *Thamnophis gigas*	FT; CT; SLC; --	Agricultural wetlands, irrigation and drainage canals, low gradient streams, marshes, ponds, sloughs, small lakes, and associated uplands.	Spring – Fall	**None**; The Study Area does not provide habitat for this species.
Birds				
Western snowy plover *Charadrius alexandrinus nivosus*	FT; CSC; --; --	Nests on beaches.	Spring – Fall (Nesting)	**None**; the Study Area does not provide nesting habitat for this species.
Bank swallow *Riparia*	--; CT; --; --	Nests in large colonies, excavating nest burrows in steep riverbank cliffs, gravel pits, and highway cuts.	Spring – Fall (Nesting)	**None**; the Study Area does not provide habitat for this species.
White-tailed kite *Elanus leucurus*	--; CFP; SLC; --	Found in savanna, open woodland, marshes, and fields. Nests in isolated trees or woodlands areas with open foraging habitat.	Year-round	**Present**; this species was observed foraging within the Study Area during the June 12, 2017, rare plant survey.
California black rail *Laterallus jamaicensis*	BCC; CT; --; --	Found in coastal and freshwater marshes.	Year-round	**None**; the Study Area does not provide habitat for this species.
Bald eagle *Haliaeetus leucocephalus*	BCC; CE; --; --	Nests in mountainous habitats near permanent waterbodies. Winters near permanent waterbodies.	Year-round (Nesting and Wintering)	**None**; the Study Area does not provide habitat for this species.

Table 1 includes federal threatened or endangered species and eagles, and State threatened, endangered, or fully protected species.

DRAFT

Table 2 — Species Subject to CEQA Review

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Plants				
Ahart's dwarf rush *Juncus leiospermus* var. *ahartii*	--; --; SLC; 1B	Annual herb found in vernal pool margins and grasslands from 100 to 330 feet above sea level.	March – May	**Low**; the vernal pool margins within the Study Area provide habitat for this species, though this species was not observed during previous focused botanical surveys. There are two CNDDB occurrences within five miles of the Study Area.
Dwarf downingia *Downingia pusilla*	--; --; SLC; 2	Annual herb found in vernal pools and grasslands from sea level to 1500 feet above sea level.	March – May	**Low**; the vernal pools and grasslands within the Study Area provide habitat for this species.
El Dorado mule ears *Wyethia reticulata*	--; --; --; 1B	Perennial herb found in chaparral, pine and oak woodlands, and coniferous forests on clay or gabbroic soil from 1000 to 1500 feet above sea level.	April – August	**None**; the Study Area does not provide habitat for this species.
Legenere *Legenere limosa*	--; --; SLC; 1B	Annual herb found in vernal pools from 10 to 3000 feet above sea level.	April – June	**None;** Though the vernal pools within the Study Area provide habitat for this species, this species was not observed during the June 12 and 13, 2017, rare plant survey. There are 13 CNDDB occurrences within five miles of the Study Area.
Pincushion navarretia *Navarretia myersii* ssp. *myersii*	--; --; --; 1B	Annual herb found in vernal pools from 60 to 1000 feet above sea level.	April – May	**Low**; the vernal pools within the Study Area provide habitat for this species.
Parry's horkelia *Horkelia parryi*	--; --; --; 1B	Perennial herb found in chaparral and pine and oak woodlands from 250 to 3000 feet above sea level.	April – September	**None**; the Study Area does not provide habitat for this species.
Red Hills soaproot *Chlorogalum grandiflorum*	--; --; --; 1B	Perennial herb found in chaparral, pine and oak woodlands, and coniferous forests from 800 to 5500 feet above sea level.	May – June	**None**; the Study Area does not provide habitat for this species.
Sanford's arrowhead *Sagittaria sanfordii*	--; --; SLC; 1B	Perennial emergent herb found in marshes and swamps from 0 to 2,200 feet above sea level.	May - October	**None**; the Study Area does not provide habitat for this species.
Tuolumne button-celery *Eryngium pinnatisectum*	--; --; --; 1B	Annual to perennial herb found in pine and oak woodlands, coniferous forests, and vernal pools from 200 to 3000 feet above sea level.	May – August	**None;** Though the vernal pools and grassland within the Study Area provide habitat for this species, this species was not observed during the June 12 and 13, 2017, rare plant survey.
Invertebrates				
California linderiella *Linderiella occidentalis*	--; CSA; --; --	Vernal pools, swales, and ephemeral freshwater habitat.	Wet season	**High**; the vernal pools within the Study Area provide habitat for this species. There are 25 CNDDB occurrences within five miles of the Study Area.
Amphibians/ Reptiles				
Western spadefoot *Spea hammondii*	--; CSC; SLC; --	Toad found in grasslands, chaparral, and pine and oak woodlands up to 4,500 feet above sea level. Breeds in seasonal wetland habitat including vernal pools.	Wet season	**High**; the grassland of the Study Area provide habitat for this species and there is suitable breeding habitat onsite. There is one CNDDB occurrence within five miles of the Study Area.
Northwestern western pond turtle *Emys marmorata*	--; CSC; SLC; --	Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms, in woodlands, forests, and grassland.	November – February	**None**; the Study Area does not provide habitat for this species. There are two CNDDB occurrences within five miles of the Study Area.
Birds				
Allen's hummingbird *Selasphorus sasin*	BCC; --; --; --	Found in chaparral, thickets, oak woodland, mixed evergreen forests, coniferous forests, riparian woodland, and residential areas.	Spring, Fall	**None**; the Study Area does not provide habitat for this species.
Cooper's hawk *Accipiter cooperii*	--; CWL; SLC; --	Nests in riparian corridors. Forages in woodlands and riparian areas.	Spring – Fall (Nesting)	**None**; the Study Area does not provide habitat for this species.
Costa's hummingbird *Calypte costae*	BCC; --; --; --	Found in desert, semi-desert, brush foothills, and chaparral.	Spring – Fall (Nesting)	**None**; the Study Area does not provide habitat for this species.
Double-crested cormorant *Phalacrocorax auritus*	--; CSA; --; --	Found in lakes, ponds, rivers, lagoons, swamps, coastal bays, marine islands, and seacoasts.	Spring (Nesting Colony)	**None**; the Study Area does not provide habitat for this species.

DRAFT

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Ferruginous hawk *Buteo regalis*	BCC; CFP; SLC; --	Found in open habitats in grasslands, shrub steppes, sagebrush, deserts, saltbush-greasewood shrublands, and outer edges of pinyon-pine and other forests.	Winter	**High**; the grassland of the Study Area provides suitable wintering habitat for this species. There is one CNDDB occurrence within five miles of the Study Area.
Golden eagle *Aquila chrysaetos*	--; CFP; --; --	Found in open to semi-open prairie, sagebrush, arctic and alpine tundra, savannah or sparse woodland.	Year-round	**High**; the grassland of the Study Area provides suitable foraging habitat for this species. There is one CNDDB occurrence within five miles of the Study Area.
Grasshopper sparrow *Ammodramus savannarum*	BCC; CSC; --; --	Found in grasslands with sparse coverage of woody vegetation.	Spring – Fall (Nesting)	**Low**; the grassland of the Study Area provides habitat for this species.
Great blue heron *Ardea herodias*	--; CSA; --; --	Found in marshes, lakes, rivers, bays, lagoons, ocean beaches, mangroves, fields, and meadows. Nests high in trees.	Spring – Fall (Nesting colony)	**None**; the grassland of the Study Area provides foraging habitat for this species and this species was observed flying over the Study Area during the June 12, 2017, rare plant survey. However, there is no nesting habitat within the Study Area.
Great egret *Ardea alba*	--; CSA; --; --	Found in marshes, swampy woods, tidal estuaries, lagoons, mangroves, streams, lakes, fields, and meadows.	Spring – Fall (Nesting colony)	**None**; the grassland of the Study Area provides foraging habitat for this species. There is no nesting habitat within the Study Area.
Lewis' woodpecker *Melanerpes lewis*	BCC; --; --; --	Found in coniferous forests and oak woodlands.	Spring – Fall (Nesting)	**None**; the Study Area does not provide habitat for this species.
Loggerhead shrike *Lanius ludovicianus*	BCC; CSC; SLC; --	Found in open habitats with scattered shrubs, trees, posts, fences and utility lines for perches. Nests in densely foliaged tree or shrub.	Spring – Fall (Nesting)	**Low**; the Study Area provides foraging habitat for this species.
Long-billed curlew *Numenius americanus*	BCC; --; --; --	Found in mudflats and shallow marsh areas.	Spring (Nesting)	**None**; the Study Area does not provide habitat for this species.
Marbled godwit *Limosa fedoa*	BCC; --; --; --	Found in marshes and flooded plains.	Winter	**None**; the Study Area does not provide habitat for this species.
Merlin *Falco columbarius*	--; CWL; --; --	Found in marshes, deserts, seacoasts, lagoons, open pine and oak woodlands, and fields.	Winter	**Low**; the grassland of the Study Area provides habitat for this species.
Mountain plover *Charadrius montanus*	BCC; CSC; --; --	Winters in California in agricultural fields and grasslands.	Winter	**Low**; the grassland of the Study Area provides suitable wintering habitat for this species.
Nuttall's woodpecker *Picoides nuttallii*	BCC; --; --; --	Found in low-elevation riparian deciduous and oak habitats.	Year-round	**None**; the Study Area does not provide habitat for this species.
Oak titmouse *Baeolophus inornatus*	BCC; --; --; --	Found in oak savannah and oak woodlands.	Spring – Fall (Nesting)	**None**; the Study Area does not provide habitat for this species.
Peregrine falcon *Falco peregrinus*	BCC; CFP; --; --	Found in open areas near cliffs including tundra, moorlands, steppe, seacoasts, mountains, forests, and urban areas.	Spring – Fall (Nesting)	**None**; the Study Area does not provide nesting habitat for this species.
Rufous hummingbird *Selasphorus rufus*	BCC; --; --; --	Nests within berry tangles, shrubs, and conifers.	Spring (Nesting)	**None**; the Study Area does not provide nesting habitat for this species.
Short-eared owl *Asio flammeus*	--; CSC; --; --	Found in marshes, bogs, dunes, prairies, grassy plains, old fields, tundra, moorland, river valleys, meadows, savanna, open woodland, and heathland.	Spring – Fall (Nesting)	**Low**; the grassland of the Study Area provides habitat for this species.
Swainson's hawk *Buteo swainsoni*	BCC; CT; SLC; --	Found in savanna, open pine-oak woodland and cultivated lands with scattered trees.	Spring – Fall (Nesting)	**None**; the project site does not provide nesting habitat for this species. There are 11 CNDDB occurrences within five miles of the Study Area.
Tricolored blackbird *Agelaius tricolor*	BCC; CCE; SLC; --	Nests in dense blackberry, cattail, tules, willow, or wild rose within emergent wetlands.	Spring – Fall (Nesting colony)	**None**; the Study Area does not provide nesting habitat for this species.
Western burrowing owl *Athene cunicularia*	BCC; CSC; SLC; --	Nests in burrows in the ground, often in old ground squirrel burrows or badger, within open dry grassland and desert habitat.	Year-round	**High**; the grassland and burrows of the Study Area provide habitat for this species. There are 12 CNDDB occurrences within five miles of the Study Area.
Western grebe *Aechmophorus occidentalis*	BCC; --; --; --	Found in marshes, lakes, and bays.	Year-round	**None**; the Study Area does not provide habitat for this species.
Williamson's sapsucker *Sphyrapicus thyroideus*	BCC; --; --; --	Found in coniferous forests year-round and oak and pine woodland in winter.	Year-round	**None**; the Study Area does not provide habitat for this species.

DRAFT

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Mammals				
American badger *Taxidea taxus*	--; CSC; SLC; --	Found in open areas and brushlands.	Year-round	**Low**; the grassland of the Study Area provides habitat for this species.
Pallid bat *Antrozous pallidus*	--; CSC; --; --	Found in mountainous areas, intermontane basins, lowland desert scrub, arid deserts, grasslands, and coniferous forests	Spring - Fall	**Low**; the grassland of the Study Area provides habitat for this species.
Silver-haired bat *Lasionycteris noctivagans*	--; CSA; --; --	Found in coniferous forests near lakes, ponds, and streams.	Spring - Fall	**None**; the Study Area does not provide habitat for this species.

Table 2 includes state and federal species of concern and Rank 1 and 2 CNPS species.

Table 3 — Other Species of Interest

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Plants				
Bisbee peak rush-rose *Crocanthemum suffrutescens*	--; --; --; 3	Perennial evergreen shrub found in chaparral from 250 to 2,200 feet above sea level.	Apr – August	**None**; the Study Area does not provide habitat for this species.
Brandegee's clarkia *Clarkia biloba* ssp. *brandegeeae*	--; --; --; 4	Annual herb found in chaparral, pine and oak woodlands, and coniferous forests from 250 to 3,000 feet above sea level.	May – July	**None**; the Study Area does not provide habitat for this species.
Brewer's calandrina *Calandrinia breweri*	--; --; --; 4	Annual herb found in disturbed sites and burns in chaparral and coastal scrub on sandy or loamy soil from 30 to 4,000 feet above sea level.	March - June	**None**; the Study Area does not provide habitat for this species.
Hoary navarretia *Navarretia eriocephala*	--; --; --; 4	Annual herb found in pine and oak woodlands and grasslands from 30 to 1,300 feet above sea level.	May – June	**Low**; the grassland of the Study Area provides habitat for this species.
Jepson's wooly sunflower *Eriophyllum jepsonii*	--; --; --; 4	Perennial herb found in chaparral, pine and oak woodlands, and coastal scrub from 650 to 3400 feet above sea level.	Apr – June	**None**; the Study Area does not provide habitat for this species.
Stinkbells *Fritillaria agrestis*	--; --; --; 4	Perennial bulbiferous herb found in chaparral, pine and oak woodlands, pinyon and juniper woodlands, and grasslands from 30 to 5100 feet above sea level.	Mar – June	**None**; the Study Area does not provide habitat for this species.
Invertebrates				
Blennosperma vernal pool andrenid bee *Andrena blennospermatis*	--; CSA; --; --	Found in upland areas near vernal pools.	Spring - Fall	**Low**; the upland grassland near vernal pools of the Study Area provides habitat for this species.
Andrenid bee *Andrena subapasta*	--; CSA; --; --	Found near grassland forbs.	Spring – Fall	**Low**; the grassland of the Study Area provides habitat for this species.
Ricksecker's water scavenger beetle *Hydrochara ricksecker*i	--; CSA; SLC; --	Found in shallow water.	Summer – Fall	**Low**; the vernal pools and other wetlands within the Study Area provide habitat for this species.
Hairy water flea *Dumontia oregonensis*	--; CSA; --; --	Found in shallow water.	Summer – Fall	**Low**; the vernal pools and other wetlands within the Study Area provide habitat for this species.
Mid-valley fairy shrimp *Branchinecta mesovallensis*	--; CSA; SLC; --	Crustacean found in vernal pools, vernal swales, and other ephemeral water bodies.	Wet season	**Low**; the vernal pools and other wetlands within the Study Area provide habitat for this species.

Table 3 includes Rank 3 and 4 CNPS species and non-listed invertebrates, which may not be subject to CEQA review.

DRAFT

Appendix C — Plants and Wildlife Observed in the Study Area

DRAFT

Family	Scientific Name	Common Name	Native or Invasive
Apiaceae	*Eryngium vaseyi*	Coyote-thistle	N
Asteraceae	*Psilocarphus brevissimus*	Woolly-marbles, woollyheads	N
Asteraceae	*Centromadia fitchii*	Spikeweed	N
Asteraceae	*Lasthenia fremontii*	Fremont's goldfields	N
Asteraceae	*Leontodon saxatilis*	Hairy hawkbit	I
Asteraceae	*Cotula coronopifolia*	Brass-buttons	I
Boraginaceae	*Plagiobothrys stipitatus*	Great Valley popcornflower	N
Brassicaceae	*Raphanus* sp.	Radish	I
Convolvulaceae	*Convolvulus arvensis*	Bindweed, orchard morning-glory	I
Crassulaceae	*Crassula aquatica*	Crassula	N
Euphorbiaceae	*Croton* sp.	Croton	N
Geraniaceae	*Erodium botrys*	Storksbill, filaree	I
Juncaceae	*Juncus bufonius*	Toad rush	N
Lamiaceae	*Trichostema lanceolatum*	Vinegar weed	N
Lamiaceae	*Pogogyne zizyphoroides*	Sacramento beardstyle	N
Lythraceae	*Lythrum hyssopifolia*	Loosestrife	I
Onagraceae	*Epilobium* sp.	Willowherb	--
Orobanchaceae	*Parentucellia viscosa*	Parentucellia	I
Plantaginaceae	*Gratiola ebracteata*	Bractless hedge-hyssop	N
Poaceae	*Polypogon monspeliensis*	Annual beard grass, rabbitfoot grass	I
Poaceae	*Hordeum marinum* ssp. *gussoneanum*	Mediterranean barley	I
Poaceae	*Elymus caput-medusae*	Medusa head	I
Poaceae	*Festuca perennis*	Rye grass	I
Poaceae	*Festuca myuros*	Rattail sixweeks grass	I
Poaceae	*Bromus hordeaceus*	Soft chess	I
Poaceae	*Avena fatua*	Wild oat	I
Poaceae	*Aegilops triuncialis*	Barbed goat grass	I
Polygonaceae	*Rumex crispus*	Curly dock	I
Ranunculaceae	*Ranunculus bonariensis var. trisepalus*	Buttercup	N
Rosaceae	*Rubus armeniacus*	Himalayan blackberry	I
Rubiaceae	*Galium aparine*	Goose grass	N
Themidaceae	*Brodiaea elegans* ssp. *elegans*	Harvest brodiaea	N

Scientific Name	Common Name
Ardea herodias	Great blue heron
Callipepla californica	California quail
Charadrius vociferus	Killdeer
Elanus leucurus	White-tailed kite
Himantopus mexicanus	Black-necked stilt
Zenaida macroura	Mourning dove

APPENDIX C.3

Special-Status Plant Survey

October 20, 2017

Olga Sciorelli
Land Development Manager
K. Hovnanian Homes
3721 Douglas Boulevard, Suite 150
Roseville, CA 95661

RE: Special-Status Plant Survey for The Ranch (Jaeger 530) Project located in the City of Rancho Cordova, Sacramento County, California

Dear Ms. Sciorelli:

This report summarizes the results of the focused botanical survey for special-status plant species on The Ranch Project (aka Jaeger 530) (Project Site), located in Sacramento County, California. The survey was conducted in accordance with and subject to guidelines provided by the California Department of Fish and Wildlife (CDFW) and the California Native Plant Society (CNPS). The purpose of the survey was to determine whether three special-status plants, Sacramento Orcutt grass (*Orcuttia viscida*), slender Orcutt grass (*Orcuttia tenuis*), and Boggs lake hedge-hyssop (*Gratiola heterosepala*), occur within the Project Site.

LOCATION

The Project Site is located in southeastern Sacramento County, approximately five miles south of U.S. Highway 50, immediately east of Rancho Cordova Parkway, and north of Jackson Road (Highway 16) within the City of Rancho Cordova. The Project Site is located in Township 8 North, Range 7 East, Section 16 within the 7.5-minute USGS *Buffalo Creek, California* quadrangle (**Figure 1**).

METHODOLOGY

Two Foothill Associates' biologists conducted a focused botanical survey within the evident and identifiable blooming period of the potentially occurring special-status species listed in this letter on June 12 and 13, 2017.

Transects were systematically walked throughout the whole of the Project Site, with special attention paid to areas that contained suitable habitat for the special-status plant species. In this case, five-foot transects were walked throughout each vernal pool on the Project Site and all riverine wetland features were surveyed.

DRAFT

The survey was conducted by two biologists with the following qualifications: experience with conducting floristic surveys; intimate knowledge of plant taxonomy and plant community ecology and classification; familiarity with the plants of the area, including special-status and locally significant plants; familiarity with the appropriate State and federal statutes related to plants and plant collecting; and experience with analyzing impacts of project activities on native plants and plant communities.

ENVIRONMENTAL SETTING

The Project Site consists of approximately 530 acres of land that comprises non-native annual grassland as well as 21.42 acres of various wetland features including: vernal pools (15.39 acres), depressional seasonal wetlands (2.80 acres), riverine seasonal wetlands (1.68 acres), and intermittent drainages (1.55 acres). The general topography of the Project Site is gently sloping from approximately 176 feet above mean sea level (MSL) in the southwest corner to 192 feet above MSL in the northeast corner of the Project Site (54 to 59 meters). The majority of the Project Site (approximately 356 acres) is proposed for development including residential housing, parks, a shopping center, and detention basins. Approximately 174 acres will be preserved in perpetuity.

RESULTS AND CONCLUSIONS

Although the Project Site contains potential habitat for three special-status plant species, these species were not observed during the botanical survey. One *Gratiola* species was observed and identified to species (*Gratiola ebracteata*), a common gratiola. Dominant plant species observed in the uplands on the Project Site include: medusahead rye (*Elymus caput-medusae*), Italian rye grass (*Festuca perennis*), rattail sixweeks grass (*Festuca myuros*), barley (*Hordeum murinum*), oat (*Avena* sp.), wild rye (*Elymus* sp.), spikeweed (*Centromadia fitchii*), rose clover (*Trifolium hirtum*), and long-beaked filaree (*Erodium botrys*). Dominant species observed within the wetland features on the Project Site include: coyote thistle (*Eryngium vaseyi*), spikerush (*Eleocharis macrostachya*), seaside barley (*Hordeum marinum*), woolly marbles (*Psilocarpus brevissimus*), hyssop loosestrife (*Lythrum hyssopifolium*), rabbitsfoot grass (*Polypogon monspeliensis*), Fremont's goldfields (*Lasthenia fremontii*), and toad rush (*Juncus bufonius*). A complete list of plants observed within the Project Site is enclosed as **Attachment A** of this report.

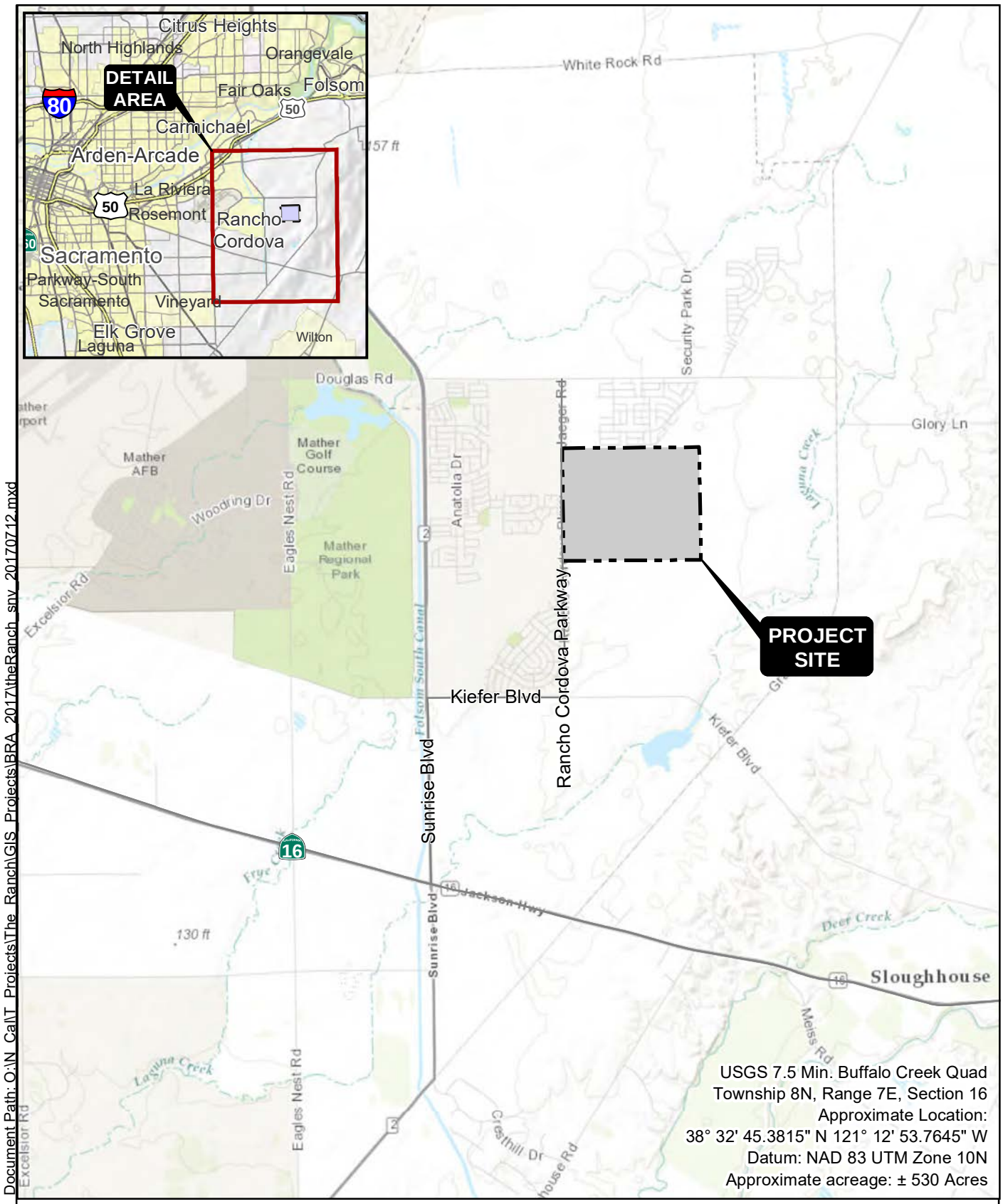
If you have any questions please contact me at your earliest convenience at (916) 435-1202 or via email at zneider@foothill.com.

Sincerely,

Zachary Neider
Biologist

Enclosures (2)

DRAFT



Document Path: O:\N_Cal\T_Projects\The_Ranch\GIS_Projects\BRA_2017\theRanch_snv_20170712.mxd

USGS 7.5 Min. Buffalo Creek Quad
Township 8N, Range 7E, Section 16
Approximate Location:
38° 32' 45.3815" N 121° 12' 53.7645" W
Datum: NAD 83 UTM Zone 10N
Approximate acreage: ± 530 Acres

SITE AND VICINITY

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE
© 2017

N

0 0.5 1
Miles
1 in = 1 miles

Drawn By: JFI
QA/QC: AMP
Date: 07/27/2017

FIGURE 1

THE RANCH

Document Name: theRanch_snv_20170712.mxd : 10/13/2017 1:09:28 PM

Attachment A **ATTACHMENT 4**

Plant Species Observed within the Study Area

Family	Scientific Name	Common Name	Native or Invasive
Apiaceae	*Eryngium vaseyi*	Coyote-thistle	N
Asteraceae	*Psilocarphus brevissimus*	Woolly-marbles, woollyheads	N
Asteraceae	*Centromadia fitchii*	Spikeweed	N
Asteraceae	*Lasthenia fremontii*	Fremont's goldfields	N
Asteraceae	*Leontodon saxatilis*	Hairy hawkbit	I
Asteraceae	*Cotula coronopifolia*	Brass-buttons	I
Boraginaceae	*Plagiobothrys stipitatus*	Great Valley popcornflower	N
Brassicaceae	*Raphanus* sp.	Radish	I
Convolvulaceae	*Convolvulus arvensis*	Bindweed, orchard morning-glory	I
Crassulaceae	*Crassula aquatica*	Crassula	N
Euphorbiaceae	*Croton* sp.	Croton	N
Geraniaceae	*Erodium botrys*	Storksbill, filaree	I
Juncaceae	*Juncus bufonius*	Toad rush	N
Lamiaceae	*Trichostema lanceolatum*	Vinegar weed	N
Lamiaceae	*Pogogyne zizyphoroides*	Sacramento beardstyle	N
Lythraceae	*Lythrum hyssopifolia*	Loosestrife	I
Onagraceae	*Epilobium* sp.	Willowherb	--
Orobanchaceae	*Parentucellia viscosa*	Parentucellia	I
Plantaginaceae	*Gratiola ebracteata*	Bractless hedge-hyssop	N
Poaceae	*Polypogon monspeliensis*	Annual beard grass, rabbitfoot grass	I
Poaceae	*Hordeum marinum ssp. gussoneanum*	Mediterranean barley	I
Poaceae	*Elymus caput-medusae*	Medusa head	I
Poaceae	*Festuca perennis*	Rye grass	I
Poaceae	*Festuca myuros*	Rattail sixweeks grass	I
Poaceae	*Bromus hordeaceus*	Soft chess	I
Poaceae	*Avena fatua*	Wild oat	I
Poaceae	*Aegilops triuncialis*	Barbed goat grass	I
Polygonaceae	*Rumex crispus*	Curly dock	I
Ranunculaceae	*Ranunculus bonariensis var. trisepalus*	Buttercup	N
Rosaceae	*Rubus armeniacus*	Himalayan blackberry	I
Rubiaceae	*Galium aparine*	Goose grass	N
Themidaceae	*Brodiaea elegans* ssp. *elegans*	Harvest brodiaea	N

APPENDIX D

Cultural Resources Appendices

CONTENTS

Appendix D.1: Determination of Eligibility and Effect

Appendix D.2: The Ranch Updated Cultural Resources Inventory and Evaluation, Rancho Cordova, Sacramento County, California

APPENDIX D.1

Determination of Eligibility and Effect (Confidential)

DETERMINATION OF ELIGIBILITY AND EFFECT FOR THE JAEGER 530 PROJECT AREA SACRAMENTO COUNTY, CALIFORNIA

Prepared by

Melinda A. Peak
Peak & Associates, Inc.
3941 Park Drive, Suite 20-329
El Dorado Hills, CA 95762
(916) 939-2405

Prepared for

Foothill Associates
655 Menlo Drive, Suite 100
Rocklin, CA 95765-3718
(916) 435-1202

January 2005
(Job #04-192)

DETERMINATION OF ELIGIBILITY AND EFFECT FOR THE JAEGER 530 PROJECT AREA SACRAMENTO COUNTY, CALIFORNIA

Prepared by

Melinda A. Peak
Peak & Associates, Inc.
3941 Park Drive, Suite 20-329
El Dorado Hills, CA 95762
(916) 939-2405

Prepared for

Foothill Associates
655 Menlo Drive, Suite 100
Rocklin, CA 95765-3718
(916) 435-1202

January 2005
(Job #04-192)

INTRODUCTION

The project involves the residential development of a 530 acre tract of land. The parcel lies on the east side of Jaeger Road, south of Douglas Road, and one mile east of Sunrise Boulevard (Figure 1). The project area is located includes the southern portion of section 16, Township 8 north, Range 7 east, mapped on the Buffalo Creek United States Geological Survey 7.5 minute quadrangle.

Because the proposed work will require Clean Water Act (CWA) permitting from the United States Army Corps of Engineers, the applicant will participate as a consulting party to assist the federal agency in demonstrating compliance with Section 106 of the NHPA (16 U.S.C. 470f; regulations codified at 36 CFR § 800).

Melinda A. Peak, senior historian with Peak & Associates, Inc. served as principal investigator for the study, with Ann Peak directing the field survey team (resumes, Appendix 1).

REGULATORY CONTEXT

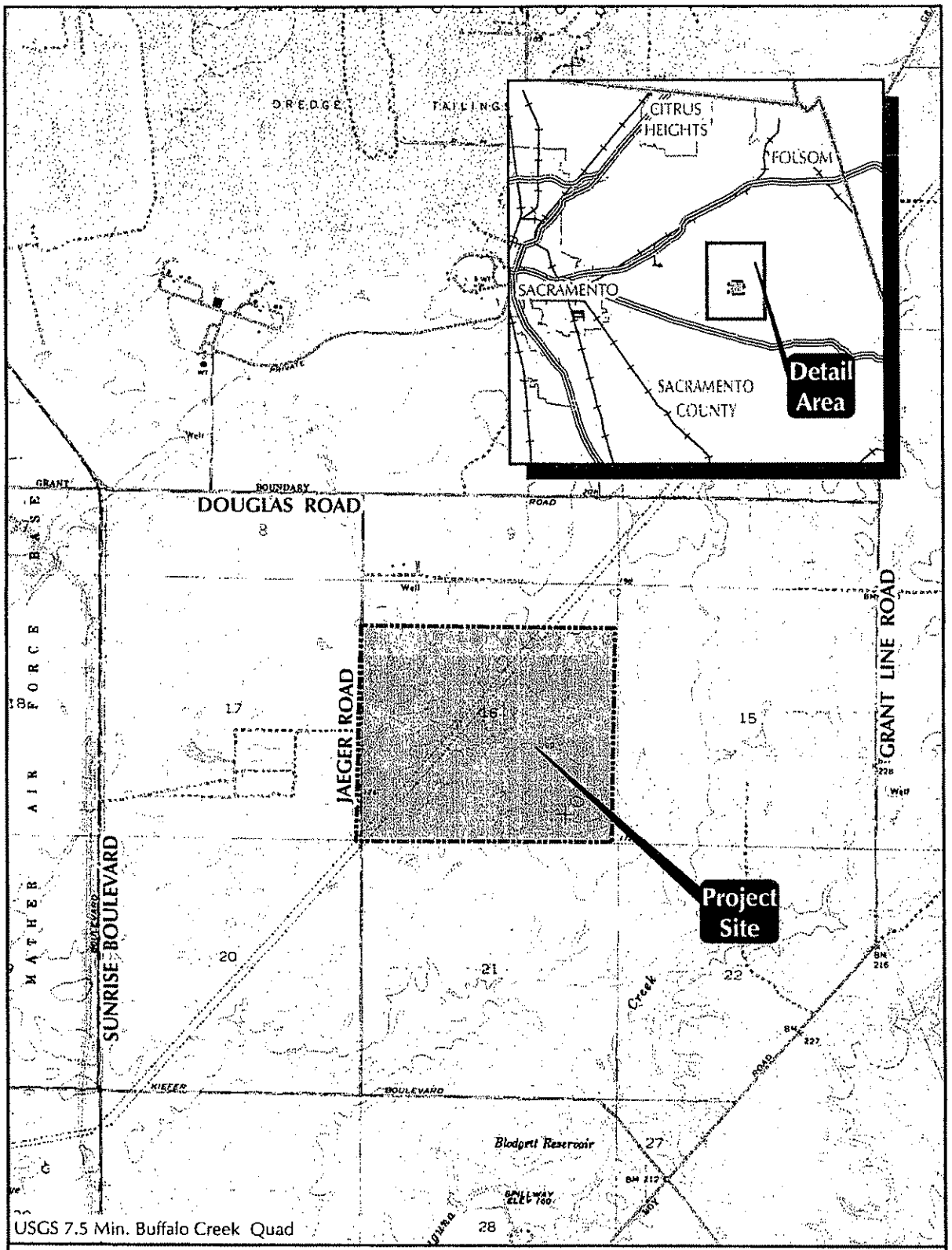
The Section 106 review process is implemented using a five step procedure: 1) identification and evaluation of historic properties; 2) assessment of the effects of the undertaking on properties that are eligible for the National Register; 3) consultation with the State Historic Preservation Office (SHPO) and other agencies for the development of a memorandum of agreement (MOA) that addresses the treatment of historic properties; 4) receipt of Advisory Council on Historic Preservation comments on the MOA or results of consultation; and 5) the project implementation according to the conditions of the MOA.

The Section 106 compliance process may not consist of all the steps above, depending on the situation. For example, if identification and evaluation result in the documented conclusion that no properties included in or eligible for inclusion are present, the process ends with the identification and evaluation step.

FRAMEWORK FOR EVALUATION

Decisions regarding management of cultural resources hinge on determinations of their significance (36 CFR 60.2). As part of this decision-making process the National Park Service has identified components which must be considered in the evaluation process, including:

- o criteria for significance;



SITE AND VICINITY

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING
LANDSCAPE ARCHITECTURE
© 2003

N

0 1500 3000
SCALE IN FEET

Drawn By: MAB
Date: 11/20/03

FIGURE 1

JAEGER 530

site_and_vicinity.mxd

- o historic context; and
- o integrity.

Criteria for Significance

Significance of cultural resources is measured against the National Register criteria for evaluation:

> The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and,
>
> (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> (b) that are associated with the lives of persons significant in our past; or
>
> (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> (d) that have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

Historic Context

The historic context is a narrative statement "that groups information about a series of historic properties based on a shared theme, specific time period, and geographical area" To evaluate resources in accordance with federal guidelines, these sites must be examined to determine whether they are examples of a defined "property type". The property type is a "grouping of individual properties based on shared physical or associative characteristics". Through this evaluation, each site is viewed as a representative of a class of similar properties rather than as a unique phenomenon.

A well developed historical context helps determine the association between property types and broad patterns of American history. Once this linkage is established, each resource's potential to address specific research issues can be explicated.

Integrity

For a property to be eligible for listing in the National Register it must meet one of the criteria for significance (36 CFR 60.4 [a ,b, c, or d]) and retain integrity. Integrity is defined as "the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic or prehistoric period".

The following discussion is derived from National Register Bulletin 15 ("How to Apply the National Register Criteria for Evaluation").

Within the concept of integrity, there are seven aspects or qualities that define integrity in various combinations. The seven aspects are: location, design, setting, materials, workmanship, feeling, and association. To retain historic integrity, a property will possess several or usually most of these aspects. The retention of specific aspects is necessary for a property to convey this significance. Determining which of the seven aspects are important involves knowing why, where and when the property is significant.

The prescribed steps in assessing integrity are as follows:

- define the essential physical features that must be present for a property to represent its significance;
- determine whether the essential physical features are visible enough to convey their significance;
- determine whether the property needs to be compared with similar properties; and,
- determine, based on the significance and essential physical features, which aspects of integrity are particularly vital to the property being nominated and if they are present.

Ultimately, the question of integrity is answered by whether or not the property retains the identity for which it is significant.

All properties change over time. It is not necessary for a property to retain all its historic physical features or characteristics. However, the property must retain the essential physical features that enable it to convey its historic identity. The essential physical features are those features that define why a property is significant.

A property's historic significance depends on certain aspects of integrity. Determining which of the aspects is most important to a particular property requires an understanding of the property's significance and its essential physical features. For example, a property's historic significance can be related to its association with an important event, historical pattern or person. A property that is significant for its historic association is eligible for listing if it retains the essential physical

features that made up its character or appearance during the period of its association with the important event, historical pattern, or person.

A property important for association with an event, historical pattern, or person ideally might retain some features of all seven aspects of integrity. Integrity of design and workmanship, however, might not be as important to the significance, and would not be relevant if the property were an archeological site. A basic integrity test for a property associated with an important event or person is whether a historical contemporary would recognize the property as it exists today. For archeological sites that are eligible under Criteria a and b, the seven aspects of integrity can be applied in much the same way as they are to buildings, structures, or objects.

In sum, the assessment of a resource's National Register eligibility hinges on meeting two conditions:

- the site must possess the potential to be eligible for listing in the National Register under one of the evaluation criteria either individually or as a contributing element of a district based on the historic context that is established; and

- the site must possess sufficient integrity, i.e. it must retain the qualities that make it eligible for the National Register.

For the National Register, "a district possesses a significant concentration, linkage, or continuity of ... objects united historically or aesthetically by plan or physical development." The identity of a district derives from the relationship of its resources, which can be an arrangement of functionally related properties.

CULTURAL HISTORY

Archeological Background

The Sacramento Delta was one of the first regions in California to attract intensive archeological fieldwork. Between 1893 and 1901, avocational archeologist J. A. Barr excavated many prehistoric mounds in the Stockton area. He collected nearly 2000 artifacts during the course of his investigations. H. C. Meredith was another avocational archeologist of the period who pursued collecting in the same Stockton locality. Meredith (1899, 1900) did publish a compilation of his own and Barr's findings, and these appear to constitute the earliest accounts of delta archeology. Holmes (1902), from the Smithsonian Institution, further elaborated on the delta or "Stockton District" archeology, presenting illustrations of artifacts collected by Meredith and Barr.

It was Elmer J. Dawson who first recognized culture changes through time in delta archeology. Though he was an amateur archeologist, Dawson understood the necessity of keeping accurate

notes on grave associations and provenience of artifacts. He collaborated with W. E. Schenck to produce an overview of northern San Joaquin Valley archeology (Schenck and Dawson 1929). The overview contained information on more than 90 prehistoric sites as well as data on previous collectors.

By 1931, the focus of archeological work was directed toward the Cosumnes River locality, where survey and exploration were conducted by Sacramento Junior College (Lillard and Purves 1936). Excavations, especially at the stratified Windmiller mound (CA-SAC-107), suggested three temporally distinct cultural traditions: Early, Transitional, and Late. Information grew as a result of excavations at other mounds in the delta and lower Sacramento Valley by Sacramento Junior College and the University of California, Berkeley.

Previous investigations in the project region have focused upon very detailed archival research of Spanish sources (Bennyhoff 1977), reexamination of earlier work (Ragir 1972; Schulz 1981; Doran 1980) and archeological investigations at a number of small sites (Schulz et al. 1979; Schulz and Simons 1973; Soule 1976). Several of the previously investigated sites probably represent satellite encampments or small villages associated with major villages. The majority of the sites appear to be relatively late in time, and probably represent Plains Miwok. The activities practiced are varied, but detailed studies on the faunal collection suggest seasonality of occupation and a focus on fish species other than the main channel varieties.

Writing the definitive summary of California archeology, Moratto (1984: 529-547) devoted an entire chapter to linguistic prehistory. For the Central Valley region, Moratto points out that some Early Horizon and Middle Horizon central California archeological sites appear at least in part, contemporaneous, based on existing radiocarbon dates. Cultural materials recovered from CA-SJO-68, an Early Horizon site, are thought to relate to date to 4350 ± 250 B.P or 2350 B.C. On the other hand, a Middle Horizon component at CA-CCO-308 dates to 4450 ± 400 B.P. or 2450 B.C. The antiquity of other Early and Middle Horizon sites demonstrate an overlap of the two horizons by a millennium or more.

One explanation proposes that the Middle Horizon represents an intrusion of ancestral Miwok speaking people into the lower Cosumnes, Mokelumne, and Sacramento River areas from the Bay Area. The Early Horizon may represent older Yokuts settlements or perhaps the speakers of a Utian language who were somehow replaced by a shift of population(s) from the bay.

Ethnological Background

The project area lies in the territory attributed to the Nisenan, a branch of the Maidu group of the Penutian language family. Tribes of this language family dominated the Central Valley, San Francisco Bay areas, and western Sierra Nevada foothills at the coming of the white man. The Nisenan controlled the drainages of the Yuba, Bear, and American rivers, along with the lower portion of the Feather River. The tribes of this whole region referred to themselves as Nisenan, meaning "people," in contrast to the surrounding tribes, in spite of close linguistic and cultural

similarities. For this reason, they are usually named by this term rather than the more technical "Southern Maidu." In any event, the local main village was of more importance to the people than the tribal designation, and groups identified themselves by the name of the central village.

Their northern boundary has not been clearly established due to similarity in language to neighboring groups. The eastern boundary was the crest of the Sierra Nevada mountains. Probably a few miles south to the confluence of the American and Sacramento rivers on the valley floor was their southern boundary. The western boundary extended from this point upstream to the mouth of the Feather River.

The Valley Maidu settlement pattern was basically oriented to major river drainages, with ancillary villages located on tributary streams and sloughs. Major villages often supported a population exceeding five hundred people (Wilson and Towne 1978:389). The flat grasslands between water courses were used for collecting vegetable foods and hunting, but these activities leave little, if any, archeological evidence.

Both the valley and foothill Nisenan lived by hunting and gathering, with the latter being more important. Acorns in the forms of meal, soup or bread provided the staple diet, augmented by a wide variety of seeds and tubers. Hunting and fishing were regularly practiced, but provided less of the diet than vegetable foods. The bedrock mortar and pestle were employed to process the acorn meats into flour, and the mortar cups are frequently found throughout the range of oak trees. Both salmon and eel were caught at Salmon Falls near Folsom.

Religion was in the form of the "Kuksu Cult," a widespread pattern among the California Indians. Ceremonies congregated in the semi-subterranean dancehouse located at the central village and "cry sites" where the annual mourning ceremony for the dead took place. Later, the religious revival of the ghost dance also affected this area.

In 1833, the great epidemic swept through the Sacramento Valley. This epidemic has been attributed to malaria (Cook 1955:308), and is estimated to have killed seventy-five percent of the native population, leaving only a shadow of the original Maidu to face the intruding miners and settlers. The Nisenan of the mountain areas felt little of the impact of European settlement in California as compared to the Valley Nisenan, who were subjected to some missionization. The Mountain Nisenan, remote from these early impacts, were overwhelmed by the gold rush. Native ways of life were almost totally abandoned, and today only a few families in Placer, Nevada, Yuba, and El Dorado counties identify themselves as Nisenan and can speak the language (Wilson and Towne 1978).

Historical Context

The project area lies just south of the southern boundary of the Rancho Rio de los Americanos, a grant of over 35,500 acres on the south side of the American River, made to William Leidesdorff by the Mexican governor. Leidesdorff died in San Francisco in 1848, and Joseph L.

Folsom, who had come to California as assistant quartermaster of Stevenson's New York Volunteers, purchased the estate from the heirs at a low price, becoming one of the wealthiest men in California. The town of Folsom was laid out on the rancho in 1855 as the terminus of the Sacramento Valley Railroad, and named in his honor (Hoover, Rensch and Rensch 1970:300).

The project area lies near the route of White Rock Road, an important early route into El Dorado County and the mining region. It was first used in 1848, connecting Sacramento to Placerville. A number of inns grew up along this road to provide food and lodging to the drivers of the slow-moving freight wagons that used this roadway, carrying supplies to the mining towns. The discovery of the Comstock lode in Nevada in the 1860s brought increased traffic on this road. The completion of the Central Pacific in 1869 brought an end to the era of heavy freight hauling, with goods more efficiently shipped via rail from Sacramento to Nevada, or directly from the East.

The agricultural value of the land was soon recognized, and the lands of the area claimed for use by permanent settlers. The lands of the project area were of limited agricultural value, used for seasonal grazing or for the cultivation of grain. In many areas, small land tracts were originally claimed by a number of individuals who attempted to make a living by farming and ranching. It was soon discovered that the long dry period between May and October with no rainfall caused the grasses to dry off, leaving the land useless for grazing livestock except in the winter and spring. Cattle and sheep ranchers were forced to move their herds to the mountains to a summer range. This was not cost-efficient except for landowners who had large tracts of land at the lower elevations to support large herds that could be moved seasonally. As a result, many sold their small tracts to their neighbors and moved on to other pursuits, with some families amassing thousands of acres in the region for their cattle and sheep.

One of the later uses for land in the region was for mining with dredgers. To the north of the project area, the Natomas Company acquired much of the land from the early ranchers. The proximity of water made this property viable for dredging, although it is at the edge of what could be dredged due to the topography.

A description of the dredging process follows:

> A bucket-line dredge floats in a pond which moves along with the dredge. The gravel is constantly excavated by the endless chain of moving buckets. Digging is started at the top of the bank and as the bucket-line moves upward, the dredge swings to the left and right, pivoting about the spud, a heavy pole at the stern with its point imbedded in the rock tailings. The side swinging is accomplished by the port and starboard bow lines which are carried from the underwater end of the digging ladder to the shore blocks and back to the bow fair-leads on the forward deck, thence to the swing winch, usually mounted inside the deck house on the starboard side.

> The buckets elevate the material to a main hopper ahead of a revolving trommel. The gravel is washed and classified in the trommel. Trommel oversize or tailings are discharged to a rubber conveyor belt or so-called stacker belt where the material is stacked astern of the dredge as large tailing piles. The tailings left by bucket-line dredges consist of huge furrow-like ridges of gravels, cobbles and small boulders which are 50 feet or more above the adjacent land surface (Carlson 1955:136).

On-site dredging reportedly occurred between 1915 and 1962 to the north of the project area. The average depth of dredging at the site is reported to have been between 80 and 110 feet.

Beginning in 1950, the Natomas Company sold off large tracts of dredged-over lands to Aerojet General Corporation (AGC) to be used in part of the development and testing of missile propulsion systems. The project area was sold to AGC in 1956. By the mid-1950s, Aerojet held over 18,000 acres. The vast acreage of dredge tailings, available at a low cost, provided Aerojet insulation from those who might be disturbed by the noise, at a location in fairly close proximity to housing for a large work force (Lindström and Wells 1989:32).

Between 1956 and 1961, about 1,700 acres of the site were leased to McDonnell Douglas Corporation (MDC). MDC constructed test stands, buildings, and various facilities into the Administration, Alpha, and DM-14 areas. In 1961, MDC purchased the 4,000 acre property from AGC to establish the site as a static rocket test facility. MDC divided the property in nine areas, seven of which were developed into test and assembly facilities. The developed areas were designated: Alpha Complex, Beta Complex, Kappa Complex, Gamma Complex, Sigma Complex, DM-14 Area and the Administration and Support Area. The two undeveloped areas include the proposed Delta Complex in the northwest quadrant of the site, and an unassigned area for future expansion along the eastern edge of the property. MDC used the site for the assembly and testing of rocket systems through 1969, when the last static test firing occurred.

Between 1962 and 1972, certain parcels of the site were leased to the National Aeronautics and Space Administration (NASA). The site was maintained in a state of readiness for the NASA program between 1969 and 1972. The site was deactivated between 1972 and 1977, with the metal portions of the test stands demolished and dismantled for scrap. In 1977, the Administration Area was converted to an industrial park. MDC divided the area into numerous parcels offered for sale or lease. AGC reacquired the project area in 1984, with the exception of some of the parcels in the Security Park. The CDC Cattle Company has used much of the site for grazing since 1971 (ENSR Consulting and Engineering 1993).

Site Specific Historical Context

George Frederick Jaeger was born in Germany in October 1840. His family immigrated to the United States in 1845. In the 1860 Federal Census (taken in June), there are two 19-year-old men named George Jaeger born in Germany and residing in the United States with their parents—one in Missouri and one in Wisconsin. The George Jaeger who purchases land in the

study area is undoubtedly one of these individuals, but without extensive research, it is not possible to tell which one is the correct individual.

The first record of George Jaeger in California is in 1875, when he marries Emma Henrietta Reese in El Dorado County (El Dorado County marriages). Emma Reese was born in California in 1857, with parents Henry and Henrietta Reese born in Prussia and Germany (Federal Census 1870). Her father worked as a miner in 1870, and the family lived in the Placerville Township.

On January 1, 1879, their first daughter was born at Reservoir Hill in El Dorado County (*Mountain Democrat*, 1-11-1879). In the 1880 Federal Census, George Jaeger is listed in El Dorado County in the Placerville Township as a 38-year-old miner, with his wife Emma, 23, and their one-year-old daughter, Etta.

In 1880, George Jaeger purchased lands including the study area, apparently deciding to switch his occupation to ranching and farming. Louis Lepetit was shown in the County tax assessment roll as the owner of several tracts of land in the County, including all of section 16 and the fractional south half of section 9 (Township 8 North Range 7 East). The only improvement listed is $20 on the property in section 9, likely for fencing. Jaeger paid the second tax installment in November 1880, suggesting his purchase of the property between April an November of 1880.

By 1885, Jaeger was listed as the owner of the 850-acre tract, valued at $12,750. He had a house and fences worth $1,250. Other property included furniture valued at $100, an organ at $50, farming tools ($50), machinery ($100), wagons worth $150; harnesses worth $25, 4 horses and 4 colts valued at $550, 10 cows worth $300, 15 head of cattle, poultry and $400 in wheat.

In 1887, twin girls were born to the family: Maybel and Myrtle. The 1888-1889 County Directory listed Jaeger in the community of Cosumne, apparently his post office at the time. By 1890, Jaeger had continued to prosper. He had improvements valued at $1,000, with personal property of $1,925, including $250 in monies loaned to others, calves, cattle, colts, cows, farm tools, furniture, wheat, harnesses, horses, and wagons. In the 1891-1892 County Directory, his residence is listed as "four miles north" of Cosumne.

In 1892, the Sacramento County Great Register of Voters provided a physical description of Jaeger: 5' 9" in height, with light hair and complexion with blue eyes. He was then listed at Michigan Bar, apparently the closest precinct at the time. He was reported to be a naturalized citizen by virtue of his father's naturalization.

In 1900, the family was listed on the ranch in Lee Township. George and Emma Jaeger lived with their three daughters: Etta, a 21-year-old bookkeeper at a drugstore; and 12-year-old twins, Maybel and Myrtle.

Jaeger apparently raised hay and grain on his land, as well as some livestock. His hers was too small for him to have moved it annually to land at higher elevations when it dried out after the spring rains ended. He must have irrigated a portion of his lands as pasture for the livestock.

Jaeger's home appears to have been located in section 9. Jaeger may have also had some difficulty in sustaining operations at the ranch, as the involvement of his daughters in ranch activities would have been limited due to the attitudes toward the role of women at this time.

George Jaeger apparently moved his family in to the City of Sacramento in about 1905 or 1906 as he is listed in the 1904 Great Register of Voters at Sloughhouse, apparently on his ranch until 1904. George may have been in ill health, or may have wished to retire from farming with increasing age. He purchased a home at 1523 F Street.

Jaeger died on February 14, 1907 at age 66. The family had a visitation at their home on the 16th, with a private funeral. No other detail on his life was provided in the obituaries (*Sacramento Union* 2-16-1907).

In his will, Jaeger left three-fifths of his estate to his wife, with the remaining two-fifths to be shred by his three daughters. The will was signed on February 9, 1907, five days before his death. In early 1908, Emma Jaeger filed a final account for the estate. Jaeger owned four houses in the City of Sacramento, a 414-acre ranch in the Florin area, a 200-acre ranch as well as the 850-acre main ranch. He had sold his 480-acre holdings in El Dorado County to Alex F. Forni. The total value of the estate was over $37,000.

Apparently, two of the houses in Sacramento were rental properties. The ranch was apparently rented the ranch to the Little Brothers. Income was received for hay sold. Sacramento County maps continue to show the study area as owned by the George F. Jaeger estate through at least 1923. The 1920 Federal Census indicates that Mrs. Jaeger lived with her unmarried daughter Myrtle on 27th Street in the City of Sacramento, with their occupation listed as "none", suggesting they continued to receive income from the ranch property.

RESEARCH

A records search was conducted for the project area at the North Central Information Center of the California Historical Resources Information System in November 2004. No sites have been identified in or adjacent to the project area. CA-SAC-308H has been used to record all of the mining tailings and features of the American River Mining District, and it is assumed that the nearby dredger tailings are considered part of that "site."

NATIVE AMERICAN CONSULTATION

A letter was sent to the Native American Heritage Commission (NAHC) requesting a check of the Sacred Lands files (Appendix 2). The check failed to reveal any properties listed as Sacred Lands. The NAHC did provide a list of individuals and groups to contact regarding the property.

Letters were sent to Leland Daniels; Glenn Villa Sr. and Pamela Baumgarter, of the Ione Band of Miwok Indians; Clifford McKean, Miwok Indian Community of the Wilton Rancheria; Dwight Dutschke, Sierra Native American Council; and Mary Daniels-Tarango, Wilton Rancheria. No replies have been received to date.

FIELD ASSESSMENT

Ann Peak (resume, Appendix 1), assisted by Sue Merritt (graduate student in Anthropology, CSU Sacramento) and Leland Daniels (archeological technician of Miwok descent), completed a field survey of the project site in December 2004, with a complete inspection of the proposed project site. Ground visibility was fair to good. Based on the results of this inspection, it can be confirmed that there are no prehistoric nor historic period resources located within the project area.

EFFECTS OF THE PROPOSED PROJECT

As a result of the identification and evaluation efforts, an agency official may find that there are no historic properties present or there are historic properties present but the undertaking will have no effect upon them as defined in Section 800.16 (i).

If the agency official finds there are historic properties which may be affected by the undertaking, the agency official shall apply the criteria of adverse effect. "An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling or association" (Section 800.5 (a)).

There are three possible findings:

- **Finding of no historic properties affected:** There is no effect of any kind on the historic properties.
- **Finding of no adverse effect:** There could be an effect, but the effect would not be harmful to the characteristics that qualify the property for inclusion in the National Register; or
- **Adverse effect:** There could be an effect, and that effect could diminish the integrity of such characteristics.

There were no historic properties recorded within the project area. With regard to Section 106 of the NHPA, it is recommended that agency seek concurrence from the California SHPO with a finding of "no historic properties affected" per § 800.4(d) (1).

REFERENCES

Bennyhoff, James A.
1977 Ethnogeography of the Plains Miwok. *Center for Archeological Research at Davis Publication* 5. Davis.

Carlson, D.W.
1955 Sacramento County Placer Mines. *California Journal of Mines and Geology*, volume 51, pp. 134-142.

Clark, William B.
1970 Gold Districts of California. *California Division of Mines and Geology Bulletin* 193.

Cook, Sherburne F.
1955 The Aboriginal Populations of the San Joaquin Valley, California. *University of California Anthropological Records* 16(2). Berkeley.

Cross, Ralph H.
1954 *The Early Inns of California: 1844-1869.* Cross & Brandt, San Francisco

Davis, Winfield
1890 *An Illustrated History of Sacramento County, California.* The Lewis Publishing Company, Chicago.

Doran, G.
1980 *Paleodemography of the Plains Miwok Ethnolinguistic Area, Central California.* Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Davis.

ENSR Consulting and Engineering
1993 Preliminary Endangerment Assessment: Inactive Rancho Cordova Test Site (IRCTS), Rancho Cordova, California. Ms. on file, Aerojet General Corporation.

Holmes, W.H.
1902 Anthropological Studies in California. *Smithsonian Institution, Report of the U.S. National Museum for 1900*:155-187. Washington D.C.

Hoover, Mildred, Hero E. Rensch, Ethel G. Rensch and William N. Abeloe
1990 *Historic Spots in California* (Fourth Edition), revised by Douglas E. Kyle. Stanford University Press, Stanford.

Lillard, Jeremiah B. and William K. Purves
1936 The Archeology of the Deer Creek-Cosumnes Area, Sacramento County, California. *Sacramento Junior College, Department of Anthropology Bulletin* 1. Sacramento.

Lindström Susan and John Wells
1989 A Cultural Resource Evaluation of Aerojet General Corporation, Sacramento Plant, Sacramento County. Ms. On file, North Central Information Center.

Meredith, H.C.
1899 Aboriginal Art in Obsidian. *Land of Sunshine* 11:255-258.

1900 Archaeology in California: Central and Northern California. In *Prehistoric Implements*, edited by W.K. Moorehead, pp. 258-294. Robert Clarke, Cincinnati.

Moratto, Michael J.
1984 *California Archaeology.* Academic Press, New York.

Mountain Democrat newspaper.

Natomas Company of California
1922 Map of American River Lands Showing Dredgeable Areas, Prospecting and Progress. On file, Sacramento Archives and Museum Collection Center [SAMCC 81/31/1558a-c].

Peak & Associates, Inc.
1982 Cultural Resource Assessment of the Undredged Areas of the McDonnell-Douglas Properties, Sacramento County, California. Ms. On file, North Central Information Center.

1989 Cultural Resource Assessment of the Sunrise-Douglas Property, Sacramento County, California. Ms. On file, North Central Information Center.

1992 Cultural Resource Assessment of the Sunrise-Douglas Community and Specific Plan, Sacramento County, California. Ms. On file, North Central Information Center.

1999 Cultural Resource Assessment for the Proposed Rio del Oro Project Area, Sacramento County, California. Ms. On file, North Central Information Center.

Ragir, Sonia
1972 The Early Horizon in Central California Prehistory. *University of California Research Contributions* 15. Berkeley.

Reed, Walter G.
1923 *History of Sacramento County, California.* Historic Record Co., Los Angeles.

Sacramento Union newspaper.

Schenck, W. Egbert and Elmer Dawson
1929 Archeology of the Northern San Joaquin Valley. *University of California Publications in American Archeology and Ethnology* 25(4):289-413. Berkeley.

Schultz, Peter D.
1981 *Osteoarchaeology and Subsistence Change in Prehistoric Central California.* Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Davis.

Schulz, Peter, D. Abels and Eric Ritter
1979 Archeology of the Johnson Site (CA-Sac-65), Sacramento County, Califomia. *California Department of Parks and Recreation, Archaeological Reports* 18:1-31.

Schulz, Peter and Dwight Simons
1973 Fish Species Diversity in a Prehistoric Central California Indian Midden. *California State Department of Fish and Game* 59(2):107-113. Sacramento.

Slaymaker, Charles
1988 Letter report to James Rains, County of Sacramento, regarding the Sunrise Douglas Property. Ms. on file, North Central Information Center, California State University, Sacramento.

Soule, William E.
1976 Archeological Excavations at CA-Sac-329 Near Walnut Grove, Sacramento County, California. Ms. on file, North Central Information Center, California State University, Sacramento.

Thompson & West
1880 *History of Sacramento County, California.* Thompson & West, publishers, Oakland. Reprinted by Howell-North, Berkeley, 1960.

Wilson, Norman L. and Arlene Towne
1978 Nisenan. In *California,* edited by Robert F. Heizer, pp. 387-397. Handbook of North American Indians, vol. 8, William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

APPENDIX 1

Resumes

PEAK & ASSOCIATES, INC.
RESUME

MELINDA A. PEAK
Senior Historian/Archeologist
3941 Park Drive, Suite 20 #329
El Dorado Hills, CA 95762
(916) 939-2405

January 2004

PROFESSIONAL EXPERIENCE

Ms. Peak has served as the principal investigator on a wide range of prehistoric and historic excavations throughout California. She has directed laboratory analyses of archeological materials, including the historic period. She has also conducted a wide variety of cultural resource assessments in California, including documentary research, field survey and report preparation.

In addition, Ms. Peak has developed a second field of expertise in applied history, specializing in site specific research. She is a registered professional historian and has completed a number of historical research projects. Ms. Peak has been a regular lecturer for courses in the Capital Campus Public History program (California State University, Sacramento), teaching cultural resource law and site specific research methods.

Through her education and experience, Ms. Peak meets the Secretary of Interior Standards for historian, architectural historian, prehistoric archeologist and historic archeologist.

EDUCATION

M.A. - History - California State University, Sacramento, 1989
Thesis: *The Bellevue Mine: A Historical Resources Management Site Study in Plumas and Sierra Counties, California*
B.A. - Anthropology - University of California, Berkeley, 1976

RECENT PROJECTS

In recent months, Ms. Peak has completed several determination of eligibility and effect documents in coordination with the Corps of Engineers for projects requiring federal permits, assessing the eligibility of a number of sites for the National Register of Historic Places. She has also completed historical research projects on a wide variety of topics for a number of projects including the development of navigation and landings on the Napa River, a farmhouse dating to

the 1860s, an early roadhouse, and a section of an electric railway line. She also completed an NRHP evaluation of Folsom Dam for the Corps of Engineers.

In recent years, Ms. Peak has prepared a number of cultural resource overviews and predictive models for blocks of land proposed for future development for general and specific plans. She has been able to direct a number of surveys of these areas, allowing the model to be tested.

She served as principal investigator for the multi-phase Twelve Bridges Golf Club project in Placer County. She served as liaison with the various agencies, helped prepare the historic properties treatment plan, managed the various phases of test and data recovery excavations, and completed the final report on the analysis of the test phase excavations of a number of prehistoric sites. She is currently involved as the principal investigator for the Clover Valley Lakes project adjacent to Twelve Bridges in the City of Rocklin, coordinating contacts with Native Americans, the Corps of Engineers and the Office of Historic Preservation.

Ms. Peak has served as project manager for a number of major survey and excavation projects in recent years, including the many surveys and site definition excavations for the 172-mile-long Pacific Pipeline proposed for construction in Santa Barbara, Ventura and Los Angeles counties. She also completed an archival study in the City of Los Angeles for the project. She also served as principal investigator for the 1997 coaxial cable removal project for AT&T.

Additionally, she completed a number of small surveys, served as a construction monitor at several urban sites, and directed the excavations of several historic complexes in Sacramento, Placer and El Dorado Counties.

Ms. Peak is the author of a chapter and two sections of the recently published history (1999) of Sacramento County, *Sacramento: Gold Rush Legacy, Metropolitan Legacy*. She is currently preparing text for the second Sacramento County history volume, to be published by Heritage Media in 2005.

RESUME

ANN S. PEAK **February 2004**
Consulting Archeologist

PROFESSIONAL EXPERIENCE

Ms. Peak has had over thirty years of extensive experience in both the public and private sectors, in providing professional archeological services. She has completed archeological work in all cultural areas of California, western Great Basin, and southeastern Oregon. Her projects include contracts with federal, state and local agencies and private firms.

She has directed all types of cultural resource-related projects, including field surveys, test excavations, data recovery programs, intensive archival research and cultural resource management.

EDUCATION

M.A. - Anthropology - California State University, Sacramento, 1975
B.A. - Anthropology - California State University, Sacramento, 1972
Studies in public health and microbiology, University of California, Berkeley, 1949-1950

RECENT PROJECTS

Ms. Peak most recently served as principal investigator for the data excavations at CA-PLA-592, -613, -618, -619, and -620, prehistoric midden sites in the Sierran foothills. In 1993, she served as the principal investigator for the excavations at CA-PLU-88, a large seasonal camp site with prehistoric rock art in the Plumas National Forest. She also completed the recordation and analysis of the numerous petroglyphs present within a portion of the site

Ms. Peak served as the principal investigator for the various surveys and site testing for the 172-mile-long Pacific Pipeline project proposed for construction in Santa Barbara, Ventura and Los Angeles counties. She has completed a number of smaller surveys throughout northern California and Nevada.

Ms. Peak has extensive experience in Great Basin culture areas, directing a number of large block surveys for proposed new mines or re-operations of historic mine sites throughout Nevada. She has served as principal or field director and co-author on other large projects completed in recent years, including excavations of two historic sites in Sacramento County and one in El Dorado County, several prehistoric sites within the proposed Haystack Reservoir in Merced County and a prehistoric site within the area of the proposed Susanville Correctional Center expansion.

APPENDIX 2

Native American Consultation

ATTACHMENT 4

STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
Fax (916) 657-5390
Web Site www.nahc.ca.gov

November 4, 2004

Robert A. Gerry
Peak & Associates, Inc.
3941 Park Drive, Suite 20, #329
El Dorado Hills, Ca 95762

Sent by Fax: 916-939-2406
Number of Pages: 5

RE: Proposed Sunrise-Douglas Planned Community, Sacramento County; Riverview subdivision, Sacramento County and Boessow subdivision, Sacramento County

Dear Mr. Gerry:

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4038.

Sincerely,

Debbie Pilas-Treadway
Environmental Specialist III

ATTACHMENT 4

Native American Contacts
Sacramento County
November 4, 2004

Sierra Native American Council
Dwight Dutschke, Chairperson
Box 12045 Miwok
Ione , CA 95640
(209) 274-2357

Miwok Indian Community of the Wilton Rancheria
Clifford McKean
9301 Rancheria Drive Miwok
Wilton , CA 95693
(916) 687-6747

Shingle Springs Band of Miwok Indians
Jeff Murray, Cultural Resources Manager
P.O. Box 1340 Miwok
Shingle , CA 95682 Maidu
(530) 676-8010
(530) 676-8033 Fax

Ione Band of Miwok Indians
Matthew Franklin, Chairperson
PO Box 1190 Miwok
Ione , CA 95640
(209) 274-6753
(209) 274-6636 Fax

Wilton Rancheria
Mary Daniels-Tarango
7916 Farnell Way Miwok
Sacramento, , CA 95823
(916) 427-2909 Home
(916) 322-9867 Work

Leland Daniels
7531 Maple Leaf Lane Miwok
Sacramento , CA 95828
(916) 689-7330

United Auburn Indian Community of the Auburn
Jessica Tavares, Chairperson
575 Menlo Drive, Suite 2 Maidu
Rocklin , CA 95765 Miwok
916 663-3720
916 663-3727 - Fax

Ione Band of Miwok Indians
Glen Villa, Sr., Cultural Committee
PO Box 1132 Miwok
Ione , CA 95640
gvilla@cdepot.net
(209) 274-0372

Billie Blue Elliston
604 Pringle Ave., #42 Miwok
Galt , CA 95632
916 375-5900 work

Randy Yonemura
4305 - 39th Avenue Miwok
Sacramento , CA 95824
(916) 421-1600

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Boessow South subdivision, Sacramento County.

ATTACHMENT 4

Native American Contacts
Sacramento County
November 4, 2004

El Dorado Miwok Tribe
Jeri Scambler, Chairperson
PO Box 1284 Miwok
El Dorado , CA 95623
miwoktribe@hotmail.com
530-363-3257

El Dorado Miwok Tribe
Ernest Faircloth, Cultural Preservation
PO Box 258 Miwok
El Dorado , CA 95623
(530) 626-7572

Ione Band of Miwok Indians
Pamela Baumgartner, Tribal Administrator
PO Box 1190 Miwok
Ione , CA 95640
admin@ionemiwok.org
(209) 274-6753
(209) 274-6636 Fax

Ione Band of Miwok Indians
Christine Boston, Environmental Coordinator
PO Box 1190 Miwok
Ione , CA 95640
christine@ionemiwok.org
(209) 274-6753
(209) 274-6636 Fax

El Dorado Miwok Tribe
Randy Yonemura
4305 - 39th Avenue Miwok
Sacramento , CA 95824
(916) 421-1600

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Boessow South subdivision, Sacramento County.

ATTACHMENT 4

Native American Contacts
Sacramento County
November 4, 2004

Rose Enos
15310 Bancroft Road Maidu
Auburn , CA 95603 Washoe
(530) 878-2378

Joe Marine
1025 35th Avenue, Apt 9 Maidu
Sacramento , CA 95822
916 429-7307

Shingle Springs Band of Miwok Indians
Jeff Murray, Cultural Resources Manager
P.O. Box 1340 Miwok
Shingle , CA 95682 Maidu
(530) 676-8010
(530) 676-8033 Fax

United Auburn Indian Community of the Auburn
Jessica Tavares, Chairperson
575 Menlo Drive, Suite 2 Maidu
Rocklin , CA 95765 Miwok
916 663-3720
916 663-3727 - Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Sunrise-Douglas Planned Community, Sacramento County.

PEAK & ASSOCIATES, INC.
CONSULTING ARCHEOLOGY
Twenty-firth Anniversary: 11/26/00

October 29, 2004

Ms. Debbie Pilas-Treadway
Native American Heritage Commission
915 Capitol Mall, Room 288
Sacramento, CA 95814

Dear Ms. Pilas-Treadway:

Peak & Associates, Inc. has contracted with Foothill Associates, Inc., to perform a cultural resources assessment of parts of the Sunrise-Douglas Planned Community in Sacramento County. The overall project area, including planned improvements of Sunrise Boulevard, is depicted on the enclosed maps. We have performed surveys of parts of this area several years ago. We are now contracted to complete the coverage. Since the older surveys were conducted before Native American consultation was commonplace, we wish to request information on the entire project area. The project lies in Sections 7 - 10,15 - 17 and 20 of T8N, R7E. Portions of the Sunrise Boulevard part of the project area are in T9N, R7E (no sections – Rio de los Americanos grant.) The project is mapped on the Buffalo Creek and Carmichael (Sunrise Boulevard) 7.5' USGS quadrangles, which are the base for the attached maps.

Because of wetland issues, and transportation funding, this is a federal undertaking. In accordance with the Secretary of the Interior's Guidelines for implementing Section 106, we are requesting a list of appropriate Native American contacts for the project area. We also request a check of the Sacred Lands Inventory for any potential conflicts.

Thank you for your assistance.

Sincerely,

Robert A. Gerry
Consulting Archeologist

//RG

■ 3941 Park Drive, Suite 20, #329, El Dorado Hills, CA 95762/Phone: (916)939-2405/Fax: 939-2406/email: peakinc@jps.net
□ 3161 Godman Avenue, Suite A, Chico, CA 95973/Phone: (530)342-2800/Fax: 342-0273/email: peakinc@cmc.net

PEAK & ASSOCIATES, INC.
CONSULTING ARCHEOLOGY

October 29, 2004

Mr. Leland Daniels
7531 Maple Leaf Lane
Sacramento, CA 94828

Dear Mr. Daniels:

Peak & Associates, Inc. has contracted with Foothill Associates, Inc., to perform a cultural resources assessment of parts of the Sunrise-Douglas Planned Community in Sacramento County. The overall project area, including planned improvements of Sunrise Boulevard, is depicted on the enclosed maps. We have performed surveys of parts of this area several years ago. We are now contracted to complete the coverage. Since the older surveys were conducted beore Native American consultation was commonplace, we are requesting information on the entire project area.

We are contacting individuals identified by the Native American Heritage Commission as persons who might have information to contribute regarding potential Native American concerns in the project area. Any information or concerns that you may have regarding village sites, traditional properties or modern Native American uses in any portion of the project vicinity will be welcomed. If you know other individuals who are familiar with the vicinity, we would welcome this information as well.

We recognize that much of the information about protected and sacred sites may be confidential within your community and cannot be shared with those outside of your community. We will work with you to minimize impact on your cultural resources. Please contact me to discuss how we can accomplish protection of your cultural resources within your limits of confidentiality and the needs of the project. Any confidential information you share will be kept confidential, so long as you make it clear which information is confidential and to what extent. We will have to communicate to our client that an area must be avoided, but we do not have to go into detail as to why.

Thank you for your assistance.

Sincerely,

Robert A. Gerry
Consulting Archeologist

RG//
Encl.

■ 3941 Park Drive, Suite 20-329, El Dorado Hills, CA 95762/Phone: (916)939-2405/Fax: 939-2406/email: peakinc@jps.net
□ 3161 Godman Avenue, Suite A, Chico, CA 95973/Phone: (530)342-2800/Fax: 342-0273/email: peakinc@cmc.net

PEAK & ASSOCIATES, INC.
CONSULTING ARCHEOLOGY

October 29, 2004

Ione Band of Miwok Indians
Ms.Pamela Baumgartner, Tribal Administrator
PO Box 1190
Ione, CA 95840

Dear Ms.Baumgartner:

Peak & Associates, Inc. has contracted with Foothill Associates, Inc., to perform a cultural resources assessment of parts of the Sunrise-Douglas Planned Community in Sacramento County. The overall project area, including planned improvements of Sunrise Boulevard, is depicted on the enclosed maps. We have performed surveys of parts of this area several years ago. We are now contracted to complete the coverage. Since the older surveys were conducted beore Native American consultation was commonplace, we are requesting information on the entire project area.

We are contacting individuals identified by the Native American Heritage Commission as persons who might have information to contribute regarding potential Native American concerns in the project area. Any information or concerns that you may have regarding village sites, traditional properties or modern Native American uses in any portion of the project vicinity will be welcomed. If you know other individuals who are familiar with the vicinity, we would welcome this information as well.

We recognize that much of the information about protected and sacred sites may be confidential within your community and cannot be shared with those outside of your community. We will work with you to minimize impact on your cultural resources. Please contact me to discuss how we can accomplish protection of your cultural resources within your limits of confidentiality and the needs of the project. Any confidential information you share will be kept confidential, so long as you make it clear which information is confidential and to what extent. We will have to communicate to our client that an area must be avoided, but we do not have to go into detail as to why.

Thank you for your assistance.

Sincerely,

Robert A. Gerry
Consulting Archeologist

RG//
Encl.

■ 3941 Park Drive, Suite 20-329, El Dorado Hills, CA 95762/Phone: (916)939-2405/Fax: 939-2406/email: peakinc@jps.net
□ 3161 Godman Avenue, Suite A, Chico, CA 95973/Phone: (530)342-2800/Fax: 342-0273/email: peakinc@cmc.net

PEAK & ASSOCIATES, INC.
CONSULTING ARCHEOLOGY

October 29, 2004

Ione Band of Miwok Indians
Mr.Glenn Villa, Sr., Cultural Committee
PO Box 1132
Ione, CA 95840

Dear Mr.Villa:

Peak & Associates, Inc. has contracted with Foothill Associates, Inc., to perform a cultural resources assessment of parts of the Sunrise-Douglas Planned Community in Sacramento County. The overall project area, including planned improvements of Sunrise Boulevard, is depicted on the enclosed maps. We have performed surveys of parts of this area several years ago. We are now contracted to complete the coverage. Since the older surveys were conducted beore Native American consultation was commonplace, we are requesting information on the entire project area.

We are contacting individuals identified by the Native American Heritage Commission as persons who might have information to contribute regarding potential Native American concerns in the project area. Any information or concerns that you may have regarding village sites, traditional properties or modern Native American uses in any portion of the project vicinity will be welcomed. If you know other individuals who are familiar with the vicinity, we would welcome this information as well.

We recognize that much of the information about protected and sacred sites may be confidential within your community and cannot be shared with those outside of your community. We will work with you to minimize impact on your cultural resources. Please contact me to discuss how we can accomplish protection of your cultural resources within your limits of confidentiality and the needs of the project. Any confidential information you share will be kept confidential, so long as you make it clear which information is confidential and to what extent. We will have to communicate to our client that an area must be avoided, but we do not have to go into detail as to why.

Thank you for your assistance.

Sincerely,

Robert A. Gerry
Consulting Archeologist

RG//
Encl.

■ 3941 Park Drive, Suite 20-329, El Dorado Hills, CA 95762/Phone: (916)939-2405/Fax: 939-2406/email: peakinc@jps.net
□ 3161 Godman Avenue, Suite A, Chico, CA 95973/Phone: (530)342-2800/Fax: 342-0273/email: peakinc@cmc.net

PEAK & ASSOCIATES, INC.
CONSULTING ARCHEOLOGY

October 29, 2004

Miwok Indian Community of the Wilton Rancheria
Mr. Clifford McKean
9301 Rancheria Drive
Wilton, CA 95693

Dear Mr. McKean:

Peak & Associates, Inc. has contracted with Foothill Associates, Inc., to perform a cultural resources assessment of parts of the Sunrise-Douglas Planned Community in Sacramento County. The overall project area, including planned improvements of Sunrise Boulevard, is depicted on the enclosed maps. We have performed surveys of parts of this area several years ago. We are now contracted to complete the coverage. Since the older surveys were conducted beore Native American consultation was commonplace, we are requesting information on the entire project area.

We are contacting individuals identified by the Native American Heritage Commission as persons who might have information to contribute regarding potential Native American concerns in the project area. Any information or concerns that you may have regarding village sites, traditional properties or modern Native American uses in any portion of the project vicinity will be welcomed. If you know other individuals who are familiar with the vicinity, we would welcome this information as well.

We recognize that much of the information about protected and sacred sites may be confidential within your community and cannot be shared with those outside of your community. We will work with you to minimize impact on your cultural resources. Please contact me to discuss how we can accomplish protection of your cultural resources within your limits of confidentiality and the needs of the project. Any confidential information you share will be kept confidential, so long as you make it clear which information is confidential and to what extent. We will have to communicate to our client that an area must be avoided, but we do not have to go into detail as to why.

Thank you for your assistance.

Sincerely,

Robert A. Gerry
Consulting Archeologist

RG//
Encl.

■ 3941 Park Drive, Suite 20-329, El Dorado Hills, CA 95762/Phone: (916)939-2405/Fax: 939-2406/email: peakinc@jps.net
□ 3161 Godman Avenue, Suite A, Chico, CA 95973/Phone: (530)342-2800/Fax: 342-0273/email: peakinc@cmc.net

PEAK & ASSOCIATES, INC.
CONSULTING ARCHEOLOGY

October 29, 2004

Sierra Native American Council
Mr. Dwight Dutschke, Chairperson
PO Box 12045
Ione, CA 95640

Dear Mr. Dutschke:

Peak & Associates, Inc. has contracted with Foothill Associates, Inc., to perform a cultural resources assessment of parts of the Sunrise-Douglas Planned Community in Sacramento County. The overall project area, including planned improvements of Sunrise Boulevard, is depicted on the enclosed maps. We have performed surveys of parts of this area several years ago. We are now contracted to complete the coverage. Since the older surveys were conducted beore Native American consultation was commonplace, we are requesting information on the entire project area.

We are contacting individuals identified by the Native American Heritage Commission as persons who might have information to contribute regarding potential Native American concerns in the project area. Any information or concerns that you may have regarding village sites, traditional properties or modern Native American uses in any portion of the project vicinity will be welcomed. If you know other individuals who are familiar with the vicinity, we would welcome this information as well.

We recognize that much of the information about protected and sacred sites may be confidential within your community and cannot be shared with those outside of your community. We will work with you to minimize impact on your cultural resources. Please contact me to discuss how we can accomplish protection of your cultural resources within your limits of confidentiality and the needs of the project. Any confidential information you share will be kept confidential, so long as you make it clear which information is confidential and to what extent. We will have to communicate to our client that an area must be avoided, but we do not have to go into detail as to why.

Thank you for your assistance.

Sincerely,

Robert A. Gerry
Consulting Archeologist

RG//
Encl.

■ 3941 Park Drive, Suite 20-329, El Dorado Hills, CA 95762/Phone: (916)939-2405/Fax: 939-2406/email: peakinc@jps.net
□ 3161 Godman Avenue, Suite A, Chico, CA 95973/Phone: (530)342-2800/Fax: 342-0273/email: peakinc@cmc.net

PEAK & ASSOCIATES, INC.
CONSULTING ARCHEOLOGY

October 29, 2004

Wilton Rancheria
Ms. Mary Daniels-Tarango
7916 Farnell Way
Sacramento, CA 95823

Dear Ms. Daniels-Tarango:

Peak & Associates, Inc. has contracted with Foothill Associates, Inc., to perform a cultural resources assessment of parts of the Sunrise-Douglas Planned Community in Sacramento County. The overall project area, including planned improvements of Sunrise Boulevard, is depicted on the enclosed maps. We have performed surveys of parts of this area several years ago. We are now contracted to complete the coverage. Since the older surveys were conducted beore Native American consultation was commonplace, we are requesting information on the entire project area.

We are contacting individuals identified by the Native American Heritage Commission as persons who might have information to contribute regarding potential Native American concerns in the project area. Any information or concerns that you may have regarding village sites, traditional properties or modern Native American uses in any portion of the project vicinity will be welcomed. If you know other individuals who are familiar with the vicinity, we would welcome this information as well.

We recognize that much of the information about protected and sacred sites may be confidential within your community and cannot be shared with those outside of your community. We will work with you to minimize impact on your cultural resources. Please contact me to discuss how we can accomplish protection of your cultural resources within your limits of confidentiality and the needs of the project. Any confidential information you share will be kept confidential, so long as you make it clear which information is confidential and to what extent. We will have to communicate to our client that an area must be avoided, but we do not have to go into detail as to why.

Thank you for your assistance.

Sincerely,

Robert A. Gerry
Consulting Archeologist

RG//
Encl.

■ 3941 Park Drive, Suite 20-329, El Dorado Hills, CA 95762/Phone: (916)939-2405/Fax: 939-2406/email: peakinc@jps.net
□ 3161 Godman Avenue, Suite A, Chico, CA 95973/Phone: (530)342-2800/Fax: 342-0273/email: peakinc@cmc.net

APPENDIX D.2

The Ranch Updated Cultural Resources Inventory and Evaluation, Rancho Cordova, Sacramento County, California

THE RANCH

Updated Cultural Resources Inventory and Evaluation Rancho Cordova, Sacramento County, California

Section 16, T. 8N, R. 7E MDM
Buffalo Creek 7.5' USGS Quadrangle
Approximately 530 Acres

Prepared By
Ric Windmiller
Archaeologist

with a Contribution by
Dana Supernowicz
Architectural Historian

Windmiller Consulting, Inc.
2280 Grass Valley Hwy #205
Auburn, California 95603

Prepared For

Foothill Associates, Inc.
590 Menlo Drive #5
Rocklin, California 95765

June, 2018

Management Summary

The Ranch is a proposed 530-acre mixed use community in the south portion of the City of Rancho Cordova, Sacramento County, California. The Ranch lies on the east side of Jaeger Road, south of Douglas Road, one mile east of Sunrise Boulevard and one mile west of Grant Line Road.

As a Clean Water Act, Section 404 permit is required for the undertaking, the U.S. Army Corps of Engineers must initiate a National Historic Preservation Act, Section 106 consultation in an effort to avoid harm to any historic properties listed in or eligible for the National Register of Historic Places.. Twelve years have elapsed since the previous cultural resources inventory and evaluation. To conform with current Corps requirements, an updated records search, current Native American and historical society contacts, field work to document current conditions and an updated, stand-alone technical report are required.

In an updated effort to identify historic properties listed on or eligible for the National Register, the present study included an updated records search by the North Central Information Center, California Historical Resources Information System, a review of recent satellite images of the project area, a review of previous studies in the project vicinity, an updated sacred lands file search by the Native American Heritage Commission, contact with tribes listed by the commission, contact with historical societies, on-line searches and a field survey along widely spaced transects to evaluate the adequacy of the previous study. In addition, an architectural historian who meets the Secretary of the Interior's professional qualifications standards assessed the National Register eligibility of the high voltage electrical transmission towers and lines that now may meet the 50 year threshold for eligibility.

As a result of these efforts, only one cultural resource was identified during the study: the two parallel alignments of high voltage electrical transmission towers and lines located in The Ranch Area Potential Effects. Designated P-34-5210 by the North Central Information Center, the transmission towers and lines were assessed as not eligible for the National Register individually or as contributing resources of a historic district under any criterion of eligibility. The study concludes that no historic properties will be affected by the proposed undertaking.

Contents

Management Summary i
Introduction 1
Project Description 1
The Undertaking 3
Area of Potential Effects 3
Literature Review 3
Environment 5
Prehistory 5
Ethnography 7
History 9
Records Search Results 11
Native American and Historical Society Coordination 12
Research Methods 13
Description of Cultural Resources 14
Prehistoric Resources 14
Historic Resources 14
Assessment of Eligibility 14
Prehistoric Resources 15
Historic Resources 15
Assessment of Effect 16
References Cited 16
Appendix A: Other Figures 20
Appendix B: Records Search Results 23

Appendix C: Native American and Historical Society Coordination 52

Appendix D: Confidential Location of Cultural Resources 62

Appendix E: Confidential Record Forms 64

List of Figures

Figure 1. Project location and vicinity 2

Figure 2. Area of Potential Effects 4

Figure 3. Looking east across APE towards Grant Line Road 21

Figure 4. Looking west across APE towards Sunrise Boulevard 21

Figure 5. Looking north across APE towards Douglas Road 22

Figure 6. Looking south across APE towards Grant Line Road and Jackson Road 22

Figure 7. Confidential location of cultural resources 63

List of Tables

Table 1. Native American and historical society contacts 53

Introduction

The Ranch is a proposed 530-acre mixed use community in the south portion of the City of Rancho Cordova, Sacramento County, California. The Ranch lies on the east side of Jaeger Road, south of Douglas Road, one mile east of Sunrise Boulevard and one mile west of Grant Line Road (see Figure 1, below).

In 2005, Peak & Associates, Inc. conducted a cultural resources inventory and evaluation of the "Jaeger 530," now known as, "The Ranch." The Peak & Associates study included a a records search at the North Central Information Center, detailed historic context based on archival research, a sacred lands file search by the Native American Heritage Commission, an attempt to contact Native Americans listed by the commission, and a field survey. The study concluded that no prehistoric or historic period resources were located within the project area.(Peak 2005b:12).

As a Clean Water Act, Section 404 permit is required for the undertaking, the U.S. Army Corps of Engineers will initiate a National Historic Preservation Act, Section 106 consultation. Twelve years have passed since the Peak & Associates study. To conform with current Corps requirements, an updated records search, updated Native American and historical society contacts and field work to document the current conditions were completed, the results of which follow in this stand-alone report.

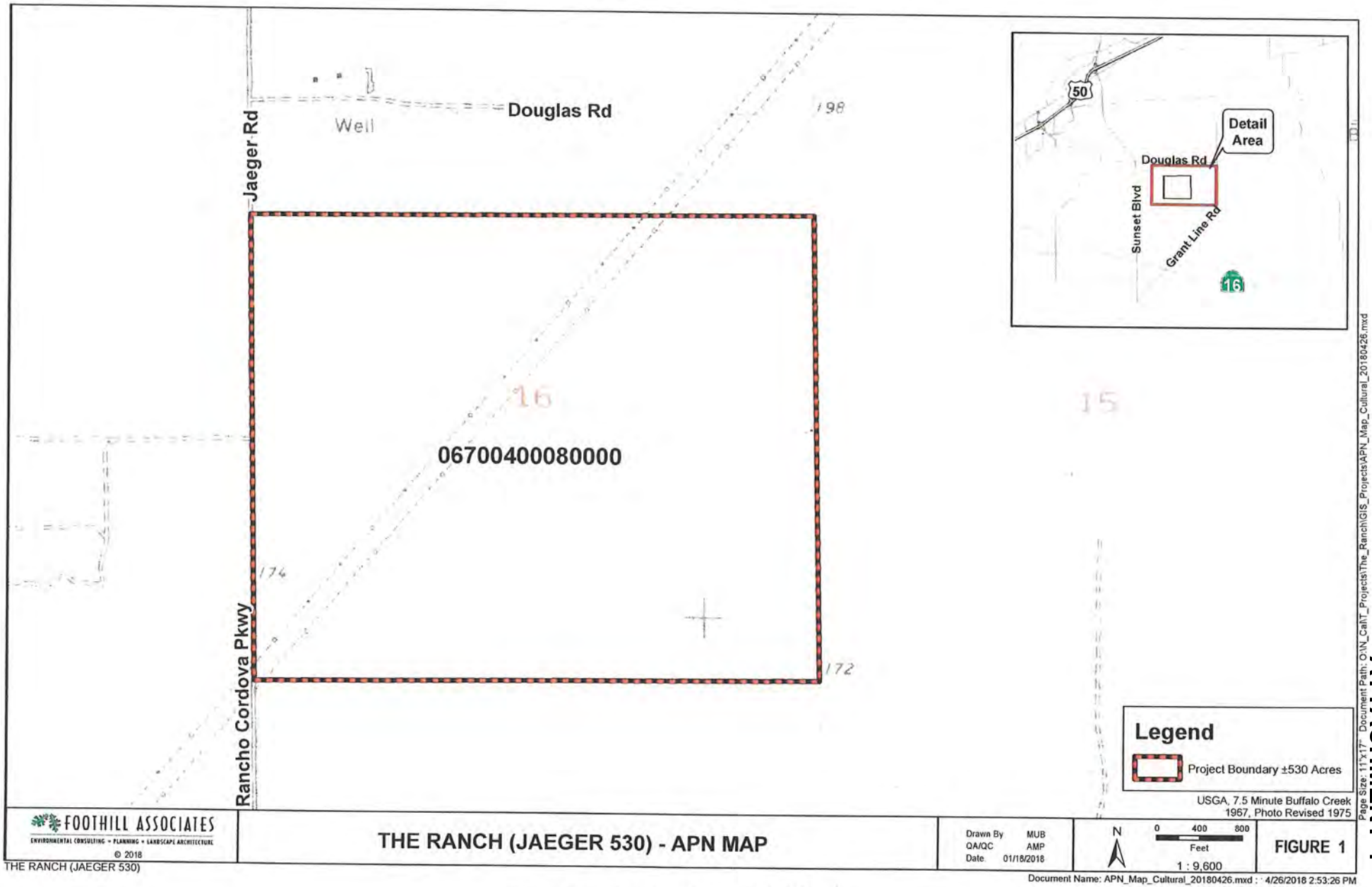
Project Description

The proposed project will be a mixed-use community in the City of Rancho Cordova consisting of low- to high-density residential development, neighborhood parks and mixed-use commercial development. In addition, the expansion of Chrysanthy Boulevard is a vital west-east connector street within the City of Rancho Cordova. Land uses proposed by The Ranch Project are consistent with the land use designations identified by the *Rancho Cordova General Plan*, under the land use authority of the City of Rancho Cordova. The project is located and configured to use infrastructure extensions of the Sunridge Specific Plan area, including sewer mains, sewer trunk lines, gas and electric mains and water mains.

The applicant proposes development of 1,266-1,300 units, including 642 gated single-family active adult units with a club house, and 634-658 conventional single-family units. In addition, six acres are dedicated for commercial use per the City of Rancho Cordova General Plan and five acres are currently reserved for multi-family residential (apartments) in accordance with the City of Rancho Cordova's Affordable Housing Plan. A network of bicycle and pedestrian trails (four acres) will be incorporated into the land plan and provide connectivity from existing Anatolia Bike Trail to the west and south to the proposed middle and high school campuses located directly south of the project site. A grade separated pedestrian/bicycle crossing (at Chrysanthy) is proposed within the PG&E easement.

In addition to development, the proposed project will preserve approximately 198 acres of the parcel in an on-site open space/wetland preserve that will be deeded to a third-party conservation entity to be maintained in perpetuity. The applicant will incorporate protections for the preservation of wetland resources within the preserve, including preserve fencing, long-term funding and management of the preserve in perpetuity and protection of the preserve from drainage and runoff generated from development areas through the construction of several proposed detention basins in the development.

Onsite infrastructure associated with the project will include the construction of internal access roads, the proposed alignment of Chrysanthy Boulevard bisecting the project site, connecting to the current termini of Chrysanthy Boulevard. In addition, Rancho Cordova Parkway will be widened to four lanes. The proposed



ATTACHMENT 4

Figure 1. Project location and vicinity.

North Campus Road located along the southern boundary will be constructed as required by the City of Rancho Cordova. The improvements will include outside lane, curb, gutter and detached sidewalk along the residential frontage.

A total of 21.53 acres of jurisdictional aquatic resources have been mapped within the project site including 2.92 acres of depressional seasonal wetlands, 15.04 acres of vernal pools, 1.66 acres of riverine seasonal wetlands, 0.06 acres of riverine seasonal wet swales, 1.54 acres of intermittent drainages, and 0.30 acres of drainage basin out-falls. The U.S. Army Corps of Engineers issued a Preliminary Jurisdictional Determination on October 14, 2014 concurring with the 21.53 acres of aquatic resources mapped with the project site.

As proposed, project development will result in the fill of 6.37 acres of aquatic resources including 1.056 acres of depressional seasonal wetlands, 4.752 acres of vernal pools, 0.507 acres of riverine seasonal wetlands, and 0.059 acres of riverine seasonal wet swales . A total of 0.01 acre of temporary impacts will occur associated with utility placement with a spanned crossing along Chrysanthy Boulevard.

Approximately 20,554 cubic yards of clean fill will be placed in 6.37 acres of waters of the U.S. in order to accommodate construction of the proposed development using various types of standard construction equipment, including scrapers, bulldozers, and excavators.

The Undertaking

Since the project would affect waters of the United States, the project proponent must meet requirements of Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act, and therefore, is seeking a permit from the U.S. Army Corps of Engineers, Sacramento District.

Area of Potential Effects

The geographic Area of Potential Effects (APE) for The Ranch is the entire 530 acres (see Figure 2,below).

The viewshed from the APE includes a recent residential subdivision immediately adjacent to the north side of the APE, a partially built-out residential subdivision along the west side of the APE, and agricultural grazing land on the south and east. A Pacific Gas & Electric Company/Sacramento Municipal Utilities District (SMUD) easement crosses the APE northeast to southwest (see Appendix A: Other Figures).

Maximum anticipated depth of excavation is 25 feet for sewer trenching. This maximum depth will be the vertical (depth) APE. Depth of excavation for water lines will be four feet below finished grade. Drainage will be 5-6 feet. The ponds will be 17, 8 and 13 feet in depth. The above ground vertical APE was not available. However, no historic properties whose eligibility for the National Register of Historic Places would be impaired by above-ground construction were identified within the geographic APE.

Literature Review

The literature review included an updated records search by the North Central Information Center, California Historical Resources Information System, review of published and unpublished literature in the Windmiler Consulting, Inc. library as well as on-line Internet research and contact with knowledgeable others..

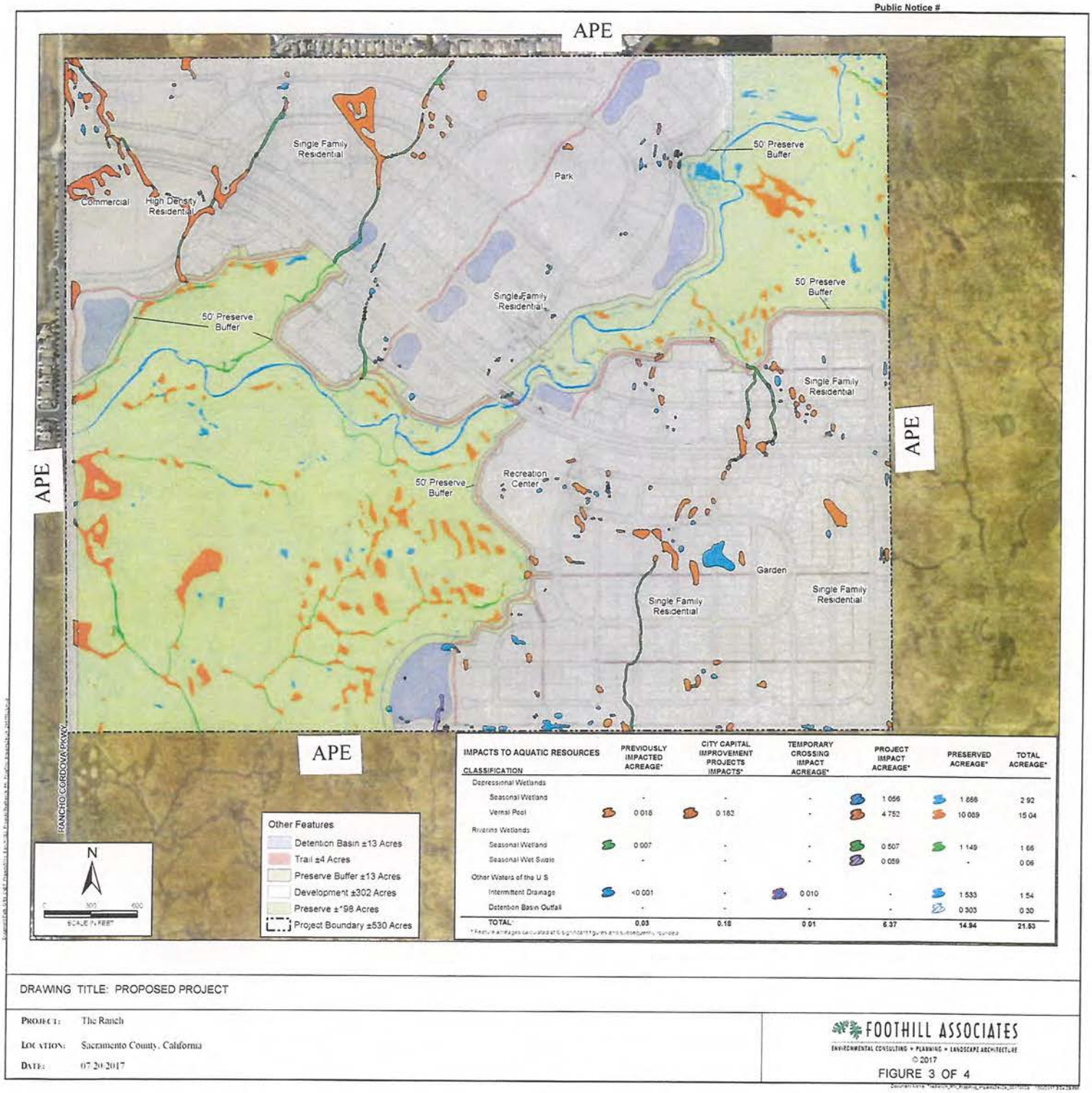


Figure 2. Area of Potential Effects (APE) with development plan and wetlands overlays.

Environment

The Ranch lies on treeless grassland near the eastern edge of the Sacramento Plains. Elevation of the APE varies between approximately 170 and 210 feet above mean sea level. The flat to hilly terrain is crossed northeast to southwest by a meandering seasonal drainage that joins the Morrison Creek drainage system several miles to the west. The Ranch is underlain with consolidated allluvial deposits of the Tertiary Laguna Formation; water worn gravel and cobbles are exposed in the shallow seasonal stream that crosses The Ranch northeast to southwest (Wagner *et al.* 1981).

The American River lies six miles to the north near Folsom. The Cosumnes River bends towards the Sierra foothills three miles to the southeast. The present climate is Mediterranean: summers are hot and rainless, while winters are cool, often with low (tule) fog and 6-20 inches rainfall (Storer and Usinger 1963:26).

Prehistory of the Sacramento Plains and North Delta Region, 10,000 B.C.-A.D. 1830

Three miles southeast of The Ranch lies the Cosumnes River drainage where archaeologists first began defining the culture sequence of Sacramento Valley human prehistory. The earliest evidence of Man along the Cosumnes drainage may be represented by the basal portion of a fluted obsidian Clovis-like projectile point found by the writer in the early1960s at the Windmiller Mound (CA-SAC-107).

In 1979, Peak and Associates began excavations at two ancient sites in the Calero Basin near Rancho Murieta, approximately nine miles east of The Ranch. Peak and Associates' archaeologist speculated that the Rancho Murieta sites, CA-SAC-370 and CA-SAC-379 date back to the late Pleistocene of 18,000 to 12,000 years before the present. However, it seems more likely that they belong to the later Western Pluvial Lakes Tradition. Both sites are stone quarry/workshop and possibly camp sites where native people fashioned chipped stone tools from the green chert bedrock and from water-worn cobbles of the Mehrten Formation (Peak 1981:70).

The Western Pluvial Lakes Tradition was an adaptation of ancient cultures to lake, marsh and grassland habitats along the eastern side of the Sierra Nevada as early as 11,000 years before the present (Moratto 1984:90-91). The development of the Western Pluvial Lakes Tradition and its regional variants may, as Moratto suggested, correspond to the emergence and initial differentiation of Hokan languages (1984:544).

The suspected antiquity of the Calero Basin sites created a large temporal gap between the earliest use of the Cosumnes drainage and the earliest sedentary occupation dating back to the Middle Archaic–a gap in prehistory of at least 5500 years about which practically nothing is known in this region of northern California.

The gap may be filled in part by finds such as the artifact-bearing layer exposed in the banks of Arcade Creek in North Sacramento. There, erosion exposed an artifact-bearing layer buried under nine feet of alluvium (Curtice 1961:20-25). Another example may be the Crevis Creek finds–chipped stone artifacts occurring in the gravels of Crevis Creek, eight miles east of The Ranch and close to the Calero Basin finds.

The type site for the Middle Archaic culture is located approximately 12 miles south southeast of The Ranch. Named the "Windmiller Mound" after the landowner, the site's antiquity spans approximately 4500-5500 years (*cf.* Heizer 1974:192-193 and Rosenthal *et al.* 2007:150). Like many other prehistoric archaeological sites of the lower Cosumnes bottomlands within the valley proper, the Windmiller Mound is situated on a natural clay knoll above seasonal flood waters.While Archaic period village sites and cemeteries of all ages are most common along the Cosumnes River (approximately six sites per linear mile), they do occur near other

water sources such as springs, seasonal tributaries and sloughs.

The natural drainage system of The Ranch locality transports water in a southwesterly direction ultimately to a series of lakes on the east side of the Sacramento River. The drainage system is known as the Morrison Creek Stream Group Basin. The lakes, Beach Lake and North and South Stone lakes were home to several historic groups of Miwok-speaking people whose villages were perched on natural clay knolls or natural river levees above seasonal flooding. In a four square mile area where Morrison Creek approaches the Sacramento River, archaeologists have identified eight such village mounds, each of which has probably been occupied at various times over a period of several thousand years.

In 1974, archaeologist Jerald J. Johnson conducted an archaeological field survey of the Morrison Creek Stream Group from the lakes along the Sacramento River to Mather Air Force Base, the east boundary of which lies one mile west of The Ranch (Johnson 1974).

By far the majority of Native American archaeological sites documented by Johnson were located around the lakes next to the Sacramento River far to the southwest of The Ranch (Johnson 1974:6 and maps).

Since Johnson's mid-1970s survey, archaeologists continued to survey large tracts of land on the Sacramento Plains between the American and Cosumnes rivers with few discoveries. A 1985 survey of Mather Air Force Base by the Archaeological Study Center, California State University, Sacramento, resulted in no finds (McIvers 1985).

A subsequent survey by EDAW, Inc. of 1041 acres resulted in no prehistoric archaeological finds (EDAW, Inc. 1991:13). In 2008, Sean Jensen conducted a survey at the edge of the Morrison Stream group, but found only six flakes of basalt and one flake of chert (Jensen 2008:10). Also in 2008, Far Western Anthropological Research Group conducted a survey along State Route 16, but found no prehistoric or historic Native American artifacts (Leach-Palm *et al.* 2008).

In 2009, Windmiller conducted a survey of 800 acres immediately north of State Route 16 and found no prehistoric or historic Native American archaeological resources (Windmiller and Osanna 2009:i).

The lack of reported surface finds in the region seems to reinforce the notion that the Sacramento Plains between the Cosumnes and American rivers was not a focus of Native American settlement or that archaeologists have not yet discovered the uses to which such lands were placed in prehistory.

From the larger regional perspective, linguists have long held that in early times, the northern part of the state was largely Hokan territory. Before 2000 B.C., speakers of Hokan languages left traces of their presence in early archaeological sites of the valley-foothills edge such as the stone tool quarry and campsites of the Calero Basin.

By 2500 B.C., however, Penutian-speaking peoples may have entered the lower Sacramento Valley. There is some empirical evidence to link the Middle Archaic Windmiller culture of the Cosumnes District to prehistoric cultures of the Great Basin and Plateau physiographic provinces. In his synthesis of California archaeology, Michael Moratto suggested that people of Penutian stock settled in the Stockton and Cosumnes districts. However, the languages spoken were not necessarily pre-Miwok or Costanoan. Soon after 2000 B.C., Moratto indicated that these Penutian language speakers expanded their sphere of influence westward to the East Bay where they came into contact with the older Hokan-speaking population (Moratto 1984:553).

Moratto suggested that there was a kind of fusion between the two language groups resulting in what is recognized in the archaeological record as the Berkeley Pattern. Moratto built a case for the entry of pre-

Yokutsan speakers into Central California after the proto-Miwok began to spread into the Bay Area. Moratto guessed that pre-Yokutsan people settled the delta and northern San Joaquin Valley between 1500 and 1000 B.C. Moratto further speculated that the pre-Yokutsan culture may have incorporated many traits of the Windmiller Pattern before settling the San Joaquin Valley and, by 500 B.C., the Central Sierra foothills (Moratto 1984:555).

The penetration of Wintuan-speaking people into northern California from Oregon 1100-1000 years ago coincided with the beginning of the Augustine Pattern in the Central Valley and use of the bow and arrow among the indigenous people (Moratto 1984:562-563).

While the Wintuan incursion appears to have caused the retreat of other peoples from the valley both eastward and westward, climate change also affected resident populations. Around A.D. 400 at the beginning of a warm and dry interval, Yokutsan-speaking people may have abandoned marginal areas in the valley and foothills and moved to more reliable water sources at higher elevations or along major streams and sloughs (Moratto 1984:564).

Between A.D. 1430 and 1850, relatively cool and moist conditions may have encouraged population growth in groups associated with the Augustine Pattern. Population shifts during this period resulted in the pattern of native settlements seen by early European explorers.

A recent updated synthesis of Central Valley archaeology notes little new information in areas such as the Cosumnes drainage due to few new investigations and the inadequacy of older collections in meeting the needs of current research objectives. However, researchers have taken the cultural periods, above, and updated the time span of each period based on new radiocarbon determinations adjusted with modern calibration curves (Rosenthal *et al.* 2007:150):

Paleo-Indian (11,550-8550 cal B.C.)
Lower Archaic (8550-5550 cal B.C.)
Middle Archaic (5550-550 cal B.C.)
Upper Archaic (550 cal B.C.-cal A.D. 1100)
Emergent (cal A.D. 1100-Historic)

With a long-standing focus on prehistoric cultures, archaeologists largely ignored Native American settlements of the historic period. The exception was James A. Bennyhoff and his doctoral dissertation, *Ethnogeography of the Plains Miwok*. Using the results of earlier archaeological excavations, historical documents and revisiting the archaeological sites himself, Bennyhoff succeeded in linking historic events to specific Indian village sites and defined the physical territories within which the incipient chiefdoms or "tribelets" of the historic Miwok Indians lived, hunted, fished and gathered (Bennyhoff 1977).

Ethnography/Ethnohistory of the Sacramento Plains-North Cosumnes, 1806-1912

The Ranch lies almost midway between the former homeland of the Maiduan speaking Nisenan along the American River and the *Amuchamne* tribelet of Miwok speakers along the Cosumnes River (Bennyhoff 1977:47, Map 2). The Ranch is probably more within the former range of the northern Cosumnes tribelet than the Nisenan of the American River.

The Plains Miwok were recognized as a distinct language group as early as 1806 when Spanish explorers first entered the region (Bennyhoff 1977:1). The term, "Miwok" is the word for "person" in Northern Miwok as reported by Powers in his 1877 work on California Indians (Powers 1877:347 quoted in Bennyhoff 1977:53).

It is important to understand that according to historical and ethnographic accounts, Miwok-speaking people did not recognize a "Plains Miwok Society." The largest sociopolitical group was the "tribelet."

In his early, definitive ethnographic work on California Indians, anthropologist Alfred Kroeber asserted that most northern California groups did not have true tribes, rather the distinction was between village communities or "tribelets." The term, "village community" implied a tract of land rather than a settlement. Generally, the population of a village community was divided between several settlements, each consisting of a few households. The principal village was maintained on a permanent basis, while subsidiary hamlets were frequently abandoned, re-occupied or newly founded (Kroeber 1925:831).

On a day to day basis, the lineage was the most important political and economic unit. Lineages consisted of men related through the male line of descent, their wives and children. Miwok lineages were associated with a specific place (locality) such as a tribelet's permanent settlements.

Miwok-speaking people were hunter-fisher-gatherers. Large game hunted by the native people included deer, antelope and tule elk. Gathering of wild plant foods varied with the seasons. Greens were gathered in the spring, while seeds were harvested from May through August. The major staple, acorns, were gathered in the fall. While the Miwok were not agriculturalists nor practiced in animal husbandry, they did cultivate tobacco to a limited extent and they kept dogs (Levy 1978:403).

Housing included pole and thatch structures, semisubterranean earth-covered lodges, a sweathouse built over a pit, menstrual hut and acorn granaries.

Each tribelet was named after its principal settlement. The principal settlement usually included an assembly house, often a large, circular semi-subterranean, earth-covered lodge. The assembly house was the location for all important religious ceremonies and major social events (Levy 1978:410).

The *Amuchamne* tribelet was the northernmost tribelet on the Cosumnes River drainage within the boundaries of the Sacramento Valley. Bennyhoff reported that the Sheldon map of 1847 illustrated the tribelet center a short distance south of Sloughhouse at a sharp bend in the river. CA-SAC-126 was tentatively identified by Bennyhoff as the tribelet center. While glass beads found at the site date only to the Mission Period, the existing artifact collection was incomplete and Bennyhoff's test excavations may have missed the historic cemetery that would have confirmed Sutter period use of the site (Bennyhoff 1977:105).

Historical documents indicate that *Amuchamne* was a major Plains Miwok tribelet, second only to *Cosumne.* Bennyhoff suggested that *Amuchamne* may have been the leading group of cooperating tribelets that resisted foreign contacts. Missionization of the *Amuchamne* people began in 1834-1835. However, only seven baptisms were recorded at that time. The population of the *Amuchamne* was depleted by the 1833 epidemic, which may in addition to resistence account for the low number of subsequent baptisms (Bennyhoff 1977:103-104).

By 1847, the *Shalachmushumne* may have moved upstream to the *Amuchamne* village to strengthen resistence to Nisenan intrusion into Miwok territory, which was driven by Sutter's desire for empire and Sheldon's use of Nisenan Indian labor on his ranch.

Amuchamne was the only organized Cosumnes River Miwok village to survive the gold rush. Sheldon's brother-in-law and partner, William Daylor, and Daylor's partner in a store and ferry on the Cosumnes and the road to the Southern Mines, William Grimshaw, traded with the Indians living in *rancherias* on Sheldon's *Rancho Omochumnes*. According to *Grimshaw's Narrative*, after Daylor died of Cholera in October, 1850, the few remaining Indians left their villages and never returned (Kantor 1964:25).

According to Bennyhoff, sometime between 1850 and 1870, the people of *Amuchamne* moved their village to the outskirts of Elk Grove. By 1870, the native people had built a dance house at the Elk Grove village, which became a principal dance center for the Plains Miwok. The *Amuchamne* exchanged dances with Nisenan villages near Sacramento (Bennyhoff 1977: 106). The Elk Grove dance house may have been the large circular dance house floor accidentally discovered at CA-SAC-134 during some agricultural grading 30-40 years ago.

We do not know precisely where the *Amuchamne* village was at Elk Grove. By 1890, *Amuchamne* descendants were apparently leaving the village to take jobs as farm laborers. In1912, avocational archaeologist Elmer Dawson removed six burials from CA-SAC-1, a shallow midden located three miles southeast of Elk Grove. Bennyhoff concluded that the graves dated to "the full American period" and were probably part of a cemetery used by the *Amuchamne* village at Elk Grove (Bennyhoff 1977:106-107).

History of Lee Township Border Area, 1840-1967

The Ranch lies on the Sacramento Plains in Lee Township. Two Mexican land grants took up portions of Lee Township between the Cosumnes River on the southeast and Folsom on the north. Sheldon's grant took up land on the west side of the Cosumnes River. Leidesdorf's grant took up land immediately north of The Ranch and extended to the American River (Reed 1923:121).

Other than early Spanish expeditions, most of which were launched to recruit neophytes for the missions, one of the earliest Europeans to cross the vicinity of The Ranch was William Daylor. History recounts the adventure of Daylor, who, one summer evening in 1840, rode to the top of a hill overlooking the Cosumnes River in search of Sutter's stray cattle. He found the verdant valley densely populated with Indians. Upon this observation, he returned to Sutter's Fort to report this finding to his friend, Jared Sheldon, who was also in Sutter's employ. Realizing the valley's agricultural potential, Sheldon and Daylor formed a partnership and secured a grant of the valley through their friend, E.P. Hartnell, who was Secretary of State and Interpreter for California's Mexican government (Reed 1923:121-122).

Daylor settled on the grant, while Sheldon bartered his labor for cattle from John Marsh of the present day Brentwood area. Daylor with the assistance of local Indians planted wheat. By 1847, Sheldon and Daylor constructed a dam and a grist mill on the Cosumnes. Upon the discovery of gold in 1848, Sheldon, Daylor and McCoon, along with a contingent of local Indians, established a mining camp at Webber Creek in the Placerville vicinity. By June that year, William Grimshaw partnered with Daylor and opened a store and Indian trading post at Daylor's ranch at Cosumne near present day Sloughhouse. The trading post was on the Jackson Road, which in those days was a wagon road from Sutter's Fort to the Southern Mines. Built on this historic route, Jackson Road (State Route 16) today lies 2.5 miles south of The Ranch.

Historian Melinda Peak traced the early ownership of The Ranch to Louis Lepetit, who owned several tracts of land including all of Section 16 (The Ranch) in Township 8 North, Range 7East. In 1880, George F.Jaeger purchased Section 16. The only improvements at that time appear to have been fencing (Peak 2005:10).

Jaeger was a native of Germany, born in 1840. His family immigrated to the United States in 1845. The first record of Jaeger in California is his marriage to Emma Henrietta Reese in 1875 in El Dorado County. The 1880 census listed George Jaeger as a 38 year old miner with his wife Emma, 23 and their one-year old daughter, Etta (Peak 2005:10).

The 1888-1889 County Directory listed Jaeger at Cosumne. The 1892 Register of Voters listed Jaeger at Michigan Bar. But, by 1900, the family was listed on the ranch in Lee Township. By this time, Etta was a 21

year old bookkeeper at a drugstore and she, along with Jaeger's 12-year old twin girls lived with George and his wife, Emma (Peak 2005:10).

The Jaeger family raised hay and livestock, although their operation apparently did not include seasonal driving of livestock to summer pastures in the Sierra Nevada, as was practiced by other ranching families in the region (*viz.*, Wilsons, Joergers, Fornis and Windmillers).

The 1910 Official Map of Sacramento County illustrates Section 16 as the Estate of George F. Jaeger. During his active years as a rancher, Jaeger's home appears to have been in Section 9, immediately north of Section 16. In 1905 or 1906, the family moved to 1523 F Street in Sacramento. George Fredrick Jaeger died in 1907 at the age of 66. A final accounting of his estate showed that Jaeger owned four houses in Sacramento, a 414-acre ranch in Florin, and another 200 acres in addition to his 850-acre main ranch. He had sold his El Dorado County land to Alex Forni, which brought his net worth to over $37,000. Section 16 remained as part of the estate until at least 1923 (Peak 2005:11).

The 1910 Official Map of Sacramento County shows that Jaeger's neighbors in the vicinity of Section 16 included Joseph Joerger, Katherin G. Sweet and W.F. Sperry (County of Sacramento 1910).

Another neighbor during the same period was the Natomas Company of California, which owned a checkerboard of properties in the township. The bank failures, collapse of mining ventures and failure of many new developing industries in the 1870s prompted the Natomas Company to shift to agricultural development. The Natomas Company became a major influence in converting depleted mining areas to industrialized viticulture and horticulture–the precursor along with the large scale California wheat growers to modern agribusiness.

Natomas Consolidated and its successor, Natomas Company of California continued dredging, whether for gold or farmland reclamation until gold mining was stopped by order of the War Production Board at the start of World War II. After the war, the dredging business never fully recovered. The last Natomas dredge ceased operations in 1962 (Castenada *et al.* 1984:7).

Crossing The Ranch project site are two historic 230 kV electrical transmission lines and associated towers in parallel with one another. The historic context of these high voltage electrical transmission lines is rooted in the creation of the Sacramento Municipal Utility District (SMUD). In 1923, citizens voted to create SMUD as a community-owned electrical service. Years of engineering studies and legal wrangling delayed SMUD's purchase of the Pacific Gas and Electric Company's (PG&E's) local electrical system. However, in March, 1946, the California Supreme Court denied PG&E's final petition to halt the sale, and nine months later, SMUD finally began operation, acquiring much of the PG&E system in Sacramento County.

By the mid-1960s, agriculture was no longer the Sacramento Valley's largest business. New companies, such as electronics and defense industries, were moving in, changing Sacramento's profile and economy. The Port of Sacramento began handling ocean-going vessels. A major regional airport took shape in the rice fields west of Sacramento. A peach orchard near the American River was transformed into Sacramento State College. Housing subdivisions and apartment buildings were put up everywhere as the population base of SMUD customers surged to 625,000 by 1964. The Upper American River Project began providing electricity to the valley, as SMUD expanded its distribution system of electrical poles and wires.

By the mid- 1960s, 95 percent of the system had been rebuilt or newly constructed. A modern headquarters building was constructed at 62nd and S Streets in Sacramento in the late 1960s. To meet the increased demand for power in the greater Sacramento area, SMUD approved the construction of Rancho Seco, a nuclear power plant to be built on 2,100 acres in the southeastern corner of the county (Sacramento Municipal Utility District

2018).

The transmission towers of the 1920s were much like the ones installed through the 1940s-1960s, including those built by PG&E and SMUD. The towers were made of steel, riveted together with lattice and bent for support. Transmission lines were attached to the top of the tower along a slightly arched or v-shaped riveted steel lattice brace. In an electrical power grid or transmission system, the electricity first travels to a transformer at the power plant that boosts the voltage. The long thick cables of transmission lines were made of copper or aluminum because the two metals have a low resistance. At the user end of the high voltage line, transformers reduced the very high voltage to lower voltage electricity supplied to businesses and residential neighborhoods.

In 1968, leading industrial designer Henry Dreyfuss worked with engineers in southern California to produce the nation's first aesthetic transmission towers. The new towers were drastically different from those of the 1920s-1960s. The fact that numerous 1920s-1960s era towers remain standing is a testament to the design skills of the early engineers who created the lattice towers and to the contractors who erected the high voltage electrical system. Today, California is laced with thousands of *circa* 1920s-1960s steel electrical transmission towers that support many miles of transmission lines (Pacific Gas &Electric Company 2018).

Records Search Results

The North Central Information Center, California Historical Resources Information System provided a records search of The Ranch dated June 2, 2017 (NCIC File No. SAC-17-67). A search of the information center's files resulted in a finding of no cultural resources located within the project area. The search did, however, identify two previously recorded cultural resources outside of the project area, but within a one-quarter mile radius of the project site. The records search identified six previous cultural resource reports within the project area, which may have included cultural resource inventories immediately adjacent to the project's APE, though only one previous survey encompassed the APE according to the GIS map accompanying the records search. That survey was designated S-5843 by the information center and was conducted by Peak & Associates, Inc. back in 2005 (*Determination of Eligibility and Effect for the Sunbridge Park Project Area*). No cultural resources were identified on the information center's file for report S-5843 (Peak 2005a).

Also in 2005, Melinda Peak completed a report on the same property renamed, *Determination of Eligibility and Effect for the Jaeger 530 Project Area, Sacramento County, California* (Peak 2005b).

Although no cultural resources were recorded within the project APE, the records search identified the Wietsma Dairy (P-34-533) and the George Jaeger (home) ranch (P-34-1065) located within a one-quarter mile radius of the present APE.

The 1916 USGS Buffalo Creek 7.5 minute quadrangle included with the records search did not illustrate any man-made buildings or structures within the APE. However, two buildings were illustrated within a quarter mile north of the APE in the same section (Section 16). Also, a north-south road (Jaeger Road) is illustrated adjacent to the west side of the APE. An east-west road (Douglas Road) is illustrated within one-quarter mile north and east of the APE.

The 1954 USGS Buffalo Creek 7.5 minute quadrangle also does not illustrate any man-made buildings or structures within the APE. However, three small reservoirs are illustrated within one quarter mile north of the APE and Jaeger Road is illustrated adjacent to the west boundary of the APE.

As no previously recorded cultural resources were on file with the information center for the APE, the Office

of Historic Preservation's (OHP's) Archaeological Determinations of Eligibility was not searched for sites with relevant trinomial designations. Also for the same reason, OHP's Directory of Properties in the Historic Property Data File for Sacramento County was not searched by Primary Number.

Information center staff reported nothing listed in local inventories No bridges were located within the APE. Therefore, a search of the Caltrans Bridge Survey was not conducted (see Appendix B: Confidential Records Search).

Native American and Historical Society Coordination

During the last study by Melinda Peak, a search of the Native American Heritage Commission's Sacred Lands File was negative; no Native American cultural resources were identified in the file search. The commission provided Peak with a list of Native American contacts, to whom Peak sent letter. The list of contacts included the following:

- Leland Daniels
- Glenn Villa, Sr., Ione Band of Miwok Indians
- Pamela Baumgarter, Ione Band of Miwok Indians
- Clifford McKean, Miwok Indian Community of the Wilton Rancheria
- Dwight Dutschke, Sierra Native American Council
- Mary Daniels-Tarango, Wilton Rancheria

Peak received no responses from the letters (Peak 2005b:12).

On May 30, 2017, the Native American Heritage Commission responded to a request for an updated Sacred Lands File search and Native American contacts. The file search was negative. No Native American cultural resources were identified by commission staff in the immediate project area. Commission staff recommended contacting other sources for information on known and documented sites (see Appendix C: Native American and Historical Society Coordination).

Staff included a list of Native American contacts with its letter report:

- Mr. Randy Yonemura, Ione Band of Miwok Indians;
- Ms. Rhonda Morningstar Pope, Chairperson, Buena Vista Rancheria, Sacramento;
- Mr. Cosme Valdez, interim Chief Executive Officer, Nashville-Eldorado Miwok;
- Ms. Crystal Martinez, Chairperson, Ione Band of Miwok Indians;
- Mr. Grayson Coney, Cultural Director, Tsi Akim Maidu;
- Mr. Nicholas Fonseca, Chairperson, Shingle Springs Band of Miwok Indians, Shingle Springs;
- Mr. Don Ryberg, Chairperson, Tsi Akim Maidu;
- Mr. Raymond Hitchcock, Chairperson, Wilton Rancheria;
- Mr. Gene Whitehouse, Chairperson, United Auburn Indian Community of the Auburn Rancheria, Auburn.

A letter dated April 26, 2018 along with a location map was mailed to each of the above contacts describing the project and asking for volunteered information on the location of any sacred or other sites of importance to Native American tribal groups. A follow-up telephone call was made to each contact on May 8, 2018.

In a letter dated May 10, 2018 that appeared to be a standard response, Mr. Gene Whitehouse, Chairman, United Auburn Indian Community of the Auburn Rancheria (UAIC) stated that the UAIC is concerned about

development within its aboriginal territory including potential impact on the lifeways, cultural sites, and landscapes that may be of sacred or ceremonial importance. To ascertain if the project could affect cultural resources of importance to the UAIC, the UAIC would like to consult on the project. In addition, the UAIC would like to received copies of any archaeological reports, environmental documents and the opportunity to comment on the identification, assessment and mitigation related to cultural resources. The UAIC also recommends that UAIC tribal representatives observe and participate in all cultural resource surveys. The letter ended with the statement that the UAIC Preservation Committee requests a meeting or site visit and for further contact, address Mr. Marcos Guerrero, Cultural Resource Manager at UAIC. Mr. Whitehouse's letter did not identify any specific sites of Native American importance within or near the APE. No other responses from tribal contacts have been received to date (June 28, 2018).

Earlier, on May 22, 2017, an email was sent to the Sacramento County Historical Society and to the Elk Grove Historical Society. The email described the project, its location and requested information on potential historic sites that may be impacted by the proposed project. There was one response. Mr. Jim Entrican, Elk Grove Historical Society responded on several occasions with a discussion of pioneer families in the region, but did not specify any historic sites located at the project location.

There was no response from the Sacramento Historical Society. A second email was sent to the Sacramento Historical Society on May 8, 2018. However, no response has been received at the time of this writing (June 28, 2018).

Research Methods

In December, 2004, Peak & Associates, Inc. completed a field survey of the APE. The field team consisted of Ann Peak, M.A., assisted by a graduate student in anthropology from California State University Sacramento, and Leland Daniels, archaeological technician. The field survey was described as a complete inspection. Ground visibility was fair to good. No prehistoric or historic period resources were identified (Peak 2005b).

In April, 2018, Ric Windmiller, M.A., conducted a pedestrian reconnaissance of the APE along widely spaced transects as a check on the adequacy of the previous Peak & Associates survey. Ground visibility was fair to good; grass was cropped close to the ground by grazing cattle. One person day was expended on the reconnaissance. Expectations of finding prehistoric or historic archaeological resources were low. None were identified. However, a double row of parallel high voltage electric transmission lines cross the APE northeast to southwest. The towers were recorded on DPR 523 series forms by architectural historian Dana Supernowicz, M.A.

Ric Windmiller has more than 40 years experience directing archaeological field surveys and excavations in California, Arizona, Colorado, Canada and Mexico. Windmiller has a B.A. in anthropology from California State University, Sacramento, M.A. in anthropology from the University of Manitoba, Canada, and all but dissertation for a Ph.D. in the same field, University of Colorado.

Dana Supernowicz, M.A. is a senior historian with more than 30 years of experience conducting historical research in northern California including Sacramento County. Dana Supernowicz is formerly with the California Department of Transportation (Caltrans) and El Dorado National Forest.

Description of Cultural Resources

The only cultural resources identified within the APE, 50 years old and older are two parallel rows of high voltage electrical transmission towers and lines (see Appendix D, Confidential Location of Cultural Resources and Appendix E, Confidential Record Forms).

Prehistoric Resources

No prehistoric resources were identified.

Historic Resources

P-34-5210 (SMUD Electrical Transmission Towers and Lines)

The subject property consists of two parallel rows of 230kV electrical transmission towers with attached transmission lines. The towers are over 100 feet high and made of riveted steel with lattice bracing, owned and operated by Sacramento Municipal Utility District (SMUD). The double row of towers traverse the APE northeast to southwest along a utility easement owned by SMUD. Each tower has three horizontal arms or masts mounted to the upper half of the tower. The rectangular, truncated-shaped lattice transmission towers rest on four concrete piers. A form of "X" bracing with radiating steel lattice braces is used on opposing sides of the towers for support. The three steel arms on each tower, also containing lattice bracing, connect to twisted or elongated insulators attached to high lead cables that transmit electricity from tower to tower. The double line of towers cuts through a large swath of agricultural open-space land, terminating to the west at the West Hedge Substation at Elder Creek. The subject transmission towers were reportedly constructed between 1961 and 1968, which is based on a review of historic topographic maps and aerial photographs.

Assessment of Eligibility

Generally, a historic site, object, building, structure or district is eligible for listing on the National Register of Historic Places if it is 50 years old or older, possesses integrity and meets at least one of the following criteria (National Park Service 1991:4):

A. Association with events that have made significant contributions to the broad patterns of United States history.

B. Association with the lives of people important in United States history.

C. Embodies the distinctive characteristics of a type, period, or method of construction; or represents the work of a master, or possesses high artistic value, or represents a significant and distinguishable entity whose components may lack individual distinction;

D. Has yielded or is likely to yield information important in prehistory or history.

National Register eligibility is equally dependent on the condition or integrity of the cultural resource. Integrity, in this sense, is the authenticity of the cultural resource's historic identity, meaning the survival of those physical characteristics that existed during the historic or prehistoric period from which it dates. The integrity of archaeological resources is generally based on the degree to which the remaining cultural deposit,

artifacts or features can provide information important to our understanding of history or prehistory.

Integrity is a composite of seven qualities, some of which are more germane than others, depending on the type of cultural resource under evaluation and the criterion of National Register eligibility for which the evaluation is made. The aspects of integrity are: location, design, setting, materials, workmanship, feeling and association (National Park Service 1991:4).

Prehistoric Resources

No prehistoric resources were identified.

Historic Resources

P-34-5210 (SMUD Electrical Transmission Towers and Lines)

The historic context of the subject property is rooted in the creation of the Sacramento Municipal Utility District (SMUD). In 1923, citizens voted to create SMUD as a community-owned electric service, but years of engineering studies and political wrangling delayed SMUD's purchase of Pacific Gas and Electric Company's (PG&E's) local electrical service. In March, 1946, the California Supreme Court finally denied PG&E's argument against the acquisition. Nine months later, SMUD began operations by acquiring much of PG&E's system in Sacramento County. By 1964, SMUD's customer base swelled to 625,000 due to the re-shaping of the county's economy from primarily agriculture to electronics and defense industries. By this time, Sacramento was also becoming a major transportation hub with the growth in ocean-going shipping and air transport. The Upper American River project began providing electrical service to the valley, as SMUD expanded its distribution system of electrical poles and wires. By the mid-1960s, 95 percent of the system had been rebuilt or newly constructed.

In applying National Register of Historic Places criteria of eligibility, two of the criteria were particularly important in assessing the significance of the subject property. Criterion A was applied due to the property's relationship with electrical power generation and transmission in northern California, particularly Sacramento County, where the two parallel rows of transmission towers are located. The years following World War II were an important period of growth. SMUD met the demands for power with expanded infrastructure including construction of the Rancho Seco nuclear power plant.

National Register Criterion C was also applied to the property, because the steel towers are an engineering feature related to the development of other similar types of properties after the turn of the 19th century, including windmills, fire lookout towers and radio towers. Criterion B and D were not applicable.

Comparing tower types, the lattice bracing and height of a transmission tower often denote its age in regard to high lead electric power transmission. Although the basic principles of transmission tower design changed little from the 1920s through the 1960s, many towers were designed substantially larger and taller through time. Because the subject towers are among a chain or line of similar transmission towers, eligibility must be considered both individually and as part of a linear district comprised of multiple steel transmission towers and electrical line ties to substations and power generating plants. However, as the APE limits assessment of a district beyond the APE, only the towers and lines located within the APE are considered here.

The transmission towers appear to retain good integrity of design, materials, setting, association and feeling having minimal or no apparent alterations. Conversely, hundreds of similar transmission towers were built

throughout California, including those built by PG&E and SMUD in Sacramento County. The two parallel lines of transmission towers within the APE serve south Sacramento County, trending northeast to southwest through agricultural lands with suburban encroachment.

These two power lines were not the first electrical high-lead tie lines built in the state nor in Sacramento County. The post-World War II period of electrical transmission generation and development was spurred by rapid population growth and increasing demand from commercial and residential customers. Most of the existing steel high-lead electrical transmission towers in California date to the period after World War II. While the subject towers are critical to providing electricity to a large swath of south Sacramento, and the towers retain integrity, they were built in the 1960s, a period in which transmission tower design and engineering was quite mature. Furthermore, the transmission towers, while important, do not represent a significant event or events in the history of Sacramento County, as compared to the construction of SMUD's first and only nuclear plant in the late 1960s. Therefore the two lines of transmission towers located within the APE do not appear to be individually eligible for the National Register under either Criterion A or C.

In regards to a linear district, the subject towers are representative of a mid-twentieth century class of riveted steel transmission towers associated with substations that together had an important influence on the economic and physical development of northern California, particularly Sacramento County. However, because the tie line or power grid is not one of the major north-south or east-west power grids in California that collectively provide the bulk of the power to the state, the property's value does not rise to the level of significance for consideration as a historic property eligible for listing on the National Register. Finally, upon evaluating its engineering design, the twin rows of towers do not appear to meet the level of significance that would qualify them collectively as a National Register eligible district with the period of significance as the mid-1960s.

Assessment of Effect

For purposes of the Section 106 consultation, "effect" is defined as "alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register" [36 CFR Part 800.16(I)].

Adverse effects may include reasonably foreseeable effects caused by an undertaking that may occur later in time or removed by distance or cumulative. Adverse effects are found when an undertaking " . . . may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location design, setting, materials, workmanship, feeling, or association: (36 CFR Part 800.5(a)(1).

Only one cultural resource was identified within the APE: the twin rows of 1960s-era high voltage electrical transmission towers and lines. The two characteristics that would qualify the resource for inclusion in or eligibility for the National Register are the steel lattice towers and the transmission lines. Construction of the proposed development will not alter either of these characteristics. Application of the criteria of eligibility concluded that the towers and lines located within the APE are not individually eligible or collectively eligible as a National Register historic district under any criterion. Therefore, it is the consultant's opinion that no historic properties will be affected.

References Cited

Bennyhoff, J. A.
1977 *Ethnogeography of the Plains Miwok*. Center for Archaeological Research at Davis, Publication 5. Davis.

County of Sacramento.
1910 Official Map of Sacramento County. Phinney, Cate & Marshall, Sacramento.

Castaneda, A., R. Docken, E. Pitti, C. Ide, J. Wells
1984 Natomas Company, 1851-1984. Manuscript on file, Sacramento Archives and Museum Collection Center, Sacramento.

Curtice, C.G.
1961 Cultural and Physical Evidence of Prehistoric Peoples of Sacramento County. Master's thesis. Department of Anthropology, Sacramento State College. Sacramento.

EDAW, Inc.
1991 *A Cultural Resources Survey for the Teichert Aspen VI Rezone and Use Permit and Granite I Rezone and Use Permit, Sacramento County, California.* Submitted to BioSystems Analysis, Inc. Copies available from the North Central Information Center, California State University, Sacramento.

Heizer, R. F.
1974 Studying the Windmiller Culture. In *Archaeological Researches in Retrospect*, edited by Gordon R. Willey, Winthrop Publishers, Inc., Cambridge.

Jensen, S. M.
2008 *Archaeological Inventory Survey, Excelsior Estates Development Project, Sacramento County, California.* Genesis Society. Submitted to Foothill Associates, Inc. Copies available from the North Central Information Center, California State University, Sacramento.

Johnson, J. J.
1974 *Reconnaissance Archaeological Survey of the Morrison Stream Group in Sacramento County, California.* Submitted to U.S. Army Corps of Engineers, Sacramento District. Copies available from the North Central Information Center, California State University, Sacramento.

Kantor, J. R. K. (editor)
1964 *Grimshaw's Narrative: Being the Story of Life and Events in California During Flush Times, Particularly the Years 1848-1850, Including a Biographical Sketch, Written for the Bancorft Library in 1872 by William Robinson Grimshaw.* Sacramento Book Collectors Club, Sacramento.

Kroeber, A. L.
1925 Handbook of the Indians of California. *Bureau of American Ethnology Bulletin* 78. Smithsonian Institution, Washington, D.C.

Leach-Palm, L., P. Mikkelsen, P. Brandy, J. King, L. Hartman and B. Larson
2008 *Cultural Resources Inventory of Caltrans District 3 Rural Conventional Highways in Butte, Colusa, El Dorado, Glenn, Nevada, Placer, Sacramento, Sierra, Sutter, Yolo and Yuba Counties: Summary of Methods and Findings.* Far Western Anthropological Research Group, Inc. Submitted to California Department of Transportation, North Region, District 3. Copies available from the North Central Information Center, California State University, Sacramento.

Levy, R.
1978 Eastern Miwok. In *California,* edited by R. F. Heizer, pp. 398-413. Handbook of North

American Indians, vol. 8, W.C. Sturtevant, general editor. Smithsonian Institution, Washington D.C.

McIvers, K. J.
1985 *An Archeological Survey of Mather Air Force Base, Sacramento County, California.* Archaeological Study Center, California State University-Sacramento. Submitted to 323 Civil Engineering Squadron DEV. Copies available from the North Central Information Center, California State University, Sacramento.

Moratto, M. J.
1984 *California Archaeology.* Academic Press, New York.

National Park Service
1991 *How to Apply the National Register Criteria for Evaluations.* National Register Bulletin 15. U.S. Department of the Interior, National Park Service, Interagency Resources Division. Washington, D.C.

Pacific Gas & Electric Company
2018 Our history. www.smud.org/corporate/about-us/company-information/our-history. Accessed April 14, 2018.

Peak, A.S.
1981 Archaeological Investigations of CA-SAC-370 and CA-SAC-379: The Rancho Murieta Early Man Sites in Eastern Sacramento County. Ms. on file, Peak & Associates, Inc., Sacramento.

Peak, M.
2005a *Determination of Eligibility and Effect for the Sunbridge Park Project Area.* Peak & Associates, Inc. Submitted to Foothill Associates, Inc. Copies available from the North Central Information Center, California State University, Sacramento.

2005b *Determination of Eligibility and Effect for the Jaeger 530 Project Area, Sacramento County, California.* Peak & Associates, Inc. Submitted to Foothill Associates, Inc. Copies available from the North Central Information Center, California State University, Sacramento.

Powers, S.
1877 Tribes of California. *Contributions to North American Ethnology,* vol. III. Government Printing Office, Washington.

Reed, J. W. (editor)
1923 *History of Sacramento County, California.* Historic Record Company, Los Angeles.

Rosenthal, J. S., G. G. White and Mark Q. Sutton
2007 The Central Valley: A View from the Catbird's Seat. In *California Prehistory: Colonization, Culture and Complexity*, edited by T L. Jones and K. A. Klar, pp. 147-164. Alta Mira Press, Lanham.

Storer, T. I. and R. L. Usinger
1963 *Sierra Nevada Natural History.* University of California Press, Berkeley.

Wagner, D. L., C.W. Jennings, T. L. Bedrossian and E. J. Borgtugno
1981 Geologic Map of the Sacramento Quadrangle, California 1:250,000. State of California, The Resources Agency, Department of Conservation, Sacramento.

Windmiller, R. and D. Osanna
2009 *Redington: Sacramento Rendering Company Property, Cultural Resources Assessment, Sacramento County, California.* Ric Windmiller, Consulting Archaeologist. Submitted to Law Offices of George Phillips. Copies available from the North Central Information Center, California State University, Sacramento.

Appendix A: Other Figures

Figure 3. Looking east across APE towards Grant Line Road .

Figure 4. Looking west across APE towards Sunrise Boulevard.

Figure 5. Looking north across portion of APE towards Douglas Road.

Figure 6. Looking southeast across APE towards Grant Line and Jackson roads.

Appendix B: Records Search Results

This appendix contains information on the specific locations of archaeological resources. This information is not for publication or release to the general public. It is for planning, management and research purposes only. Information on the locations of prehistoric and historic sites are exempted from the California Freedom of Information Act, as specified in Government Code §6254.10.

Appendix C: Native American and Historical Society Coordination

Table 1. Native American and historical society contacts.

Name/Affiliation	Date(s)	Comments
Native American Heritage Commission	5-30-2017	Sacred lands file search was negative; list of Native American contacts was provided by the commission.
Rhonda Morningstar Pope Chairperson Buena Vista Rancheria of Me-Wuk Indians	4-26-2018 6-28-2018	Letter with attached location map mailed to contact. Emailed second attempt to contact. No response received as of June 28, 2018.
Crystal Martinez, Chairperson Ione Band of Miwok Indians	4-26-2018	Letter with attached location map mailed to contact. Emailed second attempt to contact. No response received as of June 28, 2018.
Randy Yonemura Ione Band of Miwok Indians	4-26-2018	Letter with attached location map mailed to contact. Emailed second attempt to contact. No response received as of June 28, 2018.
Cosme Valdez, Interim CEO Nashville-Eldorado Miwok	4-26-2018	Letter with attached location map mailed to contact. Emailed second attempt to contact. No response received as of June 28, 2018.
Nicholas Fonseca, Chairperson Shingle Springs Band of Miwok Indians	4-26-2018	Letter with attached location map mailed to contact. Emailed second attempt to contact. No response received as of June 28, 2018.
Grayson Coney, Cultural Director, Tsi-Akim Maidu	4-26-2018	Letter with attached location map mailed to contact. Emailed second attempt to contact. No response received as of June 28, 2018.
Don Ryberg, Chairperson, Tsi-Akim Maidu	4-26-2018	Letter with attached location map mailed to contact. Emailed second attempt to contact. No response received as of June 28, 2018.
Gene Whitehouse, Chairperson, United Aubuurn Indian Community of the Auburn Rancheria	4-26-2018 5-10-2018	Letter with attached location map mailed to contact. Mr. Whitehouse responded in a letter copied to Marcos Guerrero. Mr. Whitehouse requested consultation on The Ranch project.
Raymond Hitchkock, Chairperson, Wilton Rancheria	4-26-2018	Letter with attached location map mailed to contact. Emailed second attempt to contact. No response received as of June 28, 2018.
Jim Entrican, Elk Grove Historical Society	5-22-2017 Various dates	Emailed Mr. Entrican, recounting short history of project site and asked for comments on project and historical significance. Mr. Entrican responded by telephone on various dates discussing history, but no comments regarding cultural resources.
Sacramento County Historical Society (website contact)	5-22-2017 6-28-2018	Emailed "contact" option on website and included site map. Emailed second attempt to contact. No response to date (6-28-2018).

STATE OF CALIFORNIA — Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
Fax (916) 373-5471

May 30, 2017

Ric Windmiller
Windmiller Consulting

Sent by Email: windmiller-consulting@sbcglobal.net
Number of Pages: 2

RE: The Ranch Permitting Services, Buffalo Creek, Sacramento County

Dear Mr. Windmiller:

A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) referenced above with negative results. **Please note that the absence of specific site information in the *Sacred Lands File* does not indicate the absence of Native American cultural resources in any APE.**

I suggest you contact all of those listed, if they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. **By contacting all those on the list, your organization will be better able to respond to claims of failure to consult**. If a response has not been received within two weeks of notification, the NAHC requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact via email: Sharaya.souza@nahc.ca.gov.

Sincerely,

Sharaya Souza
Staff Services Analyst

Native American Heritage Commission
Native American Contacts
5/30/2017

Buena Vista Rancheria of Me-Wuk Indians
Rhonda Morningstar Pope, Chairperson
1418 20th Street, Suite 200 Me-Wuk / Miwok
Sacramento , CA 95811
rhonda@buenavistatribe.com
(916) 491-0011 Office

(916) 491-0012 Fax

Ione Band of Miwok Indians
Crystal Martinez, Chairperson
P.O. Box 699 Miwok
Plymouth , CA 95669
Crystal@ionemiwok.org
(209) 245-5800 Office

(209) 245-3112 Fax

Ione Band of Miwok Indians
Randy Yonemura
PO BOX 699 Miwok
Plymouth , CA 95669
randy_yonemura@yahoo.com
(209) 245-5800 Office
(916) 601-4069 Cell

Nashville-Eldorado Miwok
Cosme Valdez, Interim Chief Executive Officer
P.O. Box 580986 Miwok
Elk Grove , CA 95758
valdezcome@comcast.net
(916) 429-8047 Voice/Fax

Shingle Springs Band of Miwok Indians
Nicholas Fonseca, Chairperson
P.O. Box 1340 Miwok
Shingle Springs , CA 95682 Maidu
nfonseca@ssband.org
(530) 387-1400
(530) 387-8067 Fax

Tsi Akim Maidu
Grayson Coney, Cultural Director
P.O. Box 510 Maidu
Browns Valley , CA 95918
tsi-akim-maidu@att.net
530-274-7497

Tsi Akim Maidu
Don Ryberg, Chairperson
P.O. Box 510 Maidu
Browns Valley , CA 95918
tsi-akim-maidu@att.net
Office 530-274-7479
cell 530-559-8595

United Auburn Indian Community of the Auburn Rancheria
Gene Whitehouse, Chairperson
10720 Indian Hill Road Maidu
Auburn , CA 95603 Miwok
(530) 883-2390 Office

(530) 883-2380 Fax

Wilton Rancheria
Raymond Hitchcock, Chairperson
9728 Kent Street Miwok
Elk Grove , CA 95624
rhitchcock@wiltonrancheria-nsn.gov
(916) 683-6000 Office

(916) 683-6015 Fax

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code

This list is only applicable for contacting local Native Americans with regard to cultural resources assessments for the updated contact list for The Ranch Permitting Services, Buffalo Creek, Sacramento County.

Windmiller Consulting, Inc.
ARCHAEOLOGY, PALEONTOLOGY, ARCHITECTURAL HISTORY

2280 GRASS VALLEY HIGHWAY #205
AUBURN, CALIFORNIA 95603

530/878-0979
FAX 530/878-0915

April 26, 2018

Mr. Gene Whitehouse
Chairperson
United Auburn Indian Community of the Auburn Rancheria
10720 Indian Hill Road
Auburn, CA 95603

Re: "The Ranch" residential development, Rancho Cordova, Sacramento County

Dear Mr. Whitehouse:

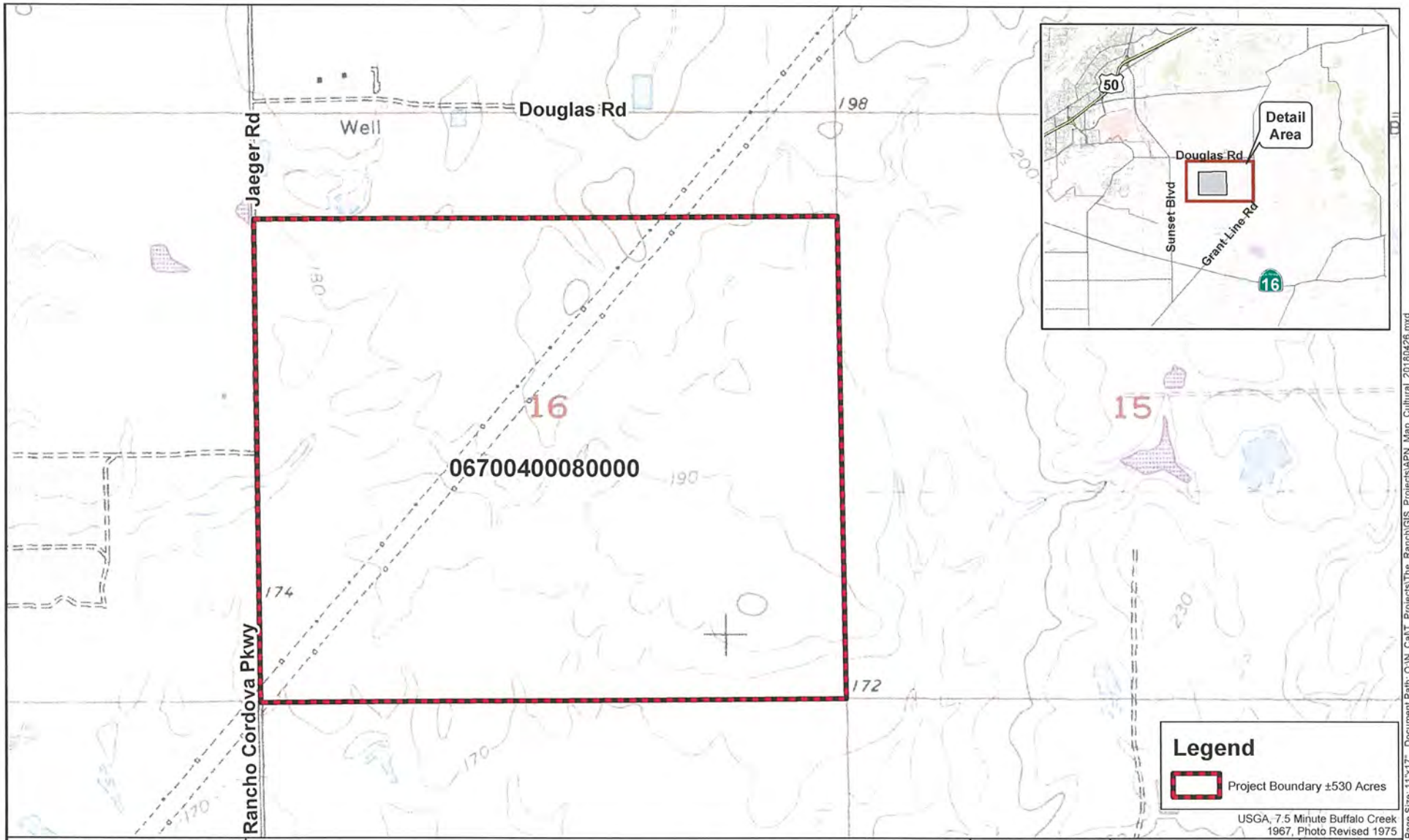
The Ranch is a 530 acre undeveloped property located south of Douglas Road and east of Jaeger Road in the south portion of Rancho Cordova. The project is a planned residential development that will connect with existing modern residential developments on the west and north. As a Clean Water Act, Section 404 permit is anticipated, we (Windmiller Consulting, Inc.), are assisting the Corps of Engineers by updating a previous cultural resources study of the same property (see attached map).

The Native American Heritage Commission completed an updated Sacred Lands File search with negative results. In addition, commission staff provided us with a list of recommended contacts with your name included who may have additional information on the location of sacred and other sites of Native American importance. Any such information will be added to our technical report. If you wish to volunteer information at this time regarding sites that may be of importance to Native Americans, please contact Cathryn Chatterton at the above address. You may also respond by telephone (530-878-0979), fax (530-878-0915) or email: windmiller-consult@sbcglobal.net. We would appreciate a response at your earliest convenience if you wish to comment at this time.

Yours sincerely,

Ric Windmiller
Archaeologist

Enclosure



ATTACHMENT 4

MIWOK MAIDU United Auburn Indian Community of the Auburn Rancheria

Gene Whitehouse, Chairman | John L. Williams, Vice Chairman | Calvin Moman, Secretary | Jason Camp, Treasurer | Gabe Cayton, Council Member

May 10, 2018

Ric Windmiller
Windmiller Consulting, Inc.
2280 Grass Valley Highway #205
Auburn CA 95603

Subject: The Ranch Residential Development, Rancho Cordova, Sacramento County

Dear Ric Windmiller,

Thank you for requesting information regarding the above referenced project. The United Auburn Indian Community (UAIC) of the Auburn Rancheria is comprised of Miwok and Southern Maidu (Nisenan) people whose tribal lands are within Placer County and whose service area includes El Dorado, Nevada, Placer, Sacramento, Sutter, and Yuba counties. The UAIC is concerned about development within its aboriginal territory that has potential to impact the lifeways, cultural sites, and landscapes that may be of sacred or ceremonial significance. We appreciate the opportunity to comment on this and other projects. The UAIC would like to consult on this project.

In order to ascertain whether the project could affect cultural resources that may be of importance to the UAIC, we would like to receive copies of any archaeological reports that are completed for the project. We also request copies of environmental documents for the proposed project so that we have the opportunity to comment on appropriate identification, assessment and mitigation related to cultural resources. Finally, we request and recommend that UAIC tribal representatives observe and participate in all cultural resource surveys. To assist in locating and identifying cultural resources, UAIC's Preservation Department offers a mapping, records and literature search services program. This program has been shown to assist project proponents in complying with applicable environmental protection laws and choosing the appropriate mitigation measures or form of environmental documentation during the planning process. If you are interested in the program, please let us know.

The UAIC's Preservation Committee would like to set up a meeting or site visit, and begin consulting on the proposed project. Based on the Preservation Committee's identification of cultural resources in and around your project area, the UAIC recommends that a tribal monitor be present during any ground disturbing activities. Thank you again for taking these matters into consideration, and for involving the UAIC early in the planning process. We look forward to reviewing the documents requested above and consulting on your project. Please contact Marcos Guerrero, Cultural Resources Manager, at (530) 883-2364 or by email at mguerrero@auburnrancheria.com if you have any questions.

Sincerely,

Gene Whitehouse,
Chairman

CC: Marcos Guerrero, CRM

Ric Windmiller <windmiller-consult@sbcglobal.net>
To Jim Entrican 5-22-2017 at 11:34 AM

Hi Jim,

We're continuing to do technical studies for projects in Sacramento and surrounding counties. "The Ranch" is a 530-acre property in Section 16 just south of Douglas Road between Grant Line and Sunrise. We are assisting the U.S. Army Corps of Engineers in meeting its responsibility to identify any important historic (and prehistoric) sites on The Ranch property. We solicit information from Native Americans as well as historical societies on sites that may be impacted as a result of issuing discretionary permits.

Apparently, the property was originally owned by Louis Lepetit, which seems to ring a bell with me in connection with Elk Grove's history. Around 1880, Lepetit sold the land to George Jaeger who held it to his death in 1907. Apparently, Jaeger did not live on the property in Section 16, but had a place in Section 9 and later moved to Sacramento. At some point, Jaeger sold his El Dorado County land (480 acres) to Alex Forni, another familiar name. Jaeger's name shows up on lists for Cosumne, Sloughhouse and Michigan Bar.

Any comments? See attached map for location of "The Ranch."

Ric

Windmiller Consulting, Inc.
2280 Grass Valley Hwy. #205
Auburn, CA 95603
(530) 878-0979 (office)
(530) 878-0915 (fax)
(916) 716-4561 (mobile)
email: windmiller-consult@sbcglobal.net

To: Sacramento County Historical Society (blind addressee)
Email date: 5-22-2017

Text of message (no map attachment)

"The Ranch" is a 530-acre property in Section 16 just south of Douglas Road between Grant Line and Sunrise. We are assisting the U.S. Army Corps of Engineers in meeting its responsibility to identify any important historic (and prehistoric) sites on The Ranch property. We solicit information from Native Americans as well as historical societies on sites that may be impacted as a result of issuing discretionary permits.

Apparently, the property was originally owned by Louis Lepetit, which seems to ring a bell with me in connection with Elk Grove's history. Around 1880, Lepetit sold the land to George Jaeger who held it to his death in 1907. Apparently, Jaeger did not live on the property in Section 16, but had a place in Section 9 and later moved to Sacramento. At some point, Jaeger sold his El Dorado County land (480 acres) to Alex Forni, another familiar name. Jaeger's name shows up on lists for Cosumne, Sloughhouse and Michigan Bar.

The Ranch property appears to have been ranch/farm land. Do you know of any historic sites located on the property? I can provide you with a map showing the property's location. I would appreciate any comments you may have at this time.

Thanks, Ric

Ric Windmiller <windmiller-consult@sbcglobal.net>
To rhonda@buenavistatribe.com crystal@ionemiwok.org Randy Yonemura Cosme Valdez nfonseca@ssband.org and 2 more... 6-28-2018 at 9:52 AM

All,

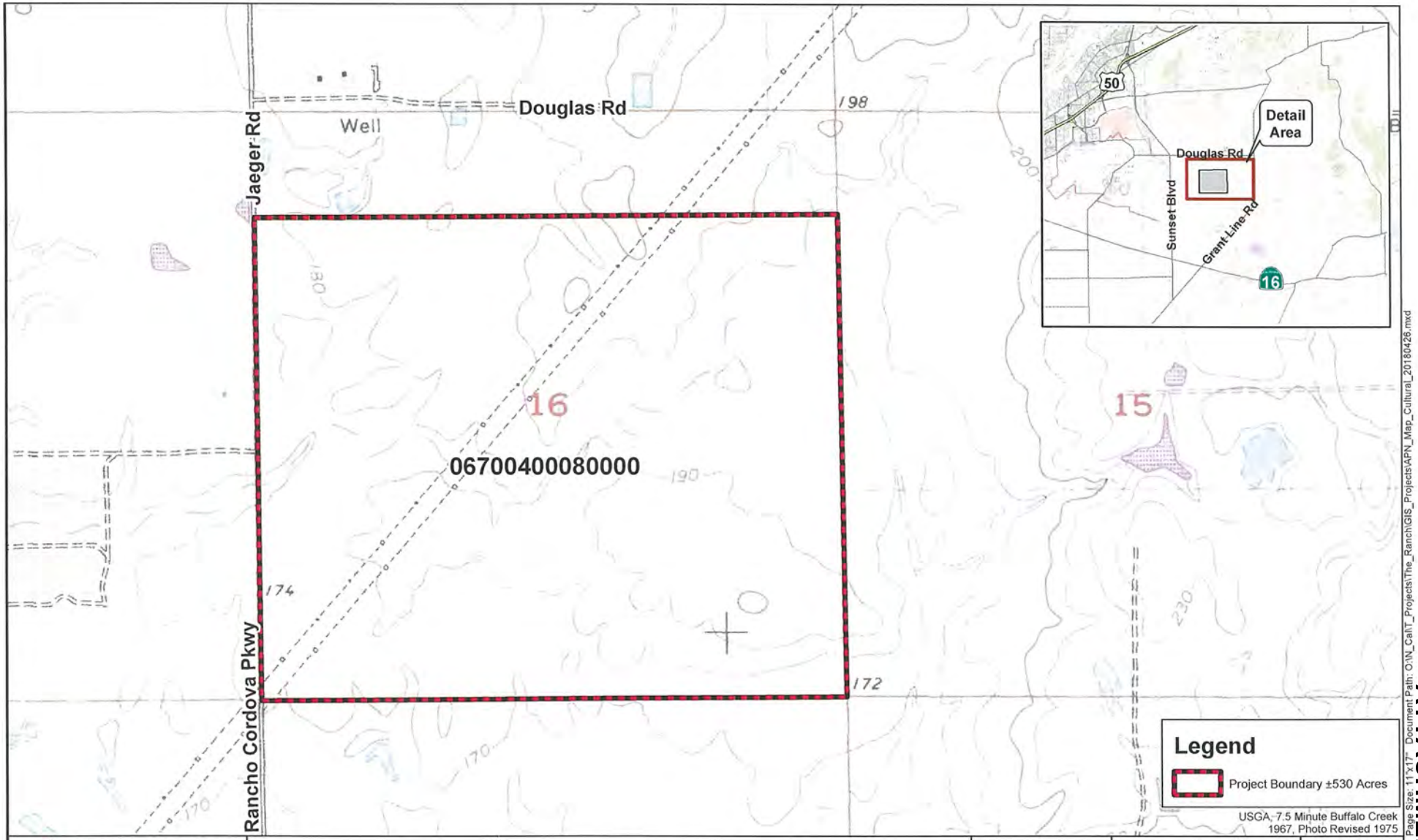
The Ranch is a proposed 530-acre mixed use community in the south portion of the City of Rancho Cordova, Sacramento County, California. The Ranch lies on the east side of Jaeger Road, south of Douglas Road, one mile east of Sunrise Boulevard and one mile west of Grant Line Road (see attached map).

The Native American Heritage Commission reported that its Sacred Lands File search was negative. Archaeological field surveys also did not identify any Native American archaeological resources.

We recognize that sacred or ceremonial sites may not be recognized on the ground by non-Native American archaeologists. We attempted to contact you back in April to see if you have any knowledge of such sacred sites located within the project's APE. United Auburn Indian Community responded earlier to our request. If you wish to volunteer any information, please contact us as soon as possible if you wish to respond at this time.

Ric Windmiller

Windmiller Consulting, Inc.
2280 Grass Valley Hwy. #205
Auburn, CA 95603
(530) 878-0979 (office)
(530) 878-0915 (fax)
(916) 716-4561 (mobile)
email: windmiller-consult@sbcglobal.net



FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING + PLANNING + LANDSCAPE ARCHITECTURE
© 2018

THE RANCH (JAEGER 530) - APN MAP

Drawn By: MUB
QA/QC: AMP
Date: 01/18/2018

FIGURE 1

Page Size 11"x17" Document Path: O:\N_Cal\T_Projects\The_Ranch\GIS_Projects\APN_Map_Cultural_20180426.mxd

Document Name: APN_Map_Cultural_20180426.mxd : : 4/26/2018 2:53:26 PM

ATTACHMENT 4

Appendix D: Confidential Location of Cultural Resources

This appendix may contain information on the specific locations of archaeological resources. This information is not for publication or release to the general public. It is for planning, management and research purposes only. Information on the locations of prehistoric and historic sites are exempted from the California Freedom of Information Act, as specified in Government Code §6254.10.

Appendix E: Confidential Record Forms

This appendix contains information on the specific locations of archaeological resources. This information is not for publication or release to the general public. It is for planning, management and research purposes only. Information on the locations of prehistoric and historic sites are exempted from the California Freedom of Information Act, as specified in Government Code §6254.10.

APPENDIX E

Preliminary Geotechnical Engineering Report

Preliminary Geotechnical Engineering Report

JAEGER RANCH PROPERTY

WKA No. 11103.02

September 26, 2016

Prepared For:

The True Life Companies

12647 Alcosta Boulevard, Suite 470

San Ramon, California 94583

Preliminary Geotechnical Engineering Report
JAEGER RANCH PROPERTY
WKA No. 11103.02

TABLE OF CONTENTS

INTRODUCTION 1
Scope of Services 1
Figures and Attachments 2
Proposed Development 2

FINDINGS 2
Site Description 2
Site History 3
General Site Geology 3
Soil and Rock Conditions 4
Groundwater 5

PRELIMINARY CONCLUSIONS AND RECOMMENDATIONS 5
Seismic Hazards 5
Seismic Design Parameters (2013 CBC/ASCE 7-10) 6
Liquefaction Potential 7
Naturally Occurring Asbestos (NOA) 7
Soil Expansion Potential 7
Soil Corrosion Potential 8
Building Support 9
Excavation Conditions 9
Material Suitability for Engineered Fill Construction 10
Groundwater and Seasonal Moisture 10
Site Clearing and Grading Considerations 11
Building Foundations 12
Preliminary Pavement Design 12
Future Geotechnical Engineering Study 13

LIMITATIONS 14

REFERENCES 15

Preliminary Geotechnical Engineering Report
JAEGER RANCH PROPERTY
WKA No. 11103.02

TABLE OF CONTENTS (continued)

FIGURES
Vicinity Map ..... Figure 1
Site Plan ..... Figure 2
Logs of Test Pits ..... Figures 3 through 12
Unified Soil Classification System ..... Figure 13

APPENDIX A – Field and Laboratory Test Results
Atterberg Limit Test Results ..... Figures A1
Gradation Test Results ..... Figures A2
Triaxial Compression Test Results ..... Figures A3
Resistance Value Test Results ..... Figures A4
Corrosion Test Results ..... Figures A5 and Figure A6

Wallace Kuhl & Associates

CORPORATE OFFICE
3050 Industrial Boulevard
West Sacramento, CA 95691
916.372.1434 phone
916.372.2565 fax

STOCKTON OFFICE
3422 West Hammer Lane, Suite D
Stockton, CA 95219
209.234.7722 phone
209.234.7727 fax

Preliminary Geotechnical Engineering Report
JAEGER RANCH PROPERTY
Rancho Cordova Parkway near Pericles Drive
Rancho Cordova, California
WKA No. 11103.02
September 26, 2016

INTRODUCTION

We have completed a preliminary evaluation of the subsurface soil and groundwater conditions at the Jaeger Ranch property located easterly of the intersection of Rancho Cordova Parkway and Pericles Drive in Rancho Cordova, California (see Figure 1). The purpose of our study has been to gather information on the nature and general engineering properties of the soil and groundwater conditions at the site, and to provide findings and conclusions regarding the feasibility of developing the site with a residential subdivision.

It is emphasized that the findings and conclusions contained in this report are preliminary in nature and are not intended for use in specific design of structural improvements. This study is limited to a general overview of soil and groundwater conditions to assist in planning and budgeting for the project.

Scope of Services

The scope of services for the project included the following:

1. site reconnaissance;
2. review of available reports, historical aerial photographs, topographic maps, groundwater information, geologic maps, and of the United States Department of Agriculture Natural Resources Conservation Service (NRCS) Web Soil Survey;
3. subsurface exploration, including the excavation and sampling of 10 test pits across the site to a maximum depth of 10½ feet below existing grades;
4. laboratory testing of select soil samples;
5. engineering analysis; and,
6. preparation of this preliminary geotechnical report.

Supplemental information reviewed during the preparation of this report included the review of our *Draft Phase I Environmental Site Assessment* (WKA No. 11103.01, dated September 22, 2016), prepared for the subject property.

Figures and Attachments

A Vicinity Map is presented as Figure 1 and a Site Plan showing the locations of our test pits is presented as Figure 2. Logs of Test Pits are presented as Figures 3 through 12, and an explanation of the symbols and classification system used on the logs appears on Figure 13. Appendix A contains general information regarding this investigation; and, a description of the field exploration and laboratory testing.

Proposed Development

The subject property is rectangular in shape and encompasses a total area of approximately 529 acres of vacant, undeveloped, agricultural land. The property consists of one parcel identified as Sacramento County Assessor Parcel Number 067-0040-008-0000.

We understand the major components of the property will consist of about 200 acres of residential (including high-density residential), about 6 acres of commercial developments, a recreation center, and about 245 acres of designated nature preserves. Residential structures are currently planned to consist of one- and two-story structures, with the high-density, residential structures potentially being as much as three stories in height. We anticipate these residential structures will be wood-framed with interior concrete slab-on-grade lower floors. We understand that the commercial and recreation center structures are likewise currently planned to be one- or two-story structures. Structural loads are anticipated to be relatively light and consistent with this type of construction. Associated development will include underground utilities, exterior flatwork, retaining walls, new streets and typical residential landscaping.

FINDINGS

Site Description

The project site is comprised of approximately 529 acres, located easterly of the intersection of Pericles Drive and Rancho Cordova Parkway in Rancho Cordova, California (Figure 1). The property is bounded to the north and east by existing residential subdivisions and grazing/ranch land; and to the south and west by grazing land containing a few minor ranch structures and houses. Blodgett Reservoir lies about one-mile south of the site and an unnamed minor reservoir lies about a half mile to the east of the site near some existing housing and ranch structures. Topography across the site generally consists of modest rolling hills. Review of topographic maps of the area indicates the site elevations[1] vary from a high point of just over +200 feet relative to mean seal level (msl) to a low point of just under +180 feet msl (North American Vertical Datum of 1988).

[1] All elevations reported are provided with respect to the North American Vertical Datum of 1988 (NAVD88). Reported elevations in this report are approximate, and are generally based on available topographic data from the United States Geological Society.

At the time of our field exploration activities in August and September of 2016, the major portion of the property consists of vacant, grazing land, with vernal ponds and streams draining in from the northeast corner towards the southwest corner of the site. The property is covered with a moderate growth of volunteer weeds and grass up to 3 feet in height. High-voltrage transmission power lines cross through the site extending from the substation located immediately north of the northeast corner of the site and extending to the south west through the site. A fenced yard containing a transformer and monitoring well (EX-22) were observed about 1100 feet south of where Big Meadow Way intersects the northern boundary of the site. One other well (EX-27) is located near the northeast corner of the site along the northern boundary.

Minor amounts of domestic refuse were observed along then northern and western site boundaries. In addition, three livestock watering troughs were observed along the northern site boundary, and a metal water storage tank was observed north of the existing groundwater extraction well. Additional details regarding these wells and associated structures can be found in our *Phase I Environmental Site Assessment* (WKA No. 11103.01, dated September 22, 2016).

Site History

Review of available historic maps and aerial photographs indicates the site has historically remained essentially vacant since the early 1800's. Dry farming and livestock grazing appear to have been the historic land uses. In addition, there has been some minor development of the site including installation of monitoring wells and groundwater extraction wells (associated with the former McDonald Douglas/Rancho Cordova Test Site located north of the site), high-voltage transmission power lines, and a small transformer associated with the power lines.

General Site Geology

The site is located within the northeastern portion of the Great Valley geomorphic province of California. The Great Valley of California is generally considered to be an elongated sedimentary trough, approximately 450 miles long and 50 miles wide, which has been filled by a thick sequence of Jurassic to Holocene continental and marine sediments. The sediments have been folded into an asymmetric syncline, the axis of which lies immediately east of the interior of the Coast Ranges. The geology in the Great Valley is characterized by thick sequences of alluvial and flood plain deposits consisting of sedimentary material derived from the Coast Ranges to the west and the Sierra Nevada mountain range to the east.

The local geology, as characterized by the Geologic Map of the Sacramento Quadrangle, California (1981), consists primarily of Laguna Formation deposits (Tl) which are consolidated Tertiary age alluvial deposits. Surface soil deposits were mapped by the NRCS as consisting of the following units:

- Fiddyment Fine Sandy Loam, 1 to 8 percent slopes (0.4% of area of interest - AOI[2]);
- Hicksville gravelly loam, 0 o 2 percent slopes, occasionally flooded (2.4% of AOI);
- Red Bluff-Redding complex, 0 to 5 percent slopes (16.2% of AOI);
- Redding loam, 2 to 8 percent slopes (10.7% of AOI); and,
- Redding gravelly loam, 0 to 8 percent slopes (70.4% of AOI).

The NRCS also maps the site use with the following characteristics:

- Somewhat limited for small commercial buildings, and dwellings without basements, due in part to the presence of expansive soils.
- Somewhat limited for excavations, due in part to the stability of excavation walls.
- Somewhat limited for local roads and streets, due in part to presence of expansive soils.
- Low to Moderate corrosion potential to concrete.

The soils encountered in the test pits excavated on site were generally consistent with these mapped soil units based on laboratory testing and field and laboratory classification of soils.

Soil and Rock Conditions

The site is generally composed of loose to medium dense, alluvial deposits consisting of silty and clayey sand, lean clay, gravels, and clayey gravel. Surface soils in the upper two to three feet generally consist of silty or clayey sand or sandy, silty clay with some gravel and occasional cobbles. These soils generally have a low plasticity index (PI) of 6 or less and dry unit weights ranging from 109 to 119 pounds per cubic foot (pcf), with some potential for corrosion (pH = 5.22). Soils beneath the silty sand to a depth of approximately 4 to 8 feet consist of clay and silty or clayey sand with some gravel and cobbles. These soils generally have a higher plasticity index (PI = 16 to 20) and dry unit weights ranging from 89 to 112 pcf. Beneath these soils are sand, silty sand, gravel, and clayey gravel with some cobbles extending to the maximum depth explored of 10½ feet below existing grades. Cobbles of up to 6 inches were observed in many locations increasing in concentration with depth.

Detailed soil descriptions and soil lithology at a specific test pit location are provided in logs of the test pits presented in Figures 3 through 12. At the conclusion of the field explorations, the test pits were backfilled with excavation spoils compacted with a sheepsfoot wheel attachment.

[2] Coverages of area of interest are approximate.

Groundwater

The site is located within the California department of Water Resources defined Sacramento Valley Groundwater Basin/South American Sub-Basin of the Sacramento River Hydrologic Region.

Groundwater was not encountered in the test pits excavated at the site in August of 2016. Based on groundwater depth observations taken from 2008 to 2012 in nearby wells (e.g. Wells EX-20, EX-21, EX-22, and EX-27 from Central Valley Regional Water Quality Control Board Case Number SL205493018) permanent groundwater is anticipated to vary between 150 and 240 feet below existing surface grades.

However, perched seasonal groundwater is anticipated to occur at this site. Surface water features observed during site exploration activities included vernal ponds and ephemeral streams/washes. Based on these surface features, and the underlying geology, we anticipate the perched groundwater conditions are likely to occur at the site with potential for significant surface water flows. Perched groundwater conditions should be expected after heavy rainfall or during the wetter seasons of the year.

PRELIMINARY CONCLUSIONS AND RECOMMENDATIONS

Seismic Hazards

The Alquist-Priolo (AP) Earthquake Fault Zoning Act regulates activities near active faults within what is known as an earthquake fault zone. Active faults are defined as a fault that has ruptured in the last 11,000 years. Review of the AP Maps of California, prepared by the California Geological Survey (CGS), shows that there are no regulated earthquake fault zones near the site.

We note, however, that low to moderate amounts of earthquake induced ground shaking can occur at the site. The average peak ground acceleration (PGA_M) at the site for the maximum considered earthquake (MCE) event (per ASCE 7-10) is 0.244 g.

Faults likely contributing significantly to this hazard include the Hunting Creek – Berryessa Fault and the Great Valley fault system among other sources. The closest fault zone to the site is the Foothills Fault System, located about 20 miles north east of the site. The Foothills Fault System has been historically active, with magnitude 5 to 6 events occurring in 1975 near Oroville, CA and microseismicity recorded in the vicinity of the Penryn and Rocklin plutons (Cramer et al., 1978).

No known active faults cross through the site and fault displacement hazard is considered to be negligible at the site.

Seismic Design Parameters (2013 CBC/ASCE 7-10)

Code based seismic design parameters were developed for the site consistent with section 1613 of the 2013 edition of the California Building Code (2013 CBC), which references the American Society of Civil Engineers Standard 7-10 (ASCE 7-10). For the purposes of preliminary evaluations, we assumed a site class of D for the site.

Seismic design parameters were obtained for Site Class D using the online USGS U.S. Seismic Design Maps application. Using this tool, values were obtained for a point near the center of the site located at latitude 38.5423˚ and longitude -121.2091˚, and are provided in Table 1. These seismic design parameters may be used for preliminary evaluations. Applicability to the site should be confirmed prior to use in final design.

TABLE 1
2013 CBC/ASCE 7-10 SEISMIC DESIGN PARAMETERS

Latitude: 38.5423° N Longitude: 121.2091° W	ASCE 7-10 Table/Figure	2013 CBC Table/Figure	Factor/Coefficient	Value
Mapped MCE_R S_a, 0.2 sec	Figure 22-1	Figure 1613.3.1(1)	S_S	0.515 g
Mapped MCE_R S_a, 1.0 sec	Figure 22-2	Figure 1613.3.1(2)	S_1	0.252 g
Soil Class	Table 20.3-1	Section 1613.3.2	Site Class	D
Site Coefficient	Table 11.4-1	Table 1613.3.3(1)	F_a	1.388
Site Coefficient	Table 11.4-2	Table 1613.3.3(2)	F_v	1.896
Transition Period	Figure 22-12	-	T_L	12 sec
Adjusted MCE_R S_a Parameters	Equation 11.4-1	Equation 16-37	S_{MS}	0.715 g
	Equation 11.4-2	Equation 16-38	S_{M1}	0.478 g
Design Level S_a Parameters	Equation 11.4-3	Equation 16-39	S_{DS}	0.477 g
	Equation 11.4-4	Equation 16-40	S_{D1}	0.319 g
Seismic Design Category	Table 11.6-1 and Table 11.6-2	Table 1613.3.5(1) & Table 1613.3.5(2)	-	D

NOTES:
MCE_R = Risk-Targeted Maximum Considered Earthquake
S_a = Five percent damped spectral response acceleration (for a given period)
g = gravity
sec = seconds

Liquefaction Potential

Earthquake induced soil hazards to buildings associated with seismicity include liquefaction and seismically induced bearing capacity failure, lateral spreading, and total/differential settlement of soils below foundations. These effects, when significant, can contribute to structural damage or collapse of structures, and damage to utilities and other engineered structures. Typically, the risk of these types of hazards occurring is considered low in the Central Valley due to the low potential for nearby large magnitude seismic events.

Groundwater at the site is greater than 50 feet below grades, and saturated soils were not encountered during site exploration activities. Soils will likely remain unsaturated during the majority of the year, and are thus not considered susceptible to liquefaction. The silty sands, and sands are susceptible to seismic compression.

Based on this, it is our opinion that liquefaction potential at the site is considered very low. However, the low to moderate ground shaking expected at the site may be capable of causing some limited settlement in the sands. The expected total and differential settlements of the soils should be evaluated in more detail in a final geotechnical engineering report.

Naturally Occurring Asbestos (NOA)

Review of *Relative Likelihood for the Presence of Naturally Occurring Asbestos in Eastern Sacramento County, California* (Higgins and Clinkenbeard, 2006) indicates the site is not likely to be underlain by ultramafic rocks likely to contain naturally occurring asbestos. In addition, we did not observe or encounter ultramafic rocks likely to contain naturally occurring asbestos. Therefore, naturally occurring asbestos is not considered likely to exist at the site.

Soil Expansion Potential

According to section 1803.5.3 of the *California Building Code*, soils with a PI greater than 15, more than 10 percent fines, and having more than 10 percent of particles less than 5 micrometers in size; and/or soils having an expansion index (EI) of more than 20 shall be considered expansive.

Laboratory test results performed on samples collected in the upper 2 to 3 feet indicate that these soils typically have a PI of less than 15 and can be considered to have a low expansion potential. The soils beneath about two feet typically have a PI of greater than 15, and should be considered to have a low to moderate expansion potential. Additional testing of the clay and silty/clay should be conducted to confirm the expansive potential of this soil layer prior to final design. These soils were typically encountered in the northwestern area of the property, with the presence of these soils less prominent to the south and east.

Based on the presence of the low to moderately expansive clay at the site, recommendations to mitigate the effects of the expansive clay would be provided for the design-level geotechnical report. Mitigation measures will likely be required if final site grades will expose the clayey subgrade or of the clayey soils are within the upper 12 to 18 inches of the final building pads, exterior flatwork, or pavement subgrades. Typical mitigation includes deepened conventional foundations and/or use of post-tensioned slabs.

Soil Corrosion Potential

One sample of near-surface soil from TP5 was submitted to Sunland Analytical Lab for testing to determine pH, chloride and sulfate concentrations, and minimum resistivity to help evaluate the soils corrosion potential. The results of the corrosivity testing are summarized in Table 2 and copies of the analytical test reports are presented in Figures A6 through A7.

TABLE 2
SOIL CORROSIVITY TESTING

Analyte	Test Method	TP3 (0'-3')
pH	CA DOT 643 Modified*	5.22
Minimum Resistivity	CA DOT 643 Modified*	7,500 Ω-cm
Chloride	CA DOT 417	6.5 ppm
Sulfate	CA DOT 422	1.9 ppm
	ASTM D516	2.04 ppm

NOTES: * = Small cell method, Ω-cm = Ohm-centimeters, ppm = Parts per million

The California Department of Transportation Corrosion and Structural Concrete Field Investigation Branch, 2012 Corrosion Guidelines, considers a site to be corrosive to foundation elements if one or more of the following conditions exists for the representative soil and/or water samples taken: has a chloride concentration greater than or equal to 500 ppm, sulfate concentration greater than or equal to 2000 ppm, or a pH of 5.5 or less (Caltrans, 2012).

Based on this criterion, soils tested with a lower pH and may be considered corrosive to steel reinforcement properly embedded within Portland cement concrete (PCC).

Table 19.3.1.1 – Exposure Categories and Classes, of American Concrete Institute (ACI) 318-14, Section 19.3 – Concrete Design and Durability Requirements, as referenced in Section 1904.1 of the 2013 CBC, indicates the severity of sulfate exposure for the sample tested is Exposure Class S0 (water-soluble sulfate concentration in contact with concrete is low and injurious sulfate attack is not a concern). However, additional requirements for concrete strength and design may be required for soils with low pH. Consideration to the potential corrosive nature of soil should be considered in development of the project. Concrete design will ultimately need to be developed by a structural engineer, who should evaluate the requirements of ACI 318-14 and determine their applicability to the site.

Wallace-Kuhl & Associates are not corrosion engineers. Therefore, if it is desired to further define the soil corrosion potential at the site a corrosion engineer should be consulted.

Building Support

An important aspect of site development will be the adequate clearing of surface and subsurface items associated with the existing vegetation and depressions revealed during site grading. Proper abandonment of irrigation and domestic wells, if any, must be performed in accordance with the Sacramento County Environmental Management Department requirements. Wells not designated for abandonment should be appropriately protected against damage.

It is our opinion that undisturbed native soils and/or recompacted native soils will be capable of supporting the proposed structures and pavements provided the further preliminary recommendations regarding preparation and soil compaction are followed. Our work also indicates that engineered fill, properly placed and compacted in accordance with the recommendations of this report, will be capable of supporting the proposed improvements.

Buildings where expansive clayey soils are encountered within the upper 12 to 18 inches of the foundations or final building pad subgrade will require specific recommendations to mitigate the effects of the expansive soils. Mitigation measures may include deepening foundations, post-tension (PT) construction, and/or removal of the expansive clays and replacement with non-expansive engineered fill.

Excavation Conditions

Soil test pits were excavated to depths ranging from 7 to 10½ feet with a Case 580 Super M backhoe. Excavation refusal was generally reached at depths of 7 feet or more. Based on this information, and our local experience, we anticipate the soils at the site will be readily excavatable to depths of approximately five feet across most of the site with conventional earthmoving and trenching equipment. Gravely soils and cobbles will be encountered in most locations at the site. Excavations deeper than five feet are likely to encounter greater concentrations of gravel and cobbles and may require additional effort or larger equipment to excavate.

Near surface soils generally consist of silty sands and generally classify as OSHA Type B/C soils requiring excavation slopes of not more than 1H:1V to 1½H:1V (horizontal to vertical) for shallow excavations. Sloped excavations, bracing, and/or shoring may be required to control sloughing and caving of excavations within the near-surface soils at the site. Excavations should be sloped or braced in accordance with current California Occupational Safety and Health Administration (Cal/OSHA) regulations.

The contractor must provide a safely sloped excavation or an adequately constructed and braced shoring system in accordance with federal, state, and local safety regulations for individuals working in an excavation that may expose them to the danger of moving ground. If material is stored or heavy equipment is operated near an excavation, stronger shoring must be used to resist the extra pressure due to the superimposed loads.

Material Suitability for Engineered Fill Construction

In our opinion, the on-site surface and near-surface soils are considered suitable for use as engineered fill materials provided they are appropriately processed such that they are free of debris, do not contain significant concentrations of clay or gravel, are at or near optimum moisture content (e.g. moisture at which adequate compaction can be achieved), and contain organics less than two percent by weight.

Surface soils may require stripping of organics prior to work at the site. Strippings and other organically laden soil stripped from the surface of the site may not be used in fill construction or anywhere within five feet of a structure, pavement, or exterior flatwork.

We anticipate that soils in the upper 2 to 3 feet will require only minimal on site processing after stripping has been completed to meet the requirements for engineered fill. Deeper soils may require more extensive processing including mixing with other soil and breaking down of larger particles to be considered suitable. Additionally, expansive soils if present in the upper 12 to 18 inches beneath the bottom of the foundations may require alternative foundation systems (e.g. post-tensioned slab systems).

Groundwater and Seasonal Moisture

Based on the soil and groundwater conditions encountered at the site, it is our opinion that the static groundwater table should not adversely affect design, construction, or performance of the proposed residential improvements. Although the static groundwater table should not impact future development, perched water may be encountered above and within the soils at the site. The potential for encountering perched water is greater during and shortly after the rainy season; however, perched water could be encountered throughout the year in some areas. Seepage in utility excavations (if encountered) can likely be removed by sump pumps without major dewatering efforts.

We note that an important aspect of this project will be to develop an overall water management plan. The potential for perched groundwater, seeps, and surface ponding at the site is high, especially in the wetter seasons of the year. Management of groundwater using subdrains or similar methods should be incorporated into the overall project plan. Subdrains, if used, should be designed to adequately carry water collected in the system, and should have a designated drainage outlet at an appropriate location.

The near-surface soils will be in a near-saturated condition during and for a considerable period following the rainy season. Grading operations attempted following the onset of winter rains and prior to prolonged drying periods will be hampered by high soil moisture contents. Such soils, intended for use as engineered fill, will require considerable aeration to reach a moisture content that will permit the recommended compaction to be achieved.

Site Clearing and Grading Considerations

Future geotechnical engineering investigations should be performed to develop site-specific clearing and grading recommendations.

Site clearing would include removal of abandoned water wells, and deleterious debris. Excavations and depressions resulting from the removal of these items must be backfilled with engineered fill.

Removal of surface organics would depend on the condition and quantity of the organics at the time grading is to begin. Discing of the organics may be suitable for construction, if the organic concentrations are not too heavy at the time of grading. Stripping of the organics likely would be required if organic concentrations are very thick, with strippings being completely removed from the site or used only in landscape areas.

Loose, soft, organically contaminated, or saturated soils encountered during site preparation, are not considered suitable for support of future improvements. Removal of these materials to expose firm, undisturbed native soils, and backfilling with engineered fill will be required.

Drainage swales to be backfilled should be drained of water, and cleaned of organics and saturated or unstable soils to expose firm, native soil. The excavated soils from the features are anticipated to be at elevated moisture contents and may contain high concentrations of organics; therefore, the materials may need to be disposed of off-site and not reused as fill materials within structural areas. Subsurface drainage should be provided in areas with drainage swales.

Areas designated to receive fill and at-grade areas are typically ripped to a depth of about 12 inches, thoroughly moisture conditioned, and uniformly compacted. Standard fill construction and compaction procedures, including uniform moisture conditioning, placement of fill in six-inch lifts and compaction to at least 90 percent of the maximum dry density, would be suitable for support of the planned structures. Engineered fills placed on sloping ground would need to be properly keyed and benched into existing hillsides.

Typically, only native soils (in lieu of select sand backfill) are recommended for use as backfill in the upper portion of utility trenches located within building footprints and extend at least five feet beyond the perimeter foundation to minimize water transmission beneath the homes. Utility

trench backfill is generally thoroughly moisture conditioned to at least the optimum moisture content and mechanically compacted.

Due to the potential expansion characteristics of the native clay soils, the upper 12 to 18 inches of the final subgrade below the building footprints and at-grade structures, including exterior flatwork, should consist of imported non-expansive engineered fill or on site soils that have been determined to be non-expansive. Consideration may also be given to chemically amending the native clayey soils.

Building Foundations

In general, we anticipate the proposed residential structures at the site could be supported upon conventional continuous and/or isolated spread foundations. Minimum foundation widths of 12 inches for continuous foundation and 18 inches wide for isolated spread foundations would be applicable.

However, areas where clayey soils are exposed or are within 12 to 18 inches of the final building pad may require alternative foundations or designs, such as post-tensioned slabs. Post-tension slabs are typically 10-inches thick with deepened edges.

We anticipate a bearing capacity on the order of 2000 pounds per square foot (psf) for dead plus live load would be applicable for residential foundations bearing in re-compacted native materials, engineered fill, or a combination of these materials.

Interior concrete slab-on-grade floors used in conjunction with conventional foundations would be suitable for this site, provided slabs are properly designed and constructed with regard to reinforcement and moisture vapor penetration resistance. Typical slab reinforcement used in conjunction with deepened conventional foundations would consist of at least No. 3 rebar at 18-inch center-to-center spacing, and include appropriate slab ties typically spaced at 54-inch centers. Proper reinforcement of slab-on-grade and moisture conditioning (i.e. pre-saturation) of upper 12 inches of subgrade soils prior to concrete placement will be particularly crucial due to the on-site expansive soils.

Final foundation design will depend on the final site grades relative to the expansive clay soils and should be determined in a design level report once additional information regarding the proposed development becomes available.

Preliminary Pavement Design

The surface and near-surface soils at the test pit locations exhibited moderate to good subgrade qualities for support of asphalt concrete pavements. Laboratory testing of two samples of near-surface soils indicate that these materials possess Resistance ("R") values of

30 and 51; as presented on Figures A4 and A5. We have conservatively used an R-value of 25 for preliminary design purposes for the calculation of alternative pavement sections.

The following preliminary pavement sections provided in Table have been calculated based on the R-value test results and a design life of 20 years. Traffic indices (TI) were selected consistent with the minimum requirements of Sacramento County.

TABLE 3
PRELIMINARY PAVEMENT DESIGN ALTERNATIVES

Traffic Index (TI)	Street Class Right-of-Way Width	R-value = 25	
		Type B Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)
5.0	Residential Streets <54' Right-of-Way	2½	8
		3*	7
6.0	Residential Collector Street ≥54' Right-of-Way (no bus traffic)	2½	11
		3½*	9
6.5	Two lane commercial street with all bus routes	3	12
		4*	10
8.0	Arterial (84' Right-of-Way)	4	14
		5*	12

Note: *Asphalt thickness includes Caltrans Factor of Safety.

We emphasize that the performance of a pavement is critically dependent upon uniform compaction of the subgrade soils, as well as all engineered fill and utility trench backfill within the limits of the pavements.

Efficient drainage of all surface water to avoid infiltration and saturation of the supporting aggregate base and subgrade soils is important to the performance of pavements. Where drop inlets or other surface drainage features are to be constructed, weep holes could be provided at the base/subgrade level to allow free drainage of collected water, and reduce the potential of saturating the subgrade soils.

Future Geotechnical Engineering Study

Prior to final design and the start of construction, a design-level geotechnical engineering report must be prepared for this property that includes additional subsurface explorations and soil sampling, laboratory testing, and engineering evaluation. The final report should present geotechnical engineering conclusions and specific recommendations for site preparation, foundation design, floor support, retaining wall design, site drainage, and pavement design. When the project reaches this stage of development, we would be pleased to provide a proposal for these services.

LIMITATIONS

The findings and conclusions contained in this preliminary report are intended as a general overview of available geologic information combined with limited fieldwork and office analysis. We have used engineering judgment based upon the information provided and the data generated from the site reconnaissance, field exploration, and review of files for adjacent projects. We emphasize that this report is general in nature and intended for use in planning and budgeting for the project, and is applicable only to the investigated site.

This report has been prepared in substantial compliance with generally accepted geotechnical engineering practices that exist in the area of the project at the time the report was prepared. No warranty, either express or implied, is provided.

Wallace-Kuhl & Associates

REGISTERED PROFESSIONAL ENGINEER
MICHAEL M. WATARI
NO. 2675
Exp. 12-31-17
GEOTECHNICAL
STATE OF CALIFORNIA

9/26/16

Alexander D. Wright
Staff Engineer

Michael M. Watari
Senior Engineer

ADW:MMW:/adw

REFERENCES

American Society of Civil Engineers (ASCE), 2010, Minimum Design Loads for Buildings and Other Structures.

California Building Standards Commission, 2013, California Code of Regulations, Title 24, Chapter 16A, "California Building Code," California amendments to the 2012 edition of the International Building Code.

California Division of Mines and Geology, 1981, *Geologic Map of the Sacramento Quadrangle, California, 1:250,000*. Compiled by: Wagner, D. L., Jennings, C. W., Bedrossain, T. L., and Bortugno, E.J.

California Department of Transportation (Caltrans), 2012, Corrosion Guidelines, v2.0: Sacramento, CA, November, 44 p.

California Department of Transportation (CALTRANS), 2016, Highway Design Manual, 6th edition, July.

Cramer, C.H., Toppozada, T.R., and Parke, D.L., 1978, Seismicity of the Foothills Fault System between Fulsom and Oroville, California. California. Bulletin of the Seismological Society of America, v. 68, no. 1, pp 245-249.

Higgens, C.T., and Clinkenbeard, J.P, 2006, *Relative Likelihood for the Presence of Naturally Occuring Asbestos in Eastern Sacramento County, California.* California Geological Survey Special Report 192.

Sacramento County, 2009, Improvement Standards (New Development). November, 127p.

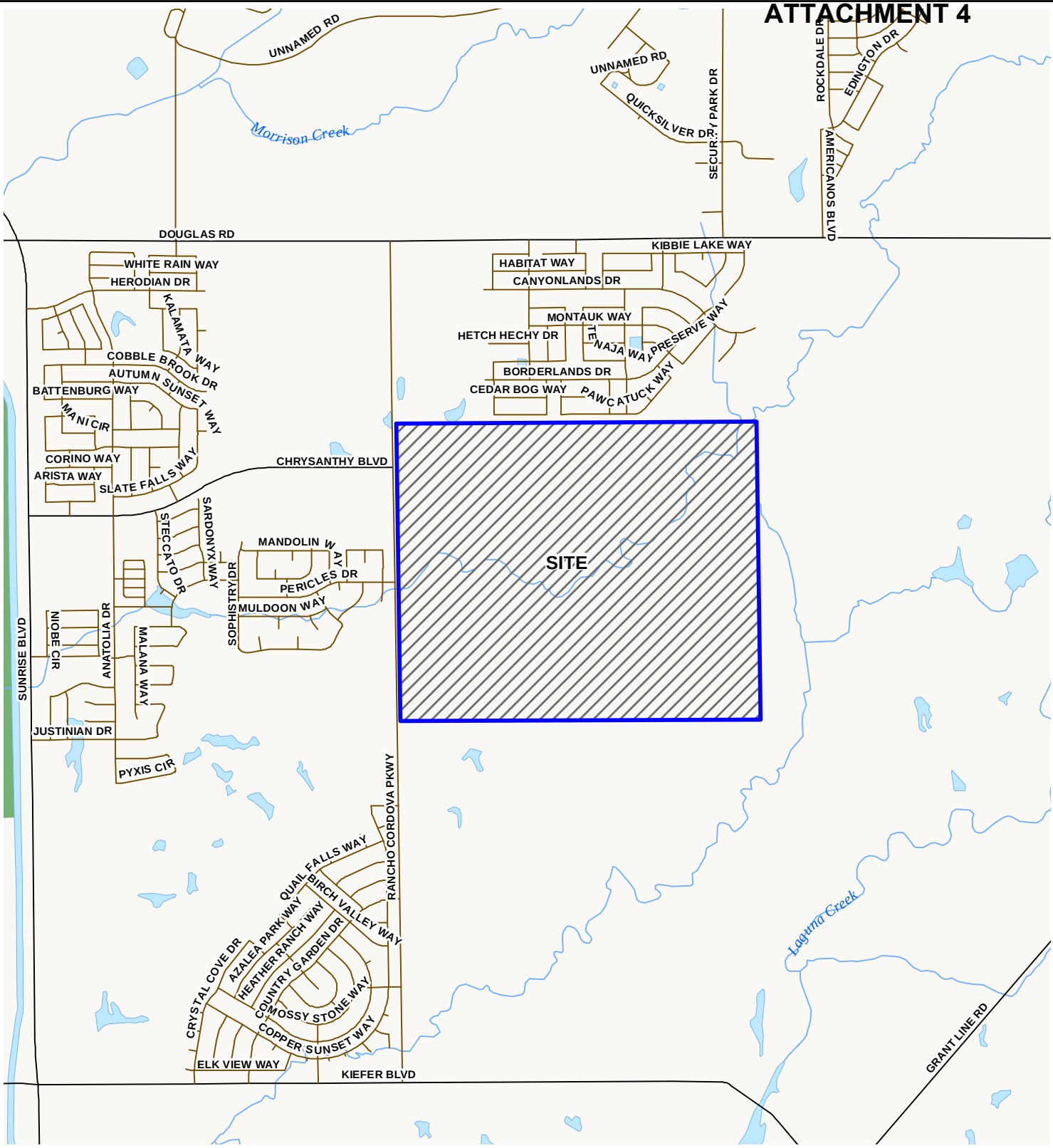
Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. *Web Soil Survey*. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed September 13, 2016.

State Water Resources Control Board, California Water Boards. GeoTracker GAMA. *Central Valley Regional Water Quality Control Board Case Number SL205493018*. Available online at http://geotracker.waterboards.ca.gov/. Accessed September 13, 2016.

Wallace-Kuhl & Associates, 2016, *DRAFT Phase I Environmental Site Assessment Jaeger Ranch Property*. Prepared for the True Life Companies of San Ramon California. September, 65p.

United States Geological Society. *U.S. Seismic Design Maps*. Available online at http://earthquake.usgs.gov/designmaps/us/application.php. Accessed September 13, 2016.

FIGURES



Street data courtesy of Sacramento County.
Hydrography courtesy of the U.S. Geological Survey
acquired from the GIS Data Depot, December, 2007.
Projection: NAD 83, California State Plane, Zone II

0 1,000 2,000
Feet

WallaceKuhl & ASSOCIATES

VICINITY MAP

JAEGER RANCH PROPERTY

Sacramento, California

FIGURE	1
DRAWN BY	RWO
CHECKED BY	ADW
PROJECT MGR	MMW
DATE	09/16
WKA NO. 11103.02	

ATTACHMENT 4

Aerial provided by ESRI.
Site Plan adapted from drawing provided by Wood Rodgers, dated May 11, 2016.
Projection: NAD 83, California State Plane, Zone II

Legend

Site Boundary

Approximate Test Pit Location

0 450 900
Feet

WallaceKuhl & Associates

SITE PLAN

JAEGER RANCH PROPERTY

Sacramento, California

FIGURE	2
DRAWN BY	RWO
CHECKED BY	ADW
PROJECT MGR	MMW
DATE	09/16
WKA NO. 11103.02	

Project: Jaeger Ranch Property
Project Location: Rancho Cordova, California
WKA Number: 11103.02

LOG OF SOIL BORING TP1

Sheet 1 of 1

Date(s) Drilled	**8/16/16**	Logged By	**ADW**	Checked By	**MMW**
Drilling Method	**Backhoe**	Drilling Contractor	**Ron Tillford**	Total Depth of Drill Hole	**10.0 feet**
Drill Rig Type	**580 Case Super M**	Diameter(s) of Hole, inches	**24" Bucket**	Approx. Surface Elevation, ft MSL	
Groundwater Depth [Elevation], feet		Sampling Method(s)	**Bulk, Hand Sampler**	Drill Hole Backfill	**Soil cuttings**
Remarks				Driving Method and Drop	

ELEVATION, feet	DEPTH, feet	GRAPHIC LOG	ENGINEERING CLASSIFICATION AND DESCRIPTION	SAMPLE DATA: SAMPLE	SAMPLE DATA: SAMPLE NUMBER	SAMPLE DATA: NUMBER OF BLOWS	TEST DATA: MOISTURE CONTENT, %	TEST DATA: DRY UNIT WEIGHT, pcf	TEST DATA: ADDITIONAL TESTS
			Brown, moist, silty fine to coarse SAND [SM]		TP1-1				RV
			Light brown, moist, lean clayey / silty fine SAND [SC/SM]		TP1-2I		11.6	89	
			Brown, moist, poorly graded fine to coarse GRAVEL with fine to coase sand and cobbles [GP]						
	5		Brown, moist, lean clayey fine to coarse rounded GRAVEL with fine to coarse sand [GC]						
			Brown, moist, silty fine to coarse GRAVEL with fine to coarse sand and cobbles [GM]						
	10		Bottom of test pit at 10 feet. Groundwater not encountered.						

BORING LOG 11103.02 - JAEGER RANCH PROPERTY.GPJ WKA.GDT 9/26/16 10:43 AM

Wallace Kuhl & ASSOCIATES

FIGURE 3

Project: Jaeger Ranch Property
Project Location: Rancho Cordova, California
WKA Number: 11103.02

LOG OF SOIL BORING TP2

Sheet 1 of 1

Date(s) Drilled	**8/16/16**	Logged By	**ADW**	Checked By	**MMW**
Drilling Method	**Backhoe**	Drilling Contractor	**Ron Tillford**	Total Depth of Drill Hole	**7.5 feet**
Drill Rig Type	**580 Case Super M**	Diameter(s) of Hole, inches	**24" Bucket**	Approx. Surface Elevation, ft MSL	
Groundwater Depth [Elevation], feet		Sampling Method(s)	**Bulk, Hand Sampler**	Drill Hole Backfill	**Soil cuttings**
Remarks				Driving Method and Drop	

ELEVATION, feet	DEPTH, feet	GRAPHIC LOG	ENGINEERING CLASSIFICATION AND DESCRIPTION	SAMPLE DATA: SAMPLE	SAMPLE DATA: SAMPLE NUMBER	SAMPLE DATA: NUMBER OF BLOWS	TEST DATA: MOISTURE CONTENT, %	TEST DATA: DRY UNIT WEIGHT, pcf	TEST DATA: ADDITIONAL TESTS
			Brown, moist, silty fine to coarse SAND [SM] with trace fine to medium gravel		TP2-1				
			Red, moist, fine sandy lean CLAY [CL] with trace fine to medium gravel		TP2-2I		16.0	95	GD, AT
	5		Red, moist, lean clayey GRAVEL with fine sand [GC] with trace cobbles		TP2-3I				
			Practical refusal encountered at 7.5 feet. Groundwater not encountered.						

BORING LOG 11103.02 - JAEGER RANCH PROPERTY.GPJ WKA.GDT 9/26/16 10:43 AM

WallaceKuhl & ASSOCIATES

FIGURE 4

Project: Jaeger Ranch Property
Project Location: Rancho Cordova, California
WKA Number: 11103.02

LOG OF SOIL BORING TP3

Sheet 1 of 1

Date(s) Drilled	**8/16/16**	Logged By	**ADW**	Checked By	**MMW**
Drilling Method	**Backhoe**	Drilling Contractor	**Ron Tillford**	Total Depth of Drill Hole	**9.5 feet**
Drill Rig Type	**580 Case Super M**	Diameter(s) of Hole, inches	**24" Bucket**	Approx. Surface Elevation, ft MSL	
Groundwater Depth [Elevation], feet		Sampling Method(s)	**Bulk, Hand Sampler**	Drill Hole Backfill	**Soil cuttings**
Remarks				Driving Method and Drop	

ELEVATION, feet	DEPTH, feet	GRAPHIC LOG	ENGINEERING CLASSIFICATION AND DESCRIPTION	SAMPLE DATA: SAMPLE	SAMPLE DATA: SAMPLE NUMBER	SAMPLE DATA: NUMBER OF BLOWS	TEST DATA: MOISTURE CONTENT, %	TEST DATA: DRY UNIT WEIGHT, pcf	TEST DATA: ADDITIONAL TESTS
			Brown, dry, variably cemented, fine sandy silty lean CLAY [CL-ML] with trace fine gravel		TP3-1				GD
					TP3-2I		4.8	109	AT
			Brown, dry to moist, variably cemented, fine to coarse SAND with silt [SP]						
	5		Reddish brown, moist, poorly graded fine to coarse GRAVEL with fine to coarse sand [GP]						
			Reddish bronw, moist, poorly graded fine to coarse GRAVEL with fine to coarse sand and cobbles [GP]						
			Bottom of test pit at 9.5 feet. Groundwater not encountered.						

BORING LOG 11103.02 - JAEGER RANCH PROPERTY.GPJ WKA.GDT 9/26/16 10:43 AM

Wallace Kuhl & ASSOCIATES

FIGURE 5

Project: Jaeger Ranch Property
Project Location: Rancho Cordova, California
WKA Number: 11103.02

LOG OF SOIL BORING TP4

Sheet 1 of 1

Date(s) Drilled	**8/16/16**	Logged By	**ADW**	Checked By	**MMW**
Drilling Method	**Backhoe**	Drilling Contractor	**Ron Tillford**	Total Depth of Drill Hole	**9.3 feet**
Drill Rig Type	**580 Case Super M**	Diameter(s) of Hole, inches	**24" Bucket**	Approx. Surface Elevation, ft MSL	
Groundwater Depth [Elevation], feet		Sampling Method(s)	**Bulk**	Drill Hole Backfill	**Soil cuttings**
Remarks				Driving Method and Drop	

ELEVATION, feet	DEPTH, feet	GRAPHIC LOG	ENGINEERING CLASSIFICATION AND DESCRIPTION	SAMPLE DATA: SAMPLE	SAMPLE DATA: SAMPLE NUMBER	SAMPLE DATA: NUMBER OF BLOWS	TEST DATA: MOISTURE CONTENT, %	TEST DATA: DRY UNIT WEIGHT, pcf	TEST DATA: ADDITIONAL TESTS
			Reddish brown, dry, variably cemented, lean clayey fine to medium SAND [SC] with trace fine to medium gravel						
			Red, dry to moist, lean clayey fine to coarse SAND with gravel [SC] with trace fine to coarse gravel		TP4-1				
	5		Reddosh brown, moist, lean clayey fine to coarse GRAVEL with fine to coarse sand [GC]						
			Reddish brown, moist, well graded fine to coarse GRAVEL withfine to coarse sand [GP]						
			Practical refusal encountered at 9.25 feet. Groundwater not encountered.						

BORING LOG 11103.02 - JAEGER RANCH PROPERTY.GPJ WKA.GDT 9/26/16 10:43 AM

Wallace Kuhl & ASSOCIATES

FIGURE 6

Project: Jaeger Ranch Property
Project Location: Rancho Cordova, California
WKA Number: 11103.02

LOG OF SOIL BORING TP5

Sheet 1 of 1

Date(s) Drilled	**8/16/16**	Logged By	**ADW**	Checked By	**MMW**
Drilling Method	**Backhoe**	Drilling Contractor	**Ron Tillford**	Total Depth of Drill Hole	**10.0 feet**
Drill Rig Type	**580 Case Super M**	Diameter(s) of Hole, inches	**24" Bucket**	Approx. Surface Elevation, ft MSL	
Groundwater Depth [Elevation], feet		Sampling Method(s)	**Bulk, Hand Sampler**	Drill Hole Backfill	**Soil cuttings**
Remarks				Driving Method and Drop	

ELEVATION, feet	DEPTH, feet	GRAPHIC LOG	ENGINEERING CLASSIFICATION AND DESCRIPTION	SAMPLE DATA: SAMPLE	SAMPLE DATA: SAMPLE NUMBER	SAMPLE DATA: NUMBER OF BLOWS	TEST DATA: MOISTURE CONTENT, %	TEST DATA: DRY UNIT WEIGHT, pcf	TEST DATA: ADDITIONAL TESTS
			Red, dry, silty fine to medium SAND [SM] with trace fine gravel		TP5-1				CR
					TP5-2I		5.6	119	TR
			Red, moist, lean clayey fine SAND [SC]						
	5		Reddish brown, moist, variably cemented, well graded fine to coarse SAND with lean clay [SW]						
			Reddish brown, moist, well graded fine to coarse GRAVEL with fine to coarse sand and cobbles [GW]						
	10		Bottom of test pit at 10.0 feet. Groundwater not encountered.						

BORING LOG 11103.02 - JAEGER RANCH PROPERTY.GPJ WKA.GDT 9/26/16 10:43 AM

Wallace Kuhl & ASSOCIATES

FIGURE 7

Project: Jaeger Ranch Property
Project Location: Rancho Cordova, California
WKA Number: 11103.02

LOG OF SOIL BORING TP6

Sheet 1 of 1

Date(s) Drilled	**8/16/16**	Logged By	**ADW**	Checked By	**MMW**
Drilling Method	**Backhoe**	Drilling Contractor	**Ron Tillford**	Total Depth of Drill Hole	**10.0 feet**
Drill Rig Type	**580 Case Super M**	Diameter(s) of Hole, inches	**24" Bucket**	Approx. Surface Elevation, ft MSL	
Groundwater Depth [Elevation], feet		Sampling Method(s)	**Bulk**	Drill Hole Backfill	**Soil cuttings**
Remarks				Driving Method and Drop	

ELEVATION, feet	DEPTH, feet	GRAPHIC LOG	ENGINEERING CLASSIFICATION AND DESCRIPTION	SAMPLE DATA: SAMPLE	SAMPLE DATA: SAMPLE NUMBER	SAMPLE DATA: NUMBER OF BLOWS	TEST DATA: MOISTURE CONTENT, %	TEST DATA: DRY UNIT WEIGHT, pcf	TEST DATA: ADDITIONAL TESTS
			Dark reddish brown, dry, silty fine SAND [SM]		TP6-1				
			becomes variably cemented at 2 feet						
	5		Brown, moist, well graded fine to coarse GRAVEL with fine to coarse sand and cobbles [GW]						
					TP6-2		7.2		
			Brown, moist, clayey fine to coarse GRAVEL with fine to coarse sand and cobbles [GC]						
	10		Practical refusal encountered at 10 feet. Groundwater not encountered.						

BORING LOG 11103.02 - JAEGER RANCH PROPERTY.GPJ WKA.GDT 9/26/16 10:43 AM

Wallace Kuhl & ASSOCIATES

FIGURE 8

Project: Jaeger Ranch Property
Project Location: Rancho Cordova, California
WKA Number: 11103.02

LOG OF SOIL BORING TP7

Sheet 1 of 1

Date(s) Drilled	**8/16/16**	Logged By	**ADW**	Checked By	**MMW**
Drilling Method	**Backhoe**	Drilling Contractor	**Ron Tillford**	Total Depth of Drill Hole	**10.0 feet**
Drill Rig Type	**580 Case Super M**	Diameter(s) of Hole, inches	**24" Bucket**	Approx. Surface Elevation, ft MSL	
Groundwater Depth [Elevation], feet		Sampling Method(s)	**Bulk**	Drill Hole Backfill	**Soil cuttings**
Remarks				Driving Method and Drop	

ELEVATION, feet	DEPTH, feet	GRAPHIC LOG	ENGINEERING CLASSIFICATION AND DESCRIPTION	SAMPLE DATA: SAMPLE	SAMPLE DATA: SAMPLE NUMBER	SAMPLE DATA: NUMBER OF BLOWS	TEST DATA: MOISTURE CONTENT, %	TEST DATA: DRY UNIT WEIGHT, pcf	TEST DATA: ADDITIONAL TESTS
			Dark brown, dry, variably cemented, silty fine to medium SAND [SM] with trace fine gravel		TP7-1				
			Dark brown, moist, variably cemented, well graded fine to coarse SAND [SW]						
	5		Dark brown, moist, well graded fine to coarse GRAVEL with fine to coarse sand [GW] and trace cobbles						
	10		Bottom of test pit at 10 feet. Groundwater not encountered.						

BORING LOG 11103.02 - JAEGER RANCH PROPERTY.GPJ WKA.GDT 9/26/16 10:43 AM

Wallace Kuhl & ASSOCIATES

FIGURE 9

Project: Jaeger Ranch Property
Project Location: Rancho Cordova, California
WKA Number: 11103.02

LOG OF SOIL BORING TP8

Sheet 1 of 1

Date(s) Drilled	**8/16/16**	Logged By	**ADW**	Checked By	**MMW**
Drilling Method	**Backhoe**	Drilling Contractor	**Ron Tillford**	Total Depth of Drill Hole	**10.5 feet**
Drill Rig Type	**580 Case Super M**	Diameter(s) of Hole, inches	**24" Bucket**	Approx. Surface Elevation, ft MSL	
Groundwater Depth [Elevation], feet		Sampling Method(s)	**Bulk, Hand Sampler**	Drill Hole Backfill	**Soil cuttings**
Remarks				Driving Method and Drop	

ELEVATION, feet	DEPTH, feet	GRAPHIC LOG	ENGINEERING CLASSIFICATION AND DESCRIPTION	SAMPLE DATA: SAMPLE	SAMPLE DATA: SAMPLE NUMBER	SAMPLE DATA: NUMBER OF BLOWS	TEST DATA: MOISTURE CONTENT, %	TEST DATA: DRY UNIT WEIGHT, pcf	TEST DATA: ADDITIONAL TESTS
			Dark reddish brown, dry, variably cemented, silty fine to medium SAND [SM]		TP8-1				
					TP8-2I		9.5	107	
					TP8-3I				
			Dark reddish brown to brown, moist, variably cemented, lean clayey fine SAND [SC]		TP8-4I		10.8	112	GD, AT
					TP8-5I				GD
	5								
			Brown, moist, silty fine to medium SAND [SM]						
	10								
			Bottom of test pit at 10.5 feet. Groundwater not encountered.						

BORING LOG 11103.02 - JAEGER RANCH PROPERTY.GPJ WKA.GDT 9/26/16 10:43 AM

Wallace Kuhl & ASSOCIATES

FIGURE 10

Project: Jaeger Ranch Property
Project Location: Rancho Cordova, California
WKA Number: 11103.02

LOG OF SOIL BORING TP9

Sheet 1 of 1

Date(s) Drilled	**8/16/16**	Logged By	**ADW**	Checked By	**MMW**
Drilling Method	**Backhoe**	Drilling Contractor	**Ron Tillford**	Total Depth of Drill Hole	**10.0 feet**
Drill Rig Type	**580 Case Super M**	Diameter(s) of Hole, inches	**24" Bucket**	Approx. Surface Elevation, ft MSL	
Groundwater Depth [Elevation], feet		Sampling Method(s)	**Bulk**	Drill Hole Backfill	**Soil cuttings**
Remarks				Driving Method and Drop	

ELEVATION, feet	DEPTH, feet	GRAPHIC LOG	ENGINEERING CLASSIFICATION AND DESCRIPTION	SAMPLE DATA: SAMPLE	SAMPLE DATA: SAMPLE NUMBER	SAMPLE DATA: NUMBER OF BLOWS	TEST DATA: MOISTURE CONTENT, %	TEST DATA: DRY UNIT WEIGHT, pcf	TEST DATA: ADDITIONAL TESTS
			Dark reddish brown, dry, variably cemented, silty clayey fine to medium SAND [SC-SM]		TP9-1				RV
			Dark reddish brown, moist, variably cemented, lean clayey fine to medium SAND [SC]						
			Brown, moist, variably cemented, poorly graded fine to medium SAND with lean clay [SP]						
	5				TP9-2				
			Reddish brown, moist, well graded fine to coarse GRAVEL with fine to coarse sand [GW]						
	10		Bottom of test pit at 10 feet. Groundwater not encountered.						

BORING LOG 11103.02 - JAEGER RANCH PROPERTY.GPJ WKA.GDT 9/26/16 10:43 AM

Wallace Kuhl & ASSOCIATES

FIGURE 11

Project: Jaeger Ranch Property
Project Location: Rancho Cordova, California
WKA Number: 11103.02

LOG OF SOIL BORING TP10

Sheet 1 of 1

Date(s) Drilled	**8/16/16**	Logged By	**ADW**	Checked By	**MMW**
Drilling Method	**Backhoe**	Drilling Contractor	**Ron Tillford**	Total Depth of Drill Hole	**7.0 feet**
Drill Rig Type	**580 Case Super M**	Diameter(s) of Hole, inches	**24" Bucket**	Approx. Surface Elevation, ft MSL	
Groundwater Depth [Elevation], feet		Sampling Method(s)	**Bulk**	Drill Hole Backfill	**Soil cuttings**
Remarks				Driving Method and Drop	

ELEVATION, feet	DEPTH, feet	GRAPHIC LOG	ENGINEERING CLASSIFICATION AND DESCRIPTION	SAMPLE DATA: SAMPLE	SAMPLE DATA: SAMPLE NUMBER	SAMPLE DATA: NUMBER OF BLOWS	TEST DATA: MOISTURE CONTENT, %	TEST DATA: DRY UNIT WEIGHT, pcf	TEST DATA: ADDITIONAL TESTS
			Dark reddish brown, dry, variably cemented, silty fine to medium SAND [SM]		TP10-1				
					TP10-2		11.1		
			Brown, dry to moist, variably cemented, poorly graded fine to medium SAND with silt [SP]						
	5				TP10-3				
			Practical refusal encountered at 7 feet. Groundwater not encountered.						

BORING LOG 11103.02 - JAEGER RANCH PROPERTY.GPJ WKA.GDT 9/26/16 10:43 AM

Wallace Kuhl & ASSOCIATES

FIGURE 12

ATTACHMENT 4

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS		SYMBOL	CODE	TYPICAL NAMES
COARSE GRAINED SOILS (More than 50% of soil > no. 200 sieve size)	GRAVELS (More than 50% of coarse fraction > no. 4 sieve size)	GW		Well graded gravels or gravel - sand mixtures, little or no fines
		GP		Poorly graded gravels or gravel - sand mixtures, little or no fines
		GM		Silty gravels, gravel - sand - silt mixtures
		GC		Clayey gravels, gravel - sand - clay mixtures
	SANDS (50% or more of coarse fraction < no. 4 sieve size)	SW		Well graded sands or gravelly sands, little or no fines
		SP		Poorly graded sands or gravelly sands, little or no fines
		SM		Silty sands, sand - silt mixtures
		SC		Clayey sands, sand - clay mixtures
FINE GRAINED SOILS (50% or more of soil < no. 200 sieve size)	SILTS & CLAYS LL < 50	ML		Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
		CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL		Organic silts and organic silty clays of low plasticity
	SILTS & CLAYS LL ≥ 50	MH		Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH		Inorganic clays of high plasticity, fat clays
		OH		Organic clays of medium to high plasticity, organic silty clays, organic silts
HIGHLY ORGANIC SOILS		Pt		Peat and other highly organic soils
ROCK		RX		Rocks, weathered to fresh
FILL		FILL		Artificially placed fill material

OTHER SYMBOLS

= Drive Sample: 2-1/2" O.D. Modified California sampler

= Drive Sampler: no recovery

= SPT Sampler

= Initial Water Level

= Final Water Level

= Estimated or gradational material change line

= Observed material change line

Laboratory Tests

AT = Atterberg Limits Test
EI = Expansion Index
CR = Corrosion Test
TR = Triaxial Compression Test
GD = Gradational Analysis (Sieve)
RV = R-Value

GRAIN SIZE CLASSIFICATION

CLASSIFICATION	RANGE OF GRAIN SIZES	
	U.S. Standard Sieve Size	Grain Size in Millimeters
BOULDERS	Above 12"	Above 305
COBBLES	12" to 3"	305 to 76.2
GRAVEL coarse (c) fine (f)	3" to No. 4 3" to 3/4" 3/4" to No. 4	76.2 to 4.76 76.2 to 19.1 19.1 to 4.76
SAND coarse (c) medium (m) fine (f)	No. 4 to No. 200 No. 4 to No. 10 No. 10 to No. 40 No. 40 to No. 200	4.76 to 0.074 4.76 to 2.00 2.00 to 0.420 0.420 to 0.074
SILT & CLAY	Below No. 200	Below 0.074

WallaceKuhl & ASSOCIATES

UNIFIED SOIL CLASSIFICATION SYSTEM

JAEGER RANCH PROPERTY

Sacramento, California

FIGURE	13
DRAWN BY	RWO
CHECKED BY	ADW
PROJECT MGR	MMW
DATE	09/16
WKA NO.	11103.02

APPENDIX A
Field and Laboratory Test Results

APPENDIX A

A. GENERAL INFORMATION

The performance of a preliminary geotechnical engineering study for the *Jaeger Ranch Property* located easterly of the intersection of Pericles Drive and Rancho Cordova Parkway in Rancho Cordova, California was authorized by Ms. Leah Dreger of The True Life Companies on August 9, 2016. Authorization was for a preliminary geotechnical study as described in our proposal letter dated August 2, 2016, sent to our client, The True Life Companies, whose mailing address is 12647 Alcosta Boulevard, Suite 470 in San Ramon, California 94583; telephone (925) 380-1699.

To assist in the preparation of this preliminary report, we have reviewed the Conceptual Site Plan, dated May 11, 2016, prepared by Wood Rodgers, Inc. of Sacramento, California.

B. FIELD EXPLORATION

We observed the site conditions and performed subsurface explorations at the site on August 16 and September 12, 2016. Field explorations consisted of excavating and sampling 10 test pits to depths of approximately 7 to 10½ feet below the existing surface grades. Soils exposed in the trenches were classified as required by the 2013 CBC in accordance with ASTM D2487 (USCS symbol shown on logs). Soil names and descriptions are reported using a modified system.

Test pits were completed by using a Case 580 Super M excavator and a 24-inch-wide bucket provided by Ron Tilford Backhoe of Orangevale, California. Relatively undisturbed soil samples were obtained at various intervals in selected test pits using a hand driven core sampler and California Sampler liners (1.875-inch-inside diameter). In addition, bulk samples were obtained from the test pits at various depths. \At the completion of exploration activities, the test pits were backfilled with excavation spoils, and compacted using a sheepsfoot compaction wheel.

The approximate locations of the test pits are provided in Figure 2. Descriptions of the soils encountered in the test pits are presented in Figures 3 to 12. An explanation of the Unified Soil Classification System symbols used in the soil descriptions is presented on Figure 13.

C. LABORATORY TESTING

Selected soil samples were tested to determine dry unit weight (ASTM D2937) and natural moisture content (ASTM D4643). The results of these tests are included on the boring logs at the depth each sample was obtained.

Selected representative samples of soils at the site were also tested to determine Atterberg limits (ASTM D4318) and grain-size distribution (gradation) (ASTM C136); the results are contained in Figures A1 and A2, respectively.

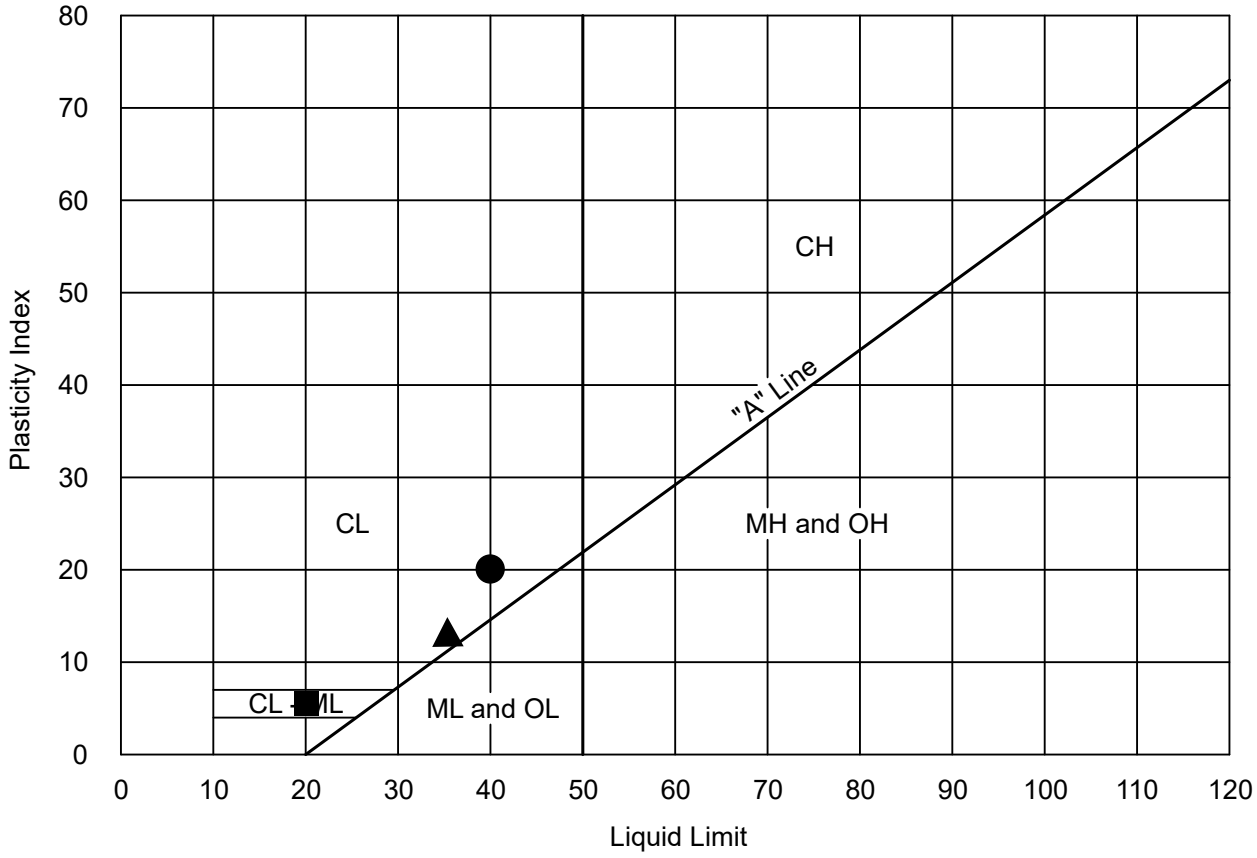
A sample of the near-surface soil was tested to evaluate shear strengths using a consolidated undrained with pore pressures triaxial test, commonly known as a CUPP triaxial test (ASTM D4767) with results presented in Figure A3.

Two representative samples of near-surface soil were subjected to Resistance “R” value testing (CT 301). The test results were used for pavement design purposes and are presented in Figure A4.

A sample of the near-surface soil was submitted to Sunland Analytical of Rancho Cordova, California, to determine the soil pH and minimum resistivity (California Test 643), Sulfate concentration (California Test 417, ASTM D516) and Chloride concentration (California Test 422). The results of these tests are presented in Figures A5 and A6.

ATTERBERG LIMITS

ASTM D4318



KEY SYMBOL	LOCATION	SAMPLE DEPTH	NATURAL WATER CONTENT (%)	ATTERBERG LIMITS		PASSING No. 200 SIEVE (%)	UNIFIED SOIL CLASSIFI-CATION SYMBOL
				LIQUID LIMIT (%)	PLASTICITY INDEX (%)		
●	TP2-2I	2.0'-2.5'	16.0	40	20	64.5	CL
■	TP3-2I	1.5'-2.0'	4.8	20	6	59.8*	CL-ML
▲	TP8-4	3.0'-3.5'	10.8	36	13	28.8	SC

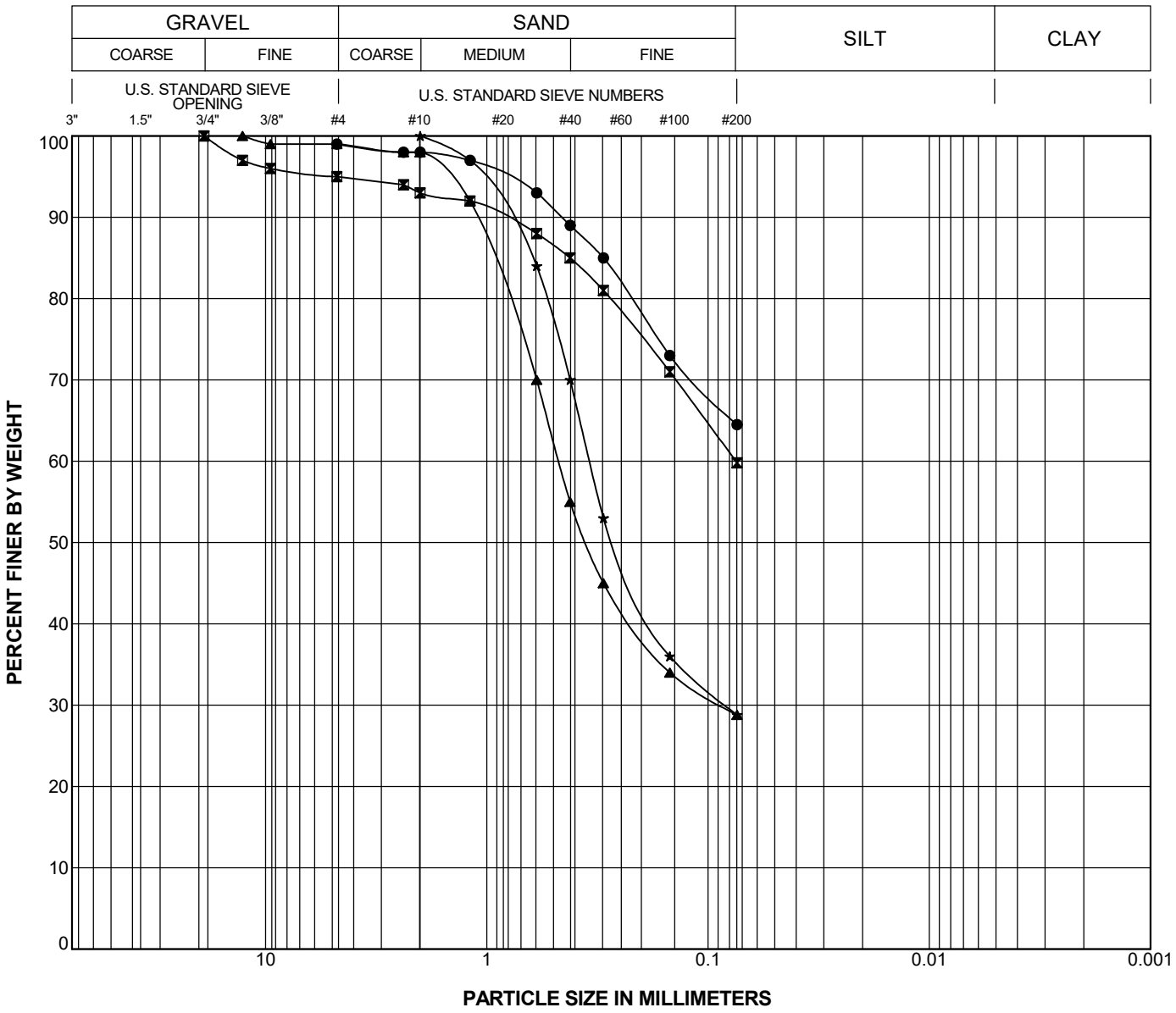
Wallace Kuhl & ASSOCIATES

ATTERBERG LIMITS

JAEGER RANCH PROPERTY

Sacramento, California

FIGURE	A1
DRAWN BY	RWO
CHECKED BY	ADW
PROJECT MGR	MMW
DATE	09/16
WKA NO. 11103.02	



Boring Number	Sample Number	USCS	Depth (feet)	Symbol	LL	PI	Classification
TP2	2I	CL	2.0	●	40	20	Red fine sandy lean CLAY [CL]
TP3	1	CL-ML	0.0	⊠			Fine sandy silty lean CLAY [CL-ML]
TP8	4	SC	3.0	▲	36	23	Lean clayey fine SAND [SC]
TP8	5	SC	4.0	★			Lean clayey fine SAND [SC]

PARTICLE SIZE DISTRIBUTION

Project: Jaeger Ranch Property
WKA No. 11103.02

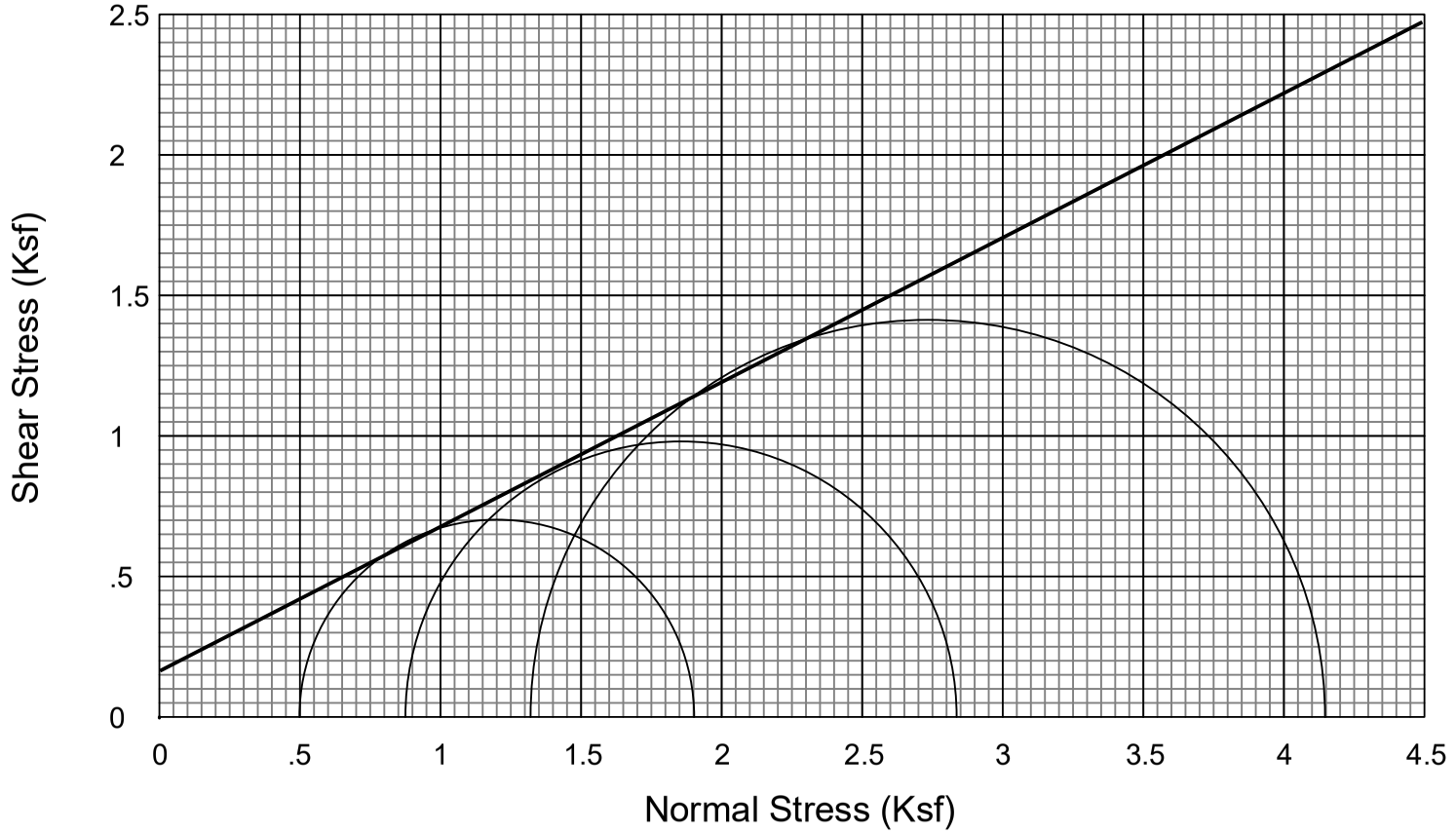
FIGURE A-2

GRAIN SIZE 11103.02 - JAEGER RANCH PROPERTY.GPJ WKA.GDT 9/23/16 8:27 AM

Wallace Kuhl & ASSOCIATES

TRIAXIAL COMPRESSION TEST

ASTM D4767



SAMPLE NO. : TP5-2 (1.0' - 1.5')

SAMPLE DESCRIPTION : Red silty fine SAND [SM]

DRY DENSITY (PCF) : 118.8
INITIAL MOISTURE (%) : 5.6
FINAL MOISTURE (%) : 15.5

ANGLE OF INTERNAL FRICTION (ø) : 27.2°
COHESION (PSF) : 167

ATTACHMENT 4

WallaceKuhl & ASSOCIATES

TRIAXIAL COMPRESSION TEST RESULTS

JAEGER RANCH PROPERTY

Sacramento, California

FIGURE	A3
DRAWN BY	RWO
CHECKED BY	ADW
PROJECT MGR	MMW
DATE	09/16
WKA NO.	11103.02

RESISTANCE VALUE TEST RESULTS

(California Test 301)

MATERIAL DESCRIPTION: Brown silty fine to coarse SAND [SM]

LOCATION: TP1-1 (0' - 2')

Specimen No.	Dry Unit Weight (pcf)	Moisture @ Compaction (%)	Exudation Pressure (psi)	Expansion (dial, inches x 1000)	Expansion (psf)	R Value
1	123	11.8	247	0	0	20
2	124	11.2	466	9	39	44
3	123	11.4	348	0	0	38

R-Value at 300 psi exudation pressure = 30

MATERIAL DESCRIPTION: Dark reddish brown silty clayey fine to medium SAND [SC-SM]

LOCATION: TP9-1 (0' - 2')

Specimen No.	Dry Unit Weight (pcf)	Moisture @ Compaction (%)	Exudation Pressure (psi)	Expansion (dial, inches x 1000)	Expansion (psf)	R Value
1	125	13.1	108	0	0	6
2	127	12.2	229	2	9	43
3	126	11.4	670	27	117	80

R-Value at 300 psi exudation pressure = 51

WallaceKuhl & ASSOCIATES

RESISTANCE VALUE TEST RESULTS

JAEGER RANCH PROPERTY

Sacramento, California

FIGURE	A4
DRAWN BY	RWO
CHECKED BY	ADW
PROJECT MGR	MMW
DATE	09/16
WKA NO.	11103.02

Sunland Analytical
11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 09/16/2016
Date Submitted 09/13/2016

To: Alexander Wright
Wallace-Kuhl & Assoc.
3050 Industrial Blvd
West Sacramento, CA 95691

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following:
Location : 11103.02 JAEGER RNCH Site ID : TP 5-1.
Thank you for your business.

* For future reference to this analysis please use SUN # 72816-152019.

Extractable Sulfate in Water

TYPE OF TEST	RESULTS	UNITS
Sulfate-SO4	2.04	mg/kg

ASTM D-516 from sat.paste extract-reported based on dry wt.

WallaceKuhl & ASSOCIATES

CORROSION TEST RESULTS

JAEGER RANCH PROPERTY

Sacramento, California

FIGURE	A5
DRAWN BY	RWO
CHECKED BY	ADW
PROJECT MGR	MMW
DATE	09/16
WKA NO.	11103.02

Sunland Analytical
11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 09/16/2016
Date Submitted 09/13/2016

To: Alexander Wright
Wallace-Kuhl & Assoc.
3050 Industrial Blvd
West Sacramento, CA 95691

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 11103.02 JAEGER RNCH Site ID : TP 5-1.
Thank you for your business.

* For future reference to this analysis please use SUN # 72816-152020.

EVALUATION FOR SOIL CORROSION

Soil pH	5.22		
Minimum Resistivity	7.50 ohm-cm (x1000)		
Chloride	6.5 ppm	00.00065	%
Sulfate	1.9 ppm	00.00019	%

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

WallaceKuhl & ASSOCIATES

CORROSION TEST RESULTS

JAEGER RANCH PROPERTY

Sacramento, California

FIGURE	A6
DRAWN BY	RWO
CHECKED BY	ADW
PROJECT MGR	MMW
DATE	09/16
WKA NO.	11103.02

APPENDIX F

Phase I Environmental Site Assessment

Phase I Environmental Site Assessment

JAEGER RANCH PROPERTY

Southeast of the Intersection of
Douglas Road and Jaeger Road
Rancho Cordova, California
WKA No. 11103.01
September 22, 2016

DRAFT

Prepared for:

Ms. Leah Dreger
The True Life Companies
12647 Alcosta Boulevard, Suite 470
San Ramon, California 94583

Wallace Kuhl & Associates

CORPORATE OFFICE
3050 Industrial Boulevard
West Sacramento, CA 95691
916.372.1434 phone
916.372.2565 fax

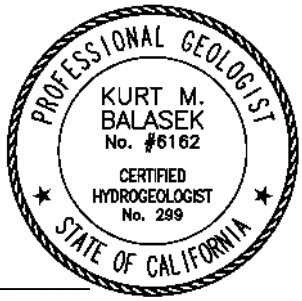
STOCKTON OFFICE
3422 West Hammer Lane, Suite D
Stockton, CA 95219
209.234.7722 phone
209.234.7727 fax

Phase I Environmental Site Assessment
JAEGER RANCH PROPERTY
Southeast of the Intersection of
Douglas Road and Jaeger Road
Rancho Cordova, California
WKA No. 11103.01
September 22, 2016

Wallace-Kuhl & Associates (WKA), on behalf of the CLIENT, prepared this Phase I Environmental Site Assessment for the Jaeger Ranch Property located southeast of the intersection of Douglas Road and Jaeger Road, Rancho Cordova, California. We declare that, to the best of our professional knowledge and belief, both the report preparer and reviewer meets the definition of *Environmental Professional* as defined in §312.10 of 40 CFR 312 and has the "specific qualifications based on education, training, and experience to assess a *property* of the nature, history, and setting of the subject *property*. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312." Resumes of the key staff who prepared this report are included in Appendix A.

DRAFT

WALLACE▪KUHL & ASSOCIATES



Bryan C. Yates
Project Manager

Kurt Balasek, P.G., C.HG.
Environmental Services Manager

Phase I Environmental Site Assessment
JAEGER RANCH PROPERTY

TABLE OF CONTENTS

EXECUTIVE SUMMARY i

1.0 INTRODUCTION 1
1.1 Purpose 1
1.2 Scope of Services 1
1.3 Special Terms and Conditions 2
1.4 User Provided Information 2

2.0 SITE DESCRIPTION 4
2.1 Site and Vicinity General Characteristics 4
2.2 Site Reconnaissance 4
2.2.1 Municipal Infrastructure and Utilities 4
2.3 Adjoining Properties 4

3.0 INTERVIEWS 5
3.1 Owner or Key Site Manager 5
3.2 Occupants (Multi-family or Major) 5
3.3 Past and Present Owners, Operators, and/or Occupants 5
3.4 State and/or Local Government Officials 5
3.5 Abandoned Properties 6

4.0 RECORDS REVIEW 7
4.1 Physical Setting Source(s) 7
4.1.1 Regional and Local Geology 7
4.1.2 Soil Survey 7
4.1.3 Regional and Local Groundwater 8
4.2 Historical Use Information 8
4.2.1 Sanborn® Maps 8
4.2.2 Topographic Maps 9
4.2.3 Oil and Gas Well Maps 10
4.2.4 Aerial Photographs 10
4.2.5 Ownership Records 11
4.2.6 Building Department Records 11
4.2.7 Local Street Directories 11
4.2.8 Zoning and Land Use Records 12
4.2.9 Other Historical Sources 12
4.2.10 Prior Assessments 12
4.3 Environmental Record Sources 12
4.3.1 Regulatory Agency Databases 12
4.3.2 Preliminary Screen For Vapor Encroachment Conditions 14

DRAFT

TABLE OF CONTENTS (continued)

4.3.3 Environmental Lien Search 14
5.0 CONCLUSIONS AND RECOMMENDATIONS 15
5.1 Data Gaps 15
5.2 Conclusions 15
5.3 Recommendations 16
5.4 Exceptions and/or Deletions 16
5.5 Additional Services 16
6.0 LIMITATIONS 17
7.0 REFERENCES 18

FIGURES

1 Vicinity Map
2 Topographic Map
3 Parcel Map
4 Aerial Site Map
5a Color Photographs
5b Color Photographs
6 Hydrograph

DRAFT

APPENDICES

A Resumes
B ASTM E 1527-13 User Questionnaire and Helpful Documents Checklist
C EDR® Radius Map Report Executive Summary
D Preliminary Screen for Vapor Encroachment Conditions Matrix

Attached CD contains: EDR® Reports: (Radius Map Report, Aerial Photographic Decade Package, Historical Topographic Maps, Sanborn Map Search), Lien Search Report and Phase I ESA, Jaeger Ranch (WKA No. 11103.01 dated September 22, 2016).

Phase I Environmental Site Assessment
JAEGER RANCH PROPERTY
WKA No. 11103.01

EXECUTIVE SUMMARY

The purpose of this Phase I Environmental Site Assessment (ESA) was to assess the Jaeger Ranch Property (herein referred to as site) for evidence of Recognized Environmental Conditions (RECs) resulting from current and/or former site activities. The Site is located approximately ½-mile southeast of the intersection of Douglas Road and Jaeger Road in Rancho Cordova, California (Figures 1, 2, 3, and 4) and is comprised of approximately 529 acres of undeveloped land having Sacramento County Assessor's Parcel Number (APN) 06-0040-008-0000 (Figure 3). The following presents a list of observations and findings identified during the preparation of this report:

The historical land use research dating back to the late 1800s revealed that the Site has remained largely undeveloped. Dry farming and livestock grazing appear to have been the historic land uses.

According to information provided by the User and JSR Vetting Services, LLC, no environmental liens are associated with the Site.

DRAFT

Based on the completion of the vapor encroachment condition (VEC) screening matrix, WKA concludes a VEC can be ruled out because a VEC does not or is not likely to exist.

We have performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E 1527-13 for the Jaeger Ranch Property. Any exceptions to, or deletions from, this practice are described in Section 5.4 of this report. This assessment has revealed evidence of one RECs in connection with the Site.

The presence of perchlorate and TCE in groundwater under the Site constitutes a REC. The responsible party has been identified and ongoing groundwater treatment and monitoring is taking place with regulatory oversight provided by the CVRWQCB. Given the depth to water and soil conditions, it is unlikely that the TCE and perchlorate plume as currently understood will prohibit the proposed development. Periodic changes to the groundwater monitoring and remedial program may be required necessitating Site access for the purposes of monitoring well destruction and/or installation.

Phase I Environmental Site Assessment
JAEGER RANCH PROPERTY
WKA No. 11103.01

1.0 INTRODUCTION

1.1 Purpose

The purpose of this Phase I Environmental Site Assessment (ESA) was to evaluate the Jaeger Ranch Property (herein referred to as site) for evidence of potential Recognized Environmental Conditions (RECs) resulting from current and/or former site activities as defined by the American Society of Testing and Materials (ASTM) Standard E 1527-13 (ASTM, 2013).

According to the ASTM, "this practice is intended to permit a *user* to satisfy one of the requirements to qualify for the *innocent landowner*, *contiguous property owner*, or *bona fide prospective purchaser* limitations on CERCLA [Comprehensive Environmental Response, Compensation and Liability Act] liability (hereinafter, the "*landowner liability protections*," or "*LLPs*"): that is, the practice that constitutes "*all appropriate inquiry* into the previous ownership and uses of the *property* consistent with good commercial or customary practice" as defined at 42 U.S.C. §9601(35)(B)."

DRAFT

This ESA has been performed in general conformance with the ASTM Standard E 1527-13 and the scope and limitations defined in Wallace-Kuhl & Associates (WKA) proposal, 3PR16185, dated August 2, 2016.

1.2 Scope of Services

WKA has completed this ESA for the Site shown on Figures 1 through 3. Ms. Leah Dreger with The True Life Companies authorized WKA to proceed with this assessment on August 9, 2016 through a signed WKA Environmental Services Agreement.

The scope of this assessment included the following:

- Conduct a site reconnaissance for visual evidence of surface contamination and potential sources of subsurface contamination;
- Conduct a visual inspection of the adjoining properties for evidence of RECs
- Conduct interviews with the following, as available:
  - Key site manager,
  - Major occupants,
  - Past and present owners, operators,
  - Government and/or agency personnel, and,

  - Inquiries conducted at abandoned sites may include interviews with owners or occupants of neighboring or nearby properties;
- Conduct a records review, which included the following:
  - Physical setting documents to determine regional geology, general soil information, and local and regional groundwater conditions,
  - Historical information, including but not limited to, Sanborn maps, topographic maps, aerial photographs, ownership records, building department records, local street directories, zoning and land use records, and prior assessments, as available,
  - Environmental records, including federal, state, tribal, and county regulatory agency lists that will help identify RECs on the site and the adjoining properties, and,
  - Based on the outcome of the database search, review of specific regulatory agency files for identified contaminated facilities in order to evaluate whether the listed facilities are hazardous materials threats to the site;
- Conduct a preliminary screen for vapor encroachment conditions on the site per ASTM E2600-10;
- Review of the completed *ASTM E 1527-13 User Questionnaire* (*Questionnaire*) regarding Recorded Environmental Liens, activity and use limitations (AULs), relationship of the purchase price to the fair market value of the site, and any specialized knowledge of the site;
- Review of environmental liens and AULs reports, as provided; and
- Prepare a final report of the results of the ESA.

DRAFT

1.3 Special Terms and Conditions

No special terms or conditions to the WKA Professional Services Agreement or the WKA scope of services were requested or performed during the preparation of this report. The True Life Companies authorized WKA to perform a search for recorded environmental liens and Activity and Use Limitations (AULs) for the site. Discussion regarding the search is included in Section 4.3.5 of this report.

1.4 User Provided Information

WKA provided The True Life Companies a copy of the User Questionnaire and the Helpful Documents checklist. The True Life Companies returned the documents after they were completed by Ms. Leah Dreger, Director of Entitlements of The True Life Companies. Discussion regarding his responses is provided in the following section. A copy of the completed questionnaire is included in Appendix B.

In summary, Ms. Dreger was not aware of any records of environmental liens or AULs currently recorded against the Site. Ms. Dreger stated she does not possess specialized knowledge or experience related to the Site. Ms. Dreger stated that she is not aware of any obvious indicators that point to the presence or likely presence of contamination at the Site. Ms. Dreger was not aware of existing "Helpful Documents" as defined in Section 10.8.1 of the ASTM Standard as noted on the "Helpful Documents Checklist" included in Appendix B.

In addition, the User provided correspondence from First American Title Company stating that no environmental liens were recorded for the Site.

DRAFT

2.0 SITE DESCRIPTION

2.1 Site and Vicinity General Characteristics

The Site is located approximately ½-mile southeast of the intersection of Douglas Road and Jaeger Road in Rancho Cordova, California (Figures 1, 2, 3, and 4) and is comprised of approximately 529 acres of undeveloped land having Sacramento County Assessor's Parcel Number (APN) 06-0040-008-0000 (Figure 3).

2.2 Site Reconnaissance

A visual site reconnaissance was conducted by WKA on August 22, 2016. Figure 5 provides color photographs of the site taken during the site reconnaissance.

On the day of field reconnaissance the Site was generally undeveloped and covered by dry seasonal grasses. A dirt/gravel road extended south into the Site and terminated near a cluster of monitoring wells and a groundwater extraction feature (further described in Section 4.3 of this report). One soil stockpile was observed along the eastern portion of the northern Site boundary. No debris, stained soil, or distressed vegetation was observed in connection with this stockpile. The origin of this stockpile is discussed further in Section 3.1 of this report.

DRAFT

Small amounts of refuse were observed along then northern and western Site boundaries. Three modified tractor tires set up as livestock watering troughs were observed along the northern Site boundary. Each of these watering troughs, had water lines plumed utilizing PVC piping and valves. A metal water storage tank (approximately 1,5000 gallon capacity) was observed north of the groundwater extraction well located within the Site. At the time of our reconnaissance, the tank was determined to be empty by tapping on the sides. The welded placard on the side of the tank stated that it was originally built to be utilized as an underground storage tank. No abnormally distressed vegetation or soil staining was observed in the vicinity of the tank.

2.2.1 Municipal Infrastructure and Utilities

Two sets of high-voltage, tower-mounted electrical transmission lines cross the Site from northeast to southwest. Two sets of pole-mounted power lines also cross the Site in a parallel alignment. One concrete pad-mounted transformer was visible within the fenced enclosure containing the groundwater extraction well. Jaeger Road (portions closed) is located along the western Site boundary.

2.3 Adjoining Properties

The Site is bounded to the south and east by undeveloped land and to the north and west by residential subdivisions in various forms of completion.

3.0 INTERVIEWS

Interviews with various persons familiar with the site vicinity, including representatives of public agencies, were conducted for the purpose of identifying past and present uses, which may have contributed to RECs on the site. Results of those interviews are discussed in the following sections.

3.1 Owner or Key Site Manager

WKA interviewed Mr. Doug Dieter with K Hovnanian Homes regarding his knowledge of current and past Site activities. Mr. Dieter confirmed that K Hovnanian Homes owns the Site but stated that other than cattle grazing, he had no knowledge of the current or past Site use. Mr. Dieter stated that the soil stockpile along the northern Site boundary near the northeast corner was derived from the construction of the stormwater detention basin immediately north of the northeastern portion of the Site.

WKA provided The True Life Companies a copy of the User Questionnaire and the Helpful Documents checklist. The True Life Companies returned the documents after they were completed by Ms. Leah Dreger, Director of Entitlements of The True Life Companies. In summary, Ms. Dreger was not aware of any records of environmental liens or AULs currently recorded against the Site. Ms. Dreger stated she does not possess specialized knowledge or experience related to the Site. Ms. Dreger stated that she is not aware of any obvious indicators that point to the presence or likely presence of contamination at the Site. Ms. Dreger was not aware of existing "Helpful Documents" as defined in Section 10.8.1 of the ASTM Standard. Copies of the User Questionnaire and "Helpful Documents Checklist" are included in Appendix B.

DRAFT

3.2 Occupants (Multi-family or Major)

There are no occupants currently within the Site.

3.3 Past and Present Owners, Operators, and/or Occupants

No information regarding past owners was received by WKA during completion of this report.

3.4 State and/or Local Government Officials

WKA contacted, Sacramento County Environmental Management Department (SCEMD), regarding any regulatory files available for the site and surrounding facilities. According to SCEMD staff, the on-line document search option for their files will no longer be available. WKA submitted a public records request to review SCEMD files associated with the Site. At the time of completion of this report, our request had not been returned.

3.5 Abandoned Properties

As referenced in 40 CFR Part 312, in the case of inquiries conducted at "abandoned properties," as defined in §312.23(d), "where there is evidence of potential unauthorized uses of the site or evidence of uncontrolled access to the site, the environmental professional's inquiry must include interviewing one or more (as necessary) owners or occupants of neighboring or nearby properties from which it appears possible to have observed uses of, or releases at, such abandoned properties…" No evidence of potential unauthorized uses, or evidence of uncontrolled access to the site was observed. The site is not considered an abandoned property and therefore, WKA did not interview owners or occupants of neighboring properties.

DRAFT

4.0 RECORDS REVIEW

The purpose of the records review is to obtain and review information concerning the current and historical use of the site and adjoining properties that would help identify the presence of RECs in connection with the site. The records review included review and discussion of the following, as available:

- Physical Setting Source(s);
- Historical Use Information; and,
- Environmental Record Sources.

4.1 Physical Setting Source(s)

The Site is depicted on the 2012 United States Geological Survey (USGS) 7.5 Minute topographic map of the *Buffalo Creek, California Quadrangle* as undeveloped land. The Site is located within Section 16, Township 8 North, Range 7 East, Mount Diablo Base and Meridian, at an elevation of approximately +185 feet relative to mean sea level (msl).

DRAFT

4.1.1 Regional and Local Geology

The Site is located on the Great Valley geomorphic province of California, a large, elongate, northwest-trending structural trough, generally constrained to the west by the Coast Ranges and to the east by the foothills of the Sierra Nevada Range (Norris and Webb, 1990). The Great Valley consists of two valleys lying end-to-end, with the Sacramento Valley to the north and the San Joaquin Valley to the south.

The Sacramento and San Joaquin Valleys have been filled to their present elevations with thick sequences of sediment derived from both marine and continental sources. The sedimentary deposits range in thickness from relatively thin deposits along the eastern valley edge to more than 25,000 feet in the south central portion of the Great Valley (Norris and Webb, 1990). The sedimentary geologic formations of the Great Valley province vary in age from Jurassic to Quaternary, with the older deposits being primarily marine in origin. Younger sediments are continentally derived and were typically deposited in lacustrine, fluvial, and alluvial environments with their main source being the Sierra Nevada Range.

The 1965 USGS *Geologic Map of the Sacramento Quadrangle, California*, shows the Site to be underlain by the Plio-Pleistocene non-marine material.

4.1.2 Soil Survey

The United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) has created a web-based service for accessing soil information. According to the NRCS Web Soil Survey (WSS) the majority of the near-surface soils on the Site consist of

Fiddyment fine sandy loam (0.5% of Site), Hicksville gravelly loam (2.4% of Site), Red Bluff-Redding complex (16.2% of Site), Redding loam (10.9% of Site), and Redding gravelly loam (70% of Site) (USDA, 2016). A copy of the soil report is included on the attached CD.

4.1.3 Regional and Local Groundwater

The Site is located within the California Department of Water Resources (DWR) defined Sacramento Valley Groundwater Basin/South American Sub-Basin of the Sacramento River Hydrologic Region. WKA searched data on the DWR website and found a DWR monitored groundwater wells approximately 1/8-mile northwest of the Site (Well No. 385571N12150W001). The most recent depth to groundwater measurement listed was 145 feet bgs on October 17, 2003 (DWR, 2016).

WKA also searched the State Water Resources Control Board's (SWRCB) GeoTracker website for quarterly groundwater monitoring reports completed for facilities in the immediate vicinity of the Site. A summary of the data associated with these facilities can be found in Section 4.3.1 of this report.

4.2 Historical Use Information

DRAFT

WKA reviewed historical information to develop a history of the previous uses of the site and surrounding area, in order to evaluate the site and adjoining properties for evidence of RECs. Standard historical sources reviewed during the preparation of this report included the following, as available:

- Sanborn® Maps;
- Topographic Maps;
- Oil and Gas Well Maps;
- Aerial Photographs;
- Ownership Records;
- Building Department Records;
- Local Street Directories;
- Zoning and Land Use Records;
- Other Historical Sources; and,
- Prior Assessments.

Discussion of these historical sources is provided in the following sections.

4.2.1 Sanborn® Maps

Sanborn® Maps with coverage of the site were obtained through Environmental Data Resources, Inc. (EDR®). EDR® is a national commercial provider of environmental database information. Sanborn® Maps are detailed drawings of site development, and were typically used

by fire insurance companies to determine site fire insurability. According to EDR®, Sanborn® Map coverage of the Site is not available (EDR®, 2016a).

4.2.2 Topographic Maps

Historical USGS topographic maps with coverage of the site and outlying land areas were reviewed. Topographic maps with coverage of the site dated 1891, 1892, 1893, 1908, 1916, 1941, 1944, 1954, 1967, 1975, 1980, and 2012 were available for review (EDR®, 2016b). Copies of the topographic maps compiled by EDR® with coverage of the site are included on the CD attached to the back cover of this report. Table 1 notes the changes in the vicinity of the site.

Table 1

Year	Scale	Observations
1891	1:125,000	The Site and surrounding parcels are vacant. Roads are mapped near the northern and western Site boundaries. A seasonal drainage is mapped crossing the western area of the Site flowing generally north to south
1892	1:125,000	No significant changes are mapped within the Site and surrounding parcels.
1893	1:125,000	No significant changes are mapped within the Site and surrounding parcels.
1908	1:31,680	With the exception of four small structures mapped within surrounding parcels, no significant changes are mapped within the Site and surrounding parcels.
1916	1:31,680	Several additional small structures are now mapped in the vicinity of the Site. No other significant changes are mapped within the Site and surrounding parcels.
1941	1:62,500	No significant changes are mapped within the Site and surrounding parcels.
1944	1:62,500	No significant changes are mapped within the Site and surrounding parcels.
1954	1:24,000	One well, a small reservoir and three small structures are mapped less than 1/8-mile north of the Site. No other significant changes are mapped within the Site and surrounding parcels.
1967	1:24,000	Two sets of tower-mounted electrical transmission lines are mapped crossing the Site from northeast to southwest. A cluster of medium and large structures are mapped approximately ½-mile north/northeast of the Site in the approximate present-day location of the Security Park industrial complex. A series of roads and structures are also visible approximately ½-mile north of the Site in the reported historic location of the McDonald Douglas testing facility.
1975	1:24,000	No significant changes are mapped within the Site and surrounding parcels.

DRAFT

Table 1		
Year	**Scale**	**Observations**
1980	1:24,000	No significant changes are mapped within the Site and surrounding parcels.
2012	1:24,000	Individual structures in the vicinity of the Site are no longer mapped. A large number of roadways are now mapped immediately north and west of the Site. These features are generally consistent with the present-day residential subdivisions located in the same areas.

4.2.3 Oil and Gas Well Maps

Review of California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) website showed that the site is not located in a designated natural gas field. No DOGGR wells are located on or within at least one-mile of the site (DOGGR, 2016).

4.2.4 Aerial Photographs

Historical aerial photographs of the site and general vicinity were compiled by EDR®. Photographs covering the years 1937, 1952, 1957, 1964, 1966, 1972, 1984, 1993, 1998, 2005, 2006, 2009, 2010, and 2012 were available for review (EDR®, 2016c). Table 2 notes the changes on the property and in the vicinity.

DRAFT

Table 2		
Year	**Scale**	**Observations**
1937	1" = 1,000'	No Structures or improvements are visible within the Site. An apparent dirt road is visible along the western Site boundary.
1952	1" = 1,000'	Ground markings within the Site appear consistent with harvest patterns associated with dry land agricultural practices. Several small structures are visible within the immediate vicinity of the Site.
1957	1" = 1,000'	No significant changes are visible within the Site and surrounding parcels.
1964	1" = 1,000'	No significant changes are visible within the Site and surrounding parcels.
1966	1" = 1,000'	No significant changes are visible within the Site and surrounding parcels.
1972	1" = 1,000'	No significant changes are visible within the Site and surrounding parcels.
1984	1" = 1,000'	No significant changes are visible within the Site and surrounding parcels.
1993	1" = 1,000'	No significant changes are visible within the Site and surrounding parcels.
1998	1" = 500'	No significant changes are visible within the Site and surrounding parcels.

Table 2		
Year	**Scale**	**Observations**
2005	1" = 500'	Partially completed subdivisions are visible immediately north and west of the Site. No other significant changes are visible with the Site and surrounding parcels.
2006	1" = 500'	No significant changes are visible within the Site and surrounding parcels.
2009	1" = 500'	A winding dirt road is visible extending from the northern Site boundary into the northeastern portion of the Site. This dirt road is consistent with the access road terminating at the present-day groundwater extraction well located within the Site.
2010	1" = 500'	No significant changes are visible within the Site and surrounding parcels.
2012	1" = 500'	No significant changes are visible within the Site and surrounding parcels.

4.2.5 Ownership Records

According to a Preliminary Title Report for the site, the ownership entity is K. Hovnanian at Jaeger Ranch, LLC (First American Title Company, 2016).

Ownership information was obtained through ParcelQuest®, an on-line distributor of "Assessor-Direct property information throughout the State of California." The ownership entity for the site was listed as "K Hovnanian at Jaeger Ranch LLC" (ParcelQuest®, 2016).

DRAFT

4.2.6 Building Department Records

WKA contacted the City of Rancho Cordova, Community Development Department, Building & Safety Division and the County of Sacramento, Building Permits and Inspections Office regarding any permits recorded for the building. At the time of completion of this report, our request for records had not been returned.

4.2.7 Local Street Directories

Local street directories with coverage of the site and adjoining properties were obtained from EDR® (EDR®, 2016d). These documents contain business listings based on street number identifiers. The Site was not identified within the report. The surrounding parcels were identified as individuals. A copy of the EDR® City Directory (EDR®, 2016d) is provided on the CD attached to the back cover of this report.

4.2.8 Zoning and Land Use Records

WKA reviewed the Rancho Cordova Zoning and Future Land map dated December 2014. The Site is identified with the map as The Ranch at Sunridge (Proposed).

The Site is located within Federal Emergency Management Agency (FEMA), Flood Insurance Rate Map Number 06067C0240H dated August 16, 2012. A review of the map found that the Site is not located within a 100-year regulatory floodplain, as designated by FEMA.

4.2.9 Other Historical Sources

Review of additional historical sources was not warranted in order for the Environmental Professional to make a determination as to evidence of potential RECs on the site.

4.2.10 Prior Assessments

WKA was provided with no prior assessments associated within the Site.

4.3 Environmental Record Sources

4.3.1 Regulatory Agency Databases

DRAFT

EDR® was contacted to provide a summary of facilities listed on regulatory agency databases (EDR®, 2016e). Table 3 summarizes the researched ASTM required *Standard Environmental Record Sources*, as well as several *Additional Environmental Record Sources*, as defined in Sections 8.2.1 and 8.2.2 of the ASTM Standard. For additional reference, the Executive Summary of the EDR® report is included in Appendix C. A copy of the entire EDR® report is included on the CD attached to the back cover of this report.

Table 3

	EDR Listed Database	*ASTM E 1527-13 Search Distance*	No. of Facilities Listed (within Search Radius)
Federal			
Federal NPL Site List	*NPL*	1-mile	0
Federal Delisted NPL Site List	*Delisted NPL*	1/2-mile	0
Federal CERCLIS List	*CERCLIS*	1/2-mile	0
Federal CERCLIS NFRAP Site List	*CERCLIS NFRAP*	1/2-mile	0
Federal RCRA CORRACTS Facilities List	*CORRACTS*	1-mile	1
Federal RCRA Generators List:			
Small Quantity and Large Quantity Generators	*RCRA SQG*	site & adjoining	0
	RCRA LQG		0

Table 3			
	EDR Listed Database	*ASTM E 1527-13 Search Distance*	No. of Facilities Listed (within Search Radius)
Landfills and Solid Waste Management Units	*RCRA TSDF*	1/2-mile	1
Federal Institutional Control / Engineering Control Registries	*US ENG Controls*	site only	0
	US INST Controls		0
Federal ERNS List	*ERNS*	site only	0
State			
State-equivalent NPL (Hist. Cal-Sites)	*Hist. Cal-Sites*	1-mile	0
State-equivalent CERCLIS	*RESPONSE*	1/2-mile	0
State Landfill and/or Solid Waste Disposal Site	*SWF/LF (SWIS)*	1/2-mile	0
	WMUDS/SWAT		0
State Leaking Underground Storage Tanks	*LUST- Reg 5 Geotracker*	1/2-mile	0
Tribal Leaking Underground Storage Tanks	*Indian LUST*	1/2-mile	0
State Registered Underground Storage Tanks	*UST*	site & adjoining	0
Tribal Registered Underground Storage Tanks	*Indian UST*	site & adjoining	0
State Registered Aboveground Storage Tanks	*AST*	site & adjoining	0
State Institutional Control Registries	*DEED*	site only	0
State Voluntary Cleanup Sites	*VCP*	1/2-mile	0
Additional Environmental Record Sources			
Hazardous Waste & Substances Sites List	*CORTESE*	1/2-mile	0
DTSC EnviroStor (includes Cal-Sites)	*EnviroStor*	1-mile	0
SLIC	*SLIC - Reg 5*	1/2-mile	0
Cleaner Facilities	*Drycleaners*	1/4-mile	0
HAZNET	*HAZNET*	1/4-mile	0
Local - County			
Sacramento County Contaminated Sites	*Sac Co CS*	1/2-mile	0
Sacramento County Master List	*Sac Co ML*	1/2-mile	0

DRAFT

Review of the EDR® report indicates the Site is not listed on any of the EDR® databases. Only one facility is detailed in the EDR® report and we summarize the facility information below.

The General Electric Medical Systems facility is located approximately ½-mile north/northeast of the Site with a street address of 3920 Security Park Drive. The facility has gone by multiple names including McDonnell Douglas and Security Park. The facility has been monitored and investigated for materials/waste management, handling, and disposal practices. No ongoing regulatory involvement is noted.

Multiple wells were observed within the northeastern area of the Site. A review of the State Water Resources Control Board's (SWRCB) GeoTracker website for quarterly groundwater monitoring reports completed for facilities in the immediate vicinity of the Site found that the

wells are a combination of monitoring wells and groundwater extraction wells associated with the Inactive Rancho Cordova Test Site (Former McDonnell Douglas Test Site) located less than 1-mile north of the Site. The constituents of concern include perchlorate and Trichloroethylene (TCE). Groundwater is being extracted and pumped to a treatment plan approximately 1-mile north/northwest of the Site. The monitoring wells were installed to verify the edge of the plume and monitor concentrations of the constituents of concern. The minimum depth to water in these wells is reported to have been 149 feet bgs.

WKA interviewed Mr. Alex McDonald of the Central Valley Regional Water Quality Control Board regarding sources of groundwater contamination within the former McDonnell Douglas facility. Mr. McDonald described two groundwater plumes originating from the former McDonnell Douglas facility approximately one-mile north of the Site. Mr. McDonald reports that both plumes are within a deeper aquifer and that a layer of clean water separates the contaminants from the ground surface. Mr. McDonald stated the clean water layer forms a barrier to vapor migration; hence, there are no vapor intrusions concerns related to the two plumes.

4.3.2 Preliminary Screen for Vapor Encroachment Conditions

DRAFT

WKA conducted a preliminary screening for vapor encroachment conditions (VEC) beneath the site using the Tier 1 vapor encroachment screening evaluation[1]. The Tier I screening included performing a *Search Distance Test* to identify if there are any known or suspect contaminated properties surrounding or upgradient of the site within specific search radii, and a *Chemicals of Concern (COC) Test* (for those known or suspect contaminated properties identified within the *Search Distance Test*) to evaluate whether or not COC are likely to be present. The Vapor Encroachment Screening Matrix is included in Appendix D.

Based on the completion of the VEC-screening matrix, a VEC can be ruled out because a VEC does not or is not likely to exist.

EDR® was contacted to provide a Vapor Encroachment Screen for the site (EDR®, 2016f). No areas of concern were identified.

4.3.3 Environmental Lien Search

According to an August 25, 2016 Environmental Lien Search Report prepared by JSR Vetting Services, LLC, no environmental liens or activity or use limitations (AULs) were recorded for the site. A copy of the Environmental Lien Search Report is included on the CD attached to the back cover of this report.

[1] The Preliminary Screen for Vapor Encroachment Conditions was based on the guidelines presented in the ASTM *E 2600-10 Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions*.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Data Gaps

WKA identified the following data gaps during the completion of this report:

- The time intervals between the Standard Historical Sources (i.e., topographic maps, aerial photographs, other historical sources) exceeded the ASTM minimum five-year period. However, the use of the site appears unchanged within the time gaps, and therefore, research of the site use during the time gaps is not required by the ASTM Standard (Refer to *Section 8.3.2.1 – Intervals* of the ASTM E 1527-13 standard).

- SCEMD staff, the on-line document search option for their files will no longer be available. WKA submitted a public records request to review SCEMD files associated with the Site. At the time of completion of this report, our request had not been returned.

- WKA contacted the City of Rancho Cordova, Community Development Department, Building & Safety Division and the County of Sacramento, Building Permits and Inspections Office regarding any permits recorded for the building. At the time of completion of this report, our request for records had not been returned.

DRAFT

It is the opinion of WKA that no significant data gaps were identified during the preparation of this report that affects the ability of the Environmental Professional to identify RECs on the site.

5.2 Conclusions

The historical land use research dating back to the late 1800s revealed that the Site has remained largely undeveloped. Dry farming and livestock grazing appear to have been the historic land uses.

According to information provided by the User and JSR Vetting Services, LLC, no environmental liens are associated with the Site.

Based on the completion of the vapor encroachment condition (VEC) screening matrix, WKA concludes a VEC can be ruled out because a VEC does not or is not likely to exist.

We have performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E 1527-13 for the Jaeger Ranch Property. Any exceptions to, or deletions from, this practice are described in Section 5.4 of this report. This assessment has revealed evidence of one RECs in connection with the Site.

The presence of perchlorate and TCE in groundwater under the Site constitutes a REC. The responsible party has been identified and ongoing groundwater treatment and monitoring is taking place with regulatory oversight provided by the CVRWQCB. Given the depth to water and soil conditions, it is unlikely that the TCE and perchlorate plume as currently understood will prohibit the proposed development. Periodic changes to the groundwater monitoring and remedial program may be required necessitating the abandonment and installation of wells may be required.

A full copy of this ESA report, in a .pdf format, is included on the attached CD.

5.3 Recommendations

Based on the conclusions presented and the documentation contained herein, WKA recommends that the Site owner maintain contact with the CVRWQB on a semi-annual basis so as to understand the current remedial and monitoring status of the perchlorate and TCE plume under the Site and to properly plan for proposed modifications to the monitoring and treatment program.

DRAFT

5.4 Exceptions and/or Deletions

With the exception of the data gaps identified in Section 5.1 of this report, no exceptions or deletions from the ASTM E 1527-13 standard were made during the performance of this ESA.

5.5 Additional Services

Non-scope considerations, such as assessment for naturally occurring asbestos (NOA), wetlands evaluation, indoor air quality, laboratory testing of the soils and groundwater beneath the site for environmental contaminants (such as agricultural-related pesticides, termiticides, polychlorinated biphenyls [PCBs], or arsenic and lead), and assessments for asbestos containing materials and lead-based paint were not included or requested as part of this ESA. Additionally, this ESA included conducting a Tier 1 vapor encroachment screening in accordance with the ASTM *E 2600-10 Vapor Encroachment Screening on Property Involved in Real Estate Transactions.*

6.0 LIMITATIONS

The statements and conclusions in this report are based upon the scope of work described above and on observations made only on the date of the field reconnaissance, August 22, 2016. Work was performed using a degree of skill consistent with that of competent environmental consulting firms performing similar work in the area. Information regarding the site that is *publicly available* and *practically reviewable,* as described in the ASTM standard, was obtained. Additional research or receipt of information regarding the site that was not disclosed or available to WKA during this assessment may result in revision of the conclusions. The conclusions in this report should be reevaluated if site conditions change. No recommendation is made as to the suitability of the site for any purpose. The results of this assessment do not preclude the possibility that materials currently or in the future defined as hazardous are present on the site, nor do the results of this work guarantee the potability of groundwater beneath the site. This report is applicable only to the investigated site and should not be used for any other property. No warranty is expressed or implied.

This report is viable for one year from the publication date of the report provided the following components are updated within 180 days of the date of purchase or (for transactions not involving an acquisition) the date of the intended transaction:

- Interviews with current owners/occupants and/or in order to identify changes in site conditions or uses since the publication date of this report
- Searches for recorded environmental cleanup liens
- Visual inspection of the site and of adjoining properties with emphasis on changes in conditions or uses since the publication date of this report
- A current review of federal, state, tribal and county databases
- The declaration by the environmental professional responsible for the assessment.

Environmental Site Assessments completed more than one year prior to the date of purchase must be reviewed and updated in order for the *Environmental Site Assessment* to be considered valid per Section 4.6 (*Continued Viability of Environmental Site Assessment*), and Sections 4.7 and 8.4 (*Prior Assessment Usage*) of the ASTM E 1527-13 Standard.

BCY:KMB:kg
H:/dept3/11103.01 - Phase I ESA Jaeger Ranch Property

DRAFT

7.0 REFERENCES

ASTM International. 2013. American Society for Testing and Materials, ASTM Standard E 1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, Pennsylvania (November 2013).

ASTM International. 2010. American Society for Testing and Materials, ASTM Standard E 2600-10, *Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions*, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, Pennsylvania (June 2010).

Environmental Data Resources, Inc. (EDR®):

-2016a. *Certified Sanborn Map Report, Jaeger Ranch Property, Rancho Cordova, California, Inquiry Number 4700133.3*, Milford, Connecticut, (August 15, 2016).

-2016b. *The EDR Historical Topographic Map Report, Jaeger Ranch Property, Rancho Cordova, California, Inquiry Number 4700133.4*, Milford, Connecticut, (August 15, 2016).

-2016c. *The EDR Aerial Photo Decade Package Report, Jaeger Ranch Property, Rancho Cordova, California, Inquiry Number 4700133.9*, Milford, Connecticut, (August 17, 2016).

-2016d. *The EDR City Directory Abstract, Jaeger Ranch Property, Rancho Cordova, California, Inquiry Number 4700133.5*, Milford, Connecticut, (August 17, 2016).

-2016e. *The EDR Radius Map Report with GeoCheck, Jaeger Ranch Property, Rancho Cordova, California, Inquiry Number 4700133.2s*, Milford, Connecticut, (August 15, 2016).

-2016f. *The EDR Vapor Encroachment Screen, Jaeger Ranch Property, Rancho Cordova, California, Inquiry Number 4700133.6s*, Milford, Connecticut, (August 15, 2016).

JSR Vetting Services, LLC (JSR) 2016. *Environmental Lien Search Report*, File Number: 108340 (August 2016).

Norris, R. M., Webb, R. W., 1990, *Geology of California* Second Edition, John Wiley and Sons, Inc. New York.

ParcelQuest, 2016, Detail Report Property Address: 111 Woodmere Road, CA, Retrieved [August 2016] from the World Wide Web: <http://www.parcelquest.com/>.

State of California, Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR), 2001, Map 6W-1 *[Well Locations Map]* [map], scale unknown.

State of California, Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR), *DOGGR On-line Mapping System (DOMS), District 6, Northern California* < http://maps.conservation.ca.gov/doms/index.html> (August 2016).

United States Department of Agriculture, Natural Resources Conservation Service, *Web Soil Survey,* http://soils.usda.gov/technical/classification/osd/index.html (August 2016).

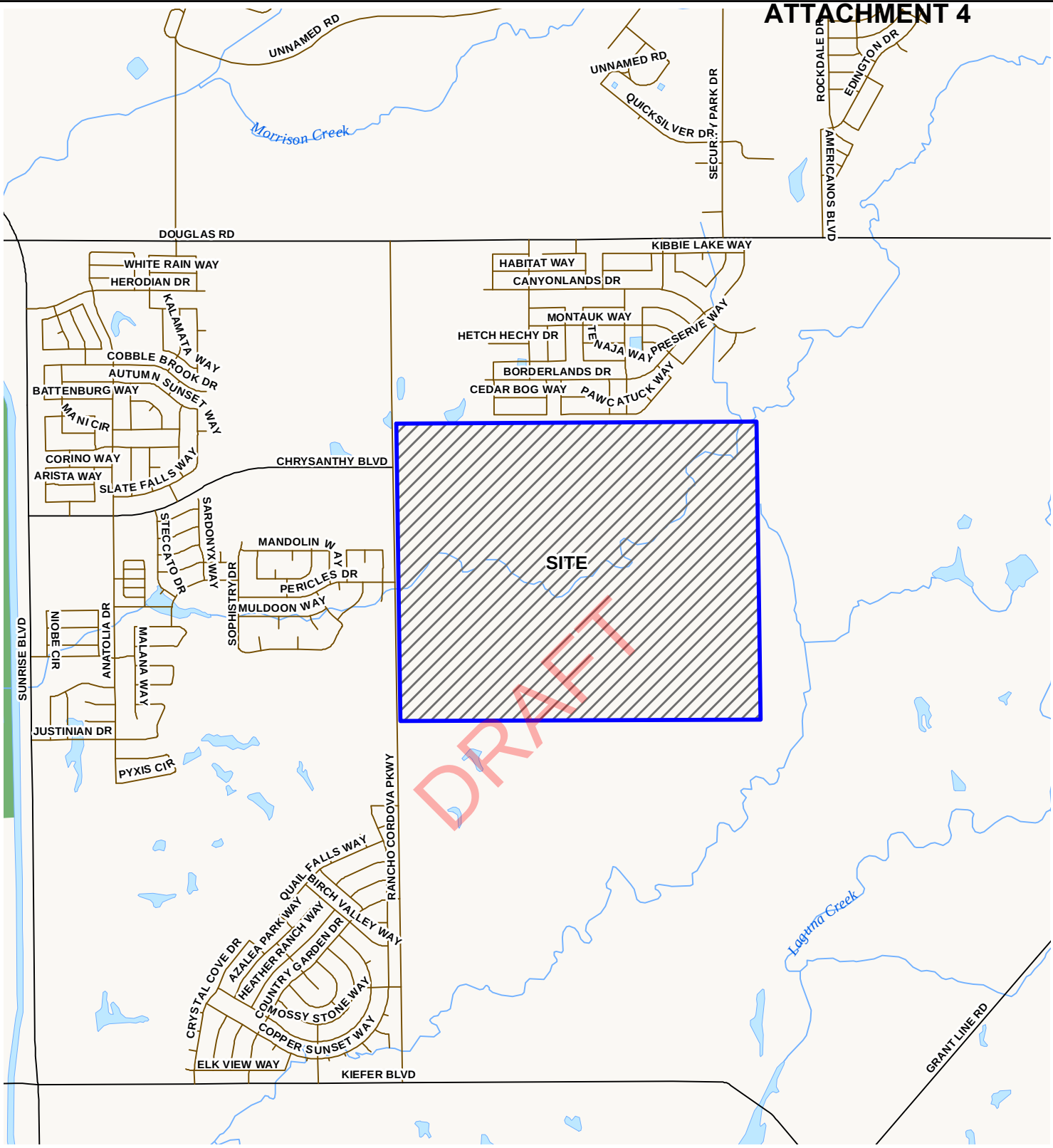
DRAFT

Wagner, D.L., et al, State of California Department of Mines and Geology, 1981, *Geologic Map of the Sacramento Valley and Sierra Foothills, California* [map]. 1:250,000, Regional Geologic Map Series, Map No. 1A (Geology). Capitol Heights, MD: William Heintz Map Corporation.

DRAFT

FIGURES

DRAFT



Street data courtesy of Sacramento County.
Hydrography courtesy of the U.S. Geological Survey acquired from the GIS Data Depot, December, 2007.
Projection: NAD 83, California State Plane, Zone II

N

0 1,000 2,000
Feet

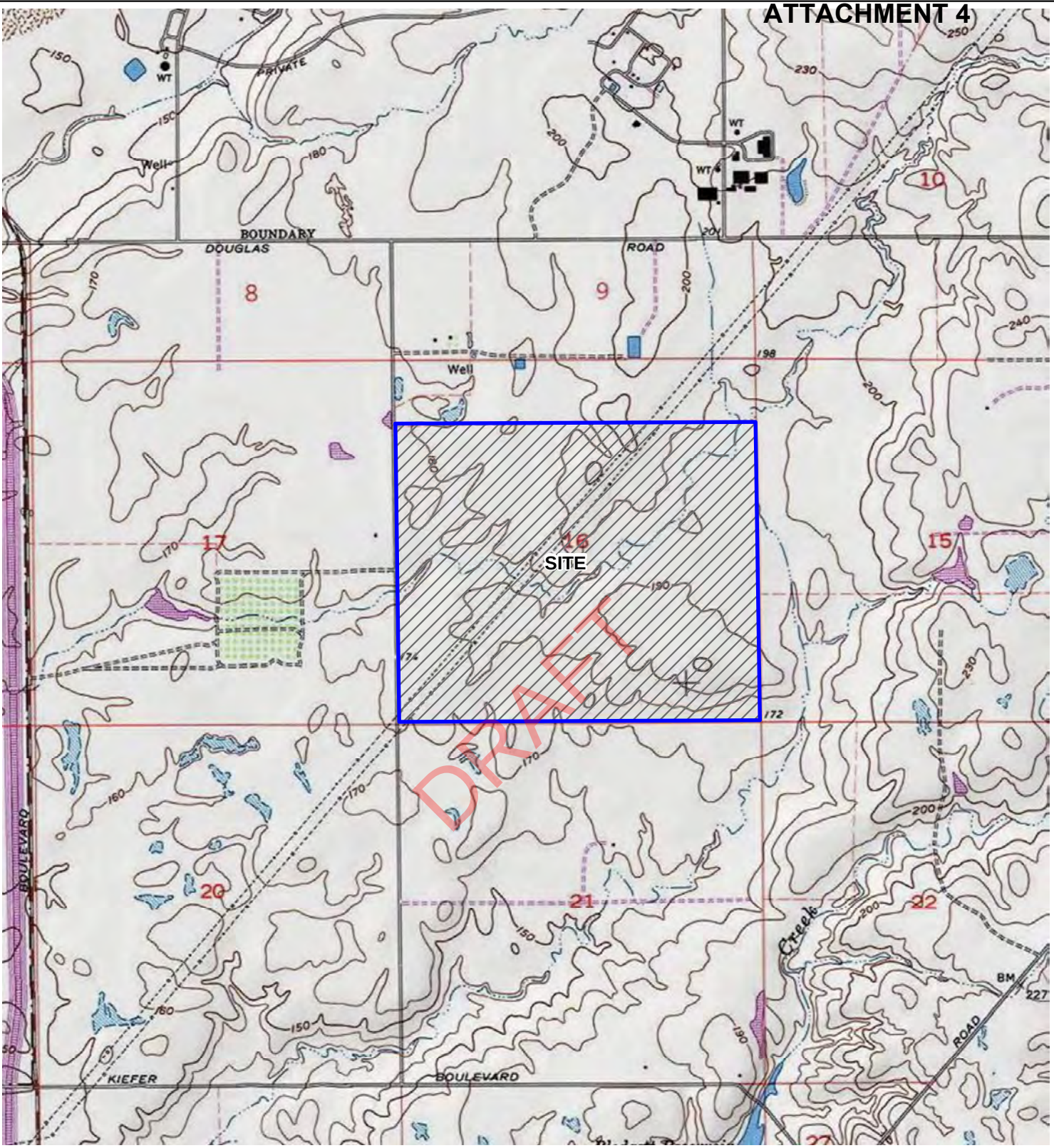
WallaceKuhl & ASSOCIATES

VICINITY MAP

JAEGER RANCH PROPERTY

Sacramento, California

FIGURE	1
DRAWN BY	RWO
CHECKED BY	DBN
PROJECT MGR	BCY
DATE	08/16
WKA NO. 11103.01	



Adapted from U.S. Geological Survey 7.5 minute topographic map of the Carmichael and Buffalo Creek quadrangles, California, 1980 acquired from the California Geospatial Information Library, 2007
Projection: California State Plane, Zone II

N

0 1,000 2,000
Feet

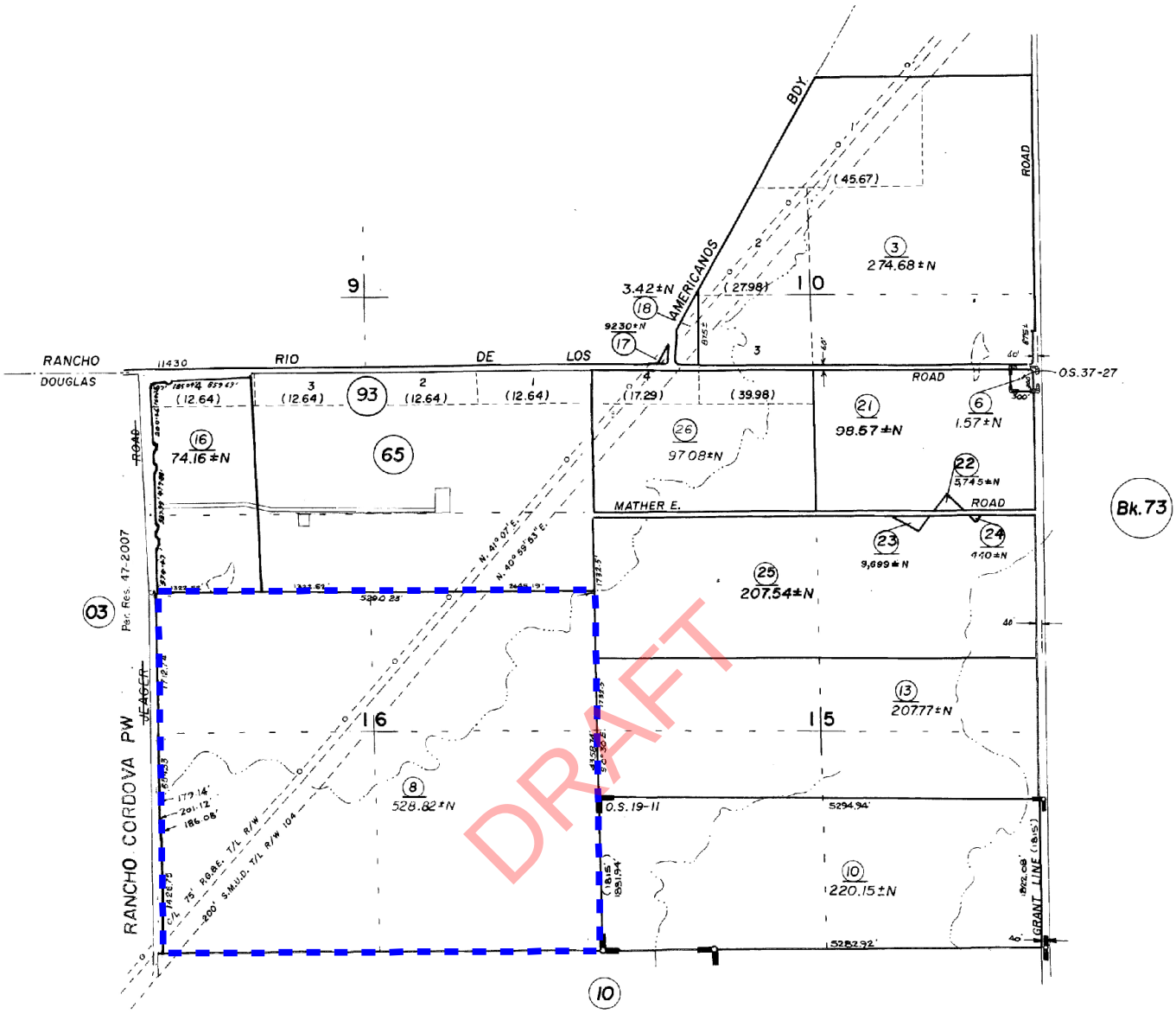
WallaceKuhl & ASSOCIATES

TOPOGRAPHIC MAP

JAEGER RANCH PROPERTY

Sacramento, California

FIGURE	2
DRAWN BY	RWO
CHECKED BY	DBN
PROJECT MGR	BCY
DATE	08/16
WKA NO. 11103.01	



Parcel Map provided by the County of Sacramento Assessor's Book 67, Page 04.
Projection: NAD 83, California State Plane, Zone II

Legend

Site Boundary

N

0 1,000 2,000

Feet

WallaceKuhl & ASSOCIATES

PARCEL MAP

JAEGER RANCH PROPERTY

Sacramento, California

FIGURE	3
DRAWN BY	RWO
CHECKED BY	DBN
PROJECT MGR	BCY
DATE	08/16
WKA NO. 11103.01	

Aerial provided by ESRI.
Site Plan adapted from drawing provided by Wood Rodgers, dated May 11, 2016.
Projection: NAD 83, California State Plane, Zone II

Legend

Site Boundary

N

0 450 900

Feet

WallaceKuhl & ASSOCIATES

AERIAL SITE MAP

JAEGER RANCH PROPERTY

Sacramento, California

FIGURE	4
DRAWN BY	RWO
CHECKED BY	DBN
PROJECT MGR	BCY
DATE	08/16
WKA NO. 11103.01	

APPENDIX A
RESUMES

DRAFT

Wallace Kuhl & Associates

BRYAN C. YATES

ENVIRONMENTAL SPECIALIST

Bryan C. Yates has managed projects dealing with multiple aspects of private and public development including master-planned communities, residential subdivisions, schools, churches, commercial properties, and light industrial facilities since 1998.

At Wallace Kuhl & Associates, Mr. Yates provides consulting services for multiple disciplines including:

- Stormwater Pollution Prevention Plans
- Municipal Stormwater Management Planning/Permitting
- Environmental Site Assessments
- Geotechnical Feasibility Studies
- Construction Management
- Land Development Consultation
- Land Development Constraints Analysis
- Political Consulting/Public Agency Interaction

SELECTED PROJECT EXPERIENCE

Castle Farms, Merced, CA: Mr. Yates prepared a Phase I Environmental Site Assessment, assisted in the geotechnical feasibility study, planned and coordinated a ground water assessment, which included an aquifer pumping test. His work also included quarterly surface water and air monitoring that continued for three years. Castle Farms consists of approximately 2,500 acres of agriculture production land formerly used for growing almond and wine grapes crops. The property is surrounded by a chicken ranch, a former military installation a Class III Disposal Landfill and a dairy farm.

Leona Quarry, Oakland, CA: Mr. Yates coordinated the efforts of multiple members of the development and construction team with local and regional agencies. He assisted in the preparation of the Stormwater Management Plan and SWPPP for this reclaimed quarry located in the Oakland Hills. Re-use planning revolved around approximately 400 condominium and single-family residential lots within the former quarry. Leona Quarry was an aggregate mine in Alameda County, California that was undergoing closure/re-use Studies.

.

North Spring Street Bridge Widening Project, Los Angeles, CA: Mr. Yates completed, an Initial Site Assessment in general conformance with Caltrans Standard Environmental Reference. The proposed project would widen the existing 50-foot-wide viaduct by approximately 20 feet on each side, resulting in a 90-foot-wide by 700-foot-long viaduct the California Department of Transportation and the City of Los Angeles had voiced concerns over the hazardous materials impacts by the proposed project during the NEPA/CEQA environmental documentation process.

Sacramento Stucco Property, West Sacramento, CA: Mr. Yates completed a Phase I Environmental Site Assessment for the three-acre property located northwest of the intersection of Riske Lane and South River Road and assisted in getting the Property through the enrollment process for the VCA program with the DTSC.. The property was occupied by the active Sacramento Stucco Company operation. Development plans for the property include a 30- to 50-story building occupied by commercial space, a parking structure, and approximately 300 condominiums. This Brownfield property currently lies within the redevelopment zone identified by the City of West Sacramento. The property was historically occupied by a lead acid battery recycling operation,

Transcan/Hillcrest Area Specific Plan, Antioch, CA, Mr. Yates completed a modified Environmental Site Assessment in support of the initial planning land acquisition activities for this proposed 375-acre transit oriented development. Mr. Yates also assisted the project proponent in completing an opportunities and constraints analysis for the project. The project is planned for a multi-facetted transit oriented development with a town center, 2,500 high density residential units, and no single family residences. Initial planning was complicated by a mix of historic agriculture and industrial uses that will be mitigated throughout the development process.

Folsom Boulevard Streetscape, Rancho Cordova, CA, Mr. Yates completed multiple Phase I Environmental Site Assessments in support of the efforts by the City of Rancho Cordova to upgrade and revitalize the five-mile Folsom Boulevard Corridor. These assessments were completed as part of the technical studies for project NEPA/CEQA documentation and compliance. The

DRAFT

Wallace Kuhl & Associates

BRYAN C. YATES

Folsom Boulevard corridor is the heart of the City of Rancho Cordova Redevelopment Zone. Special features within the corridor include 4 Sacramento Regional Transit Light Rail Stations, and 3 Park & Ride Lots. Two US EPA Superfund sites are located within one mile of the Project boundary.

Northeast Fairfield Specific Plan, Fairfield, CA, Mr. Yates completed a hazardous materials assessment study for this large master planned community. This project included the development of previously undeveloped land, the redevelopment of the Cement Hill industrial area, a transit village with Capitol Corridor service, a railroad grade separation, and redevelopment of former railroad facilities. The planned uses included more than 6,000 single family residences, an employment center, retail, warehouse, and commercial.

Livingston's Concrete Services, Multiple Locations, CA, Mr. Yates has provided stormwater consulting services for Livingston's Concrete Services facilities in Lincoln, Rancho Cordova, North Highlands, Marysville, and Ophir (proposed).

Sunset, Roseville, CA, The Sunset project consists of approximately 1,000 acres of cattle grazing land. Mr. Yates completed a Phase I Environmental Site Assessment for this project. He also facilitated domestic water services discussions between Placer County Water Agency, the City of Roseville, and the project proponent.

Church Street Subdivision, Half Moon Bay, CA, Mr. Yates completed several technical studies in support of the environmental planning and permitting of this residential infill project located within Half Moon Bay, California. Bryan completed a modified Phase I Environmental Site Assessment that included soils sampling and analysis, preliminary drainage study. The environmental sampling was completed as a screening tool to assess the potential for pesticides residues to be present in near surface soil of the site. The preliminary drainage study was complicated by dense riparian vegetation along the banks of Pilarcitos Creek, floodplain issues, and the potential need to realign the stream channel to accommodate for the potential of an upstream earthen dam failure.

Solano County Fairgrounds Redevelopment, Vallejo, CA, Mr. Yates completed a modified Phase I Environmental Site Assessment in support of the initial planning phase of the proposed redevelopment of this 180 acre existing county fairgrounds site. Large areas of undocumented fill, underground fuel storage tanks, animal disposal pits, lead/asbestos, PCBs, and animal waste in shallow groundwater were all issues identified in the initial phases of the assessment.

Stockton Waterfront Project, Stockton, CA, Mr. Yates was Project Manager for the approximately 70-acre designated Brownfield project. This site was the location of the Colberg Boat Works that had historically been used to build and repair mine sweeping ships during World War II and more recently had been utilized for a variety of industrial activities. Bryan completed the Phase I Environmental Site Assessment for this complex waterfront project. The project will encompass 69 single-family, waterfront residences with internal streets, underground utilities, landscaping, and clubhouse.

DRAFT

HIGHER EDUCATION:

California State University, Sacramento
Bachelors of Science-2000

University of California, Davis
Certificate in Land Use & Environmental Planning-2008

PROFESSIONAL REGISTRATIONS:

American Institute of Certified Planners (AICP) #188463

Registered Environmental Assessor, CA #08011-Program Suspended

Caltrans Certified Erosion Control Specialist 2003

24 Hour Hazardous Waste Training Course, 2003 (Updated Annually)

Certified Environmental Manager, Nevada #1926

Certified Professional in Erosion and Sediment Control (CPESC) #3824

Qualified SWPPP Developer & Practitioner (QSD/QSP), California # 21052

LEED Green Associate, GBCI #10747592

KURT M. BALASEK

SENIOR HYDROGEOLOGIST/DIRECTOR OF ENVIRONMENTAL SERVICES

Mr. Balasek has provided a leadership role in hydrogeologic and environmental consulting in the Western US. since 1989. His experience includes, residential and commercial land development, litigation support, permitting, regulatory compliance and technical team building. Mr. Balasek and his team have conducted a wide range of impacted soil and groundwater investigations, mine location and reclamation activities, water resource evaluations and conjunctive use studies. Mr. Balasek has supported municipal efforts to redevelop blighted neighborhoods using private and federal funding and has prepared successful grant applications for EPA Brownfield funding. Mr. Balasek has facilitated public stakeholder processes, organized public comments and used the information gathered from these efforts to prioritize neighborhood and regional site investigations and remedial activities.

Mr. Balasek specializes in unique approaches to problem solving and leverages nearly 30 years of regulatory relationships to assist clients facing enforcement actions. Mr. Balasek has saved his clients hundreds of thousands of dollars in reduced fines, monitoring requirements or realized project efficiencies.

SELECTED PROJECT EXPERIENCE

DRAFT

Stockton Worknet, Stockton, CA: Project was conducted for the City of Stockton Redevelopment Agency and involved delineation, removal and disposal for hydrocarbon and lead-contaminated soil discovered during a construction project. The project also involved a component of public outreach because a children's museum was located immediately adjacent to the site.

Hayden Hill Mine, Lassen, CA: Project consisted of third party review of mine closure plan for Lassen County. Provided technical assistance to Lassen County Planning Commission to facilitate permanent closure of large open pit mine.

Willow Creek, Folsom, CA: Project involved site investigation and subsequent removal of petroleum hydrocarbon-contaminated soil to facilitate private development of commercial property. Under my direction, I facilitated the investigation, excavation and coordination of closure petitions.

City of West Sacramento, West Sacramento, CA: Multiple Projects. These projects involved initial site evaluation of several hundred individual sites for the redevelopment of West Sacramento. Subsequent work involved site investigation and remediation of several sites under U.S. EPA Grants. Provided technical assistance to City staff and collaborated with them to best utilize the public funds and coordinate public outreach.

Rominger Property, Winters, CA (on-going): This project involves detailed site investigation, hydrogeologic analysis and evaluation, and the selection of appropriate remediation technologies for a large plume of (MTBE) contamination on an Ag-industrial site. Project involvement included client and regulatory interaction.

HIGHER EDUCATION:

University of California, Santa Barbara
BA, Geological Sciences (1986)
California State University, Chico
MS, Hydrogeology/Hydrology (1990)

PROFESSIONAL REGISTRATIONS:

Professional Geologist No. 6162, CA
Certified Hydrogeologist No. 299, CA
Qualified Storm Water Developer
California Engineering Contractor A-Haz, C-57,

APPENDIX B
ASTM E 1527-13 User Questionnaire
and Helpful Documents Checklist

DRAFT

E 1527-13 USER QUESTIONNAIRE
JAEGER RANCH PROPERTY

In order to qualify for one of the *Landowner Liability Protections (LLPs)* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "*Brownfields Amendments*"), the *user*[2] must provide the following information (if available) to the *environmental professional*. Failure to provide this information could result in a determination that "*all appropriate inquiry*" is not complete.

(1.) Have you performed a search for environmental cleanup liens and AULs, as described under *User Obligations* in the attached proposal, for the *property*? No

(2.) Are you aware of any environmental cleanup liens against the *property* that are filed or recorded under federal, tribal, state or local law? No

(3.) Are you aware of any AULs, such as *engineering controls*, land use restrictions or *institutional controls* that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law? No

(4.) As the *user* of the report, do you have any specialized knowledge or experience related to the *property* or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

No

(5.) Does the purchase price being paid for this *property* reasonably reflect the fair market value of the *property*? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present on the *property*? The price reasonably reflects the fair market value No known information regarding contamination affects price.

(6.) Are you aware of commonly known or reasonably ascertainable information about the *property* that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as user,

(a.) Do you know the past uses of the *property*? If so, what were they?
No, but likely cattle grazing.

(b.) What, if any, specific chemicals are present or once were present at the *property*?

Unknown

[2] User, as defined in the ASTM Standard is "the party seeking to use Practice E 1527 to complete an environmental site assessment of the property. A user may include, without limitation, a potential purchaser of property, a potential tenant of property, an owner of property, a lender, or a property manager. The user has specific obligations for completing a successful application of this practice as outline in Section 6 [of the ASTM Standard]."

DRAFT

E 1527-13 USER QUESTIONNAIRE (cont.)
JAEGER RANCH PROPERTY

Questions 6 continued:

(c.) What, if any, spills or other chemical releases have taken place at the *property*?

Unknown

(d.) What, if any, environmental cleanups have taken place at the *property*?

Unknown

(7.) As the *user* of this ESA, based on your knowledge and experience related to the *property* are there any obvious indicators that point to the presence or likely presence of contamination at the *property*?

Unknown

COMPLETION:

I have completed this User Questionnaire to the best of my knowledge and provided all information to the environmental professional as of the following date:

DRAFT

Completed by: Leah Dreger

Date: 8/9/16

Title: Director of Entitlements

Signature: Leah Dreger

Phone Number: 925-380-1699

Relationship to the Site (i.e., owner, lender, property manager): Representative of Optimee

HELPFUL DOCUMENTS
JAEGER RANCH PROPERTY

Are you aware of any of the below-listed reports, as they relate specifically to the property?

____ Yes X No (if yes, please check all that apply):

- ☐ Environmental Site Assessment reports (Phase I ESA, Asbestos sampling reports, etc.)
- ☐ Environmental Compliance Audit reports
- ☐ Geotechnical Reports
- ☐ Environmental permits (for example, solid waste disposal permits, hazardous waste disposal permits, wastewater permits, NPDES permits, underground injection permits)
- ☐ Registrations for underground or above ground storage tanks
- ☐ Registrations for underground injection systems
- ☐ Material Safety Data Sheets
- ☐ Community Right-to-Know plan
- ☐ Safety Plan
- ☐ Reports regarding Hydrogeologic conditions on the property or surrounding area
- ☐ Notices or other correspondence from any government agency relating to past or current violations of environmental laws with respect to the property or relating to environmental liens encumbering the property
- ☐ Hazardous waste generator notices, or reports
- ☐ Environmental Impact Reports (draft and/or final)
- ☐ Risk assessments
- ☐ Recorded AULs

DRAFT

If any of the above listed documents are available, will copies be provided to WKA for review?

X Yes ____ No

Completed by Leah Dreger

Date: 8/9/16

Title: Director of Entitlements

Signature: Leah Dreger

APPENDIX C

EDR® Radius Map Report Executive Summary

DRAFT

Jaeger Ranch Property
Jaeger Road
Rancho Cordova, CA 95742

Inquiry Number: 4700133.2s
August 15, 2016

DRAFT

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

FORM LBC CHMI

TABLE OF CONTENTS

SECTION	PAGE
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	8
Orphan Summary	17
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-9
Physical Setting Source Map Findings	A-11
Physical Setting Source Records Searched	PSGR-1

DRAFT

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2016 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

JAEGER ROAD
RANCHO CORDOVA, CA 95742

COORDINATES

Latitude (North):	38.5459470 - 38° 32' 45.40''
Longitude (West):	121.2149940 - 121° 12' 53.97''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	655559.4
UTM Y (Meters):	4267695.0
Elevation:	185 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5619686 BUFFALO CREEK, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140621
Source:	USDA

DRAFT

MAPPED SITES SUMMARY

Target Property Address:
JAEGER ROAD
RANCHO CORDOVA, CA 95742

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	GENERAL ELECTRIC MED	3920 SECURITY PARK	HWP	Higher	3297, 0.624, NNE
A2	GENERAL ELECTRIC MED	3920 SECURITY PARK D	SEMS-ARCHIVE, CORRACTS, RCRA-TSDF, RCRA-SQG,...	Higher	3297, 0.624, NNE

DRAFT

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators
RCRA-CESQG ---------- RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROL ---------- Sites with Institutional Controls

Federal ERNS list

ERNS ---------- Emergency Response Notification System

DRAFT

EXECUTIVE SUMMARY

State- and tribal - equivalent NPL

RESPONSE ..... State Response Sites

State- and tribal - equivalent CERCLIS

ENVIROSTOR ..... EnviroStor Database

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ..... Solid Waste Information System

State and tribal leaking storage tank lists

LUST ..... Geotracker's Leaking Underground Fuel Tank Report
INDIAN LUST ..... Leaking Underground Storage Tanks on Indian Land
SLIC ..... Statewide SLIC Cases
Sacramento Co. CS ..... Toxic Site Clean-Up List

State and tribal registered storage tank lists

FEMA UST ..... Underground Storage Tank Listing
UST ..... Active UST Facilities
AST ..... Aboveground Petroleum Storage Tank Facilities
INDIAN UST ..... Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

VCP ..... Voluntary Cleanup Program Properties
INDIAN VCP ..... Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS ..... Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT ..... Waste Management Unit Database
SWRCY ..... Recycler Database
HAULERS ..... Registered Waste Tire Haulers Listing
INDIAN ODI ..... Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9 ..... Torres Martinez Reservation Illegal Dump Site Locations
ODI ..... Open Dump Inventory

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ..... Delisted National Clandestine Laboratory Register

DRAFT

EXECUTIVE SUMMARY

HIST Cal-Sites ---- Historical Calsites Database
SCH ---- School Property Evaluation Program
CDL ---- Clandestine Drug Labs
Toxic Pits ---- Toxic Pits Cleanup Act Sites
US CDL ---- National Clandestine Laboratory Register

Local Lists of Registered Storage Tanks

SWEEPS UST ---- SWEEPS UST Listing
HIST UST ---- Hazardous Substance Storage Container Database
CA FID UST ---- Facility Inventory Database

Local Land Records

LIENS ---- Environmental Liens Listing
LIENS 2 ---- CERCLA Lien Information
DEED ---- Deed Restriction Listing

Records of Emergency Release Reports

HMIRS ---- Hazardous Materials Information Reporting System
CHMIRS ---- California Hazardous Material Incident Report System
LDS ---- Land Disposal Sites Listing
MCS ---- Military Cleanup Sites Listing
SPILLS 90 ---- SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR ---- RCRA - Non Generators / No Longer Regulated
FUDS ---- Formerly Used Defense Sites
DOD ---- Department of Defense Sites
SCRD DRYCLEANERS ---- State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ---- Financial Assurance Information
EPA WATCH LIST ---- EPA WATCH LIST
2020 COR ACTION ---- 2020 Corrective Action Program List
TSCA ---- Toxic Substances Control Act
TRIS ---- Toxic Chemical Release Inventory System
SSTS ---- Section 7 Tracking Systems
ROD ---- Records Of Decision
RMP ---- Risk Management Plans
RAATS ---- RCRA Administrative Action Tracking System
PRP ---- Potentially Responsible Parties
PADS ---- PCB Activity Database System
ICIS ---- Integrated Compliance Information System
FTTS ---- FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS ---- Material Licensing Tracking System
COAL ASH DOE ---- Steam-Electric Plant Operation Data
COAL ASH EPA ---- Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER ---- PCB Transformer Registration Database
RADINFO ---- Radiation Information Database
HIST FTTS ---- FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS ---- Incident and Accident Data
CONSENT ---- Superfund (CERCLA) Consent Decrees
INDIAN RESERV ---- Indian Reservations

DRAFT

EXECUTIVE SUMMARY

FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
US MINES	Mines Master Index File
FINDS	Facility Index System/Facility Registry System
UXO	Unexploded Ordnance Sites
DOCKET HWC	Hazardous Waste Compliance Docket Listing
CA BOND EXP. PLAN	Bond Expenditure Plan
Cortese	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings	CUPA Resources List
DRYCLEANERS	Cleaner Facilities
EMI	Emissions Inventory Data
ENF	Enforcement Action Listing
Financial Assurance	Financial Assurance Information Listing
HAZNET	Facility and Manifest Data
HIST CORTESE	Hazardous Waste & Substance Site List
HWT	Registered Hazardous Waste Transporter Database
MINES	Mines Site Location Listing
Sacramento Co. ML	Master Hazardous Materials Facility List
MWMP	Medical Waste Management Program Listing
NPDES	NPDES Permits Listing
PEST LIC	Pesticide Regulation Licenses Listing
PROC	Certified Processors Database
Notify 65	Proposition 65 Records
UIC	UIC Listing
WASTEWATER PITS	Oil Wastewater Pits Listing
WDS	Waste Discharge System
WIP	Well Investigation Program Case List
ECHO	Enforcement & Compliance History Information
FUELS PROGRAM	EPA Fuels Program Registered Listing

DRAFT

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants
EDR Hist Auto	EDR Exclusive Historic Gas Stations
EDR Hist Cleaner	EDR Exclusive Historic Dry Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF	Recovered Government Archive Solid Waste Facilities List
RGA LUST	Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

STANDARD ENVIRONMENTAL RECORDS

Federal RCRA CORRACTS facilities list

CORRACTS: CORRACTS is a list of handlers with RCRA Corrective Action Activity. This report shows which nationally-defined corrective action core events have occurred for every handler that has had corrective action activity.

A review of the CORRACTS list, as provided by EDR, and dated 12/09/2015 has revealed that there is 1 CORRACTS site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
GENERAL ELECTRIC MED	***3920 SECURITY PARK D***	***NNE 1/2 - 1 (0.624 mi.)***	***A2***	***9***

ADDITIONAL ENVIRONMENTAL RECORDS

Other Ascertainable Records

HWP: Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

A review of the HWP list, as provided by EDR, and dated 05/23/2016 has revealed that there is 1 HWP site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
GENERAL ELECTRIC MED EPA Id: CAD000819680 Cleanup Status: CLOSED	3920 SECURITY PARK	NNE 1/2 - 1 (0.624 mi.)	A1	8

DRAFT

EXECUTIVE SUMMARY

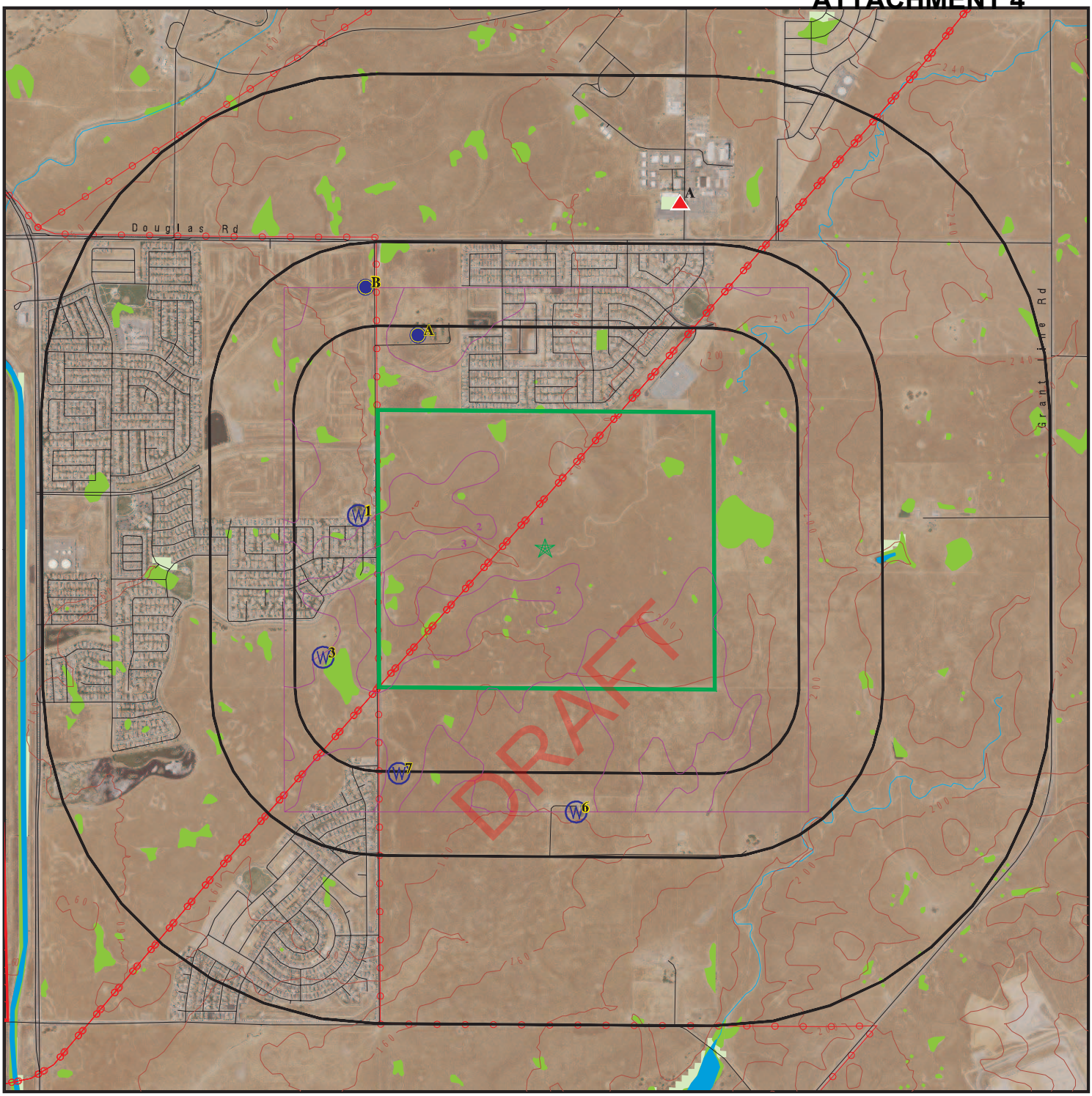
Due to poor or inadequate address information, the following sites were not mapped. Count: 1 records.

Site Name	Database(s)
ANATOLIA II ELEMENTARY SCHOOL	ENVIROSTOR, SCH

DRAFT

OVERVIEW MAP - 4700133.2S

ATTACHMENT 4



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites

0 1/4 1/2 1 Miles

- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

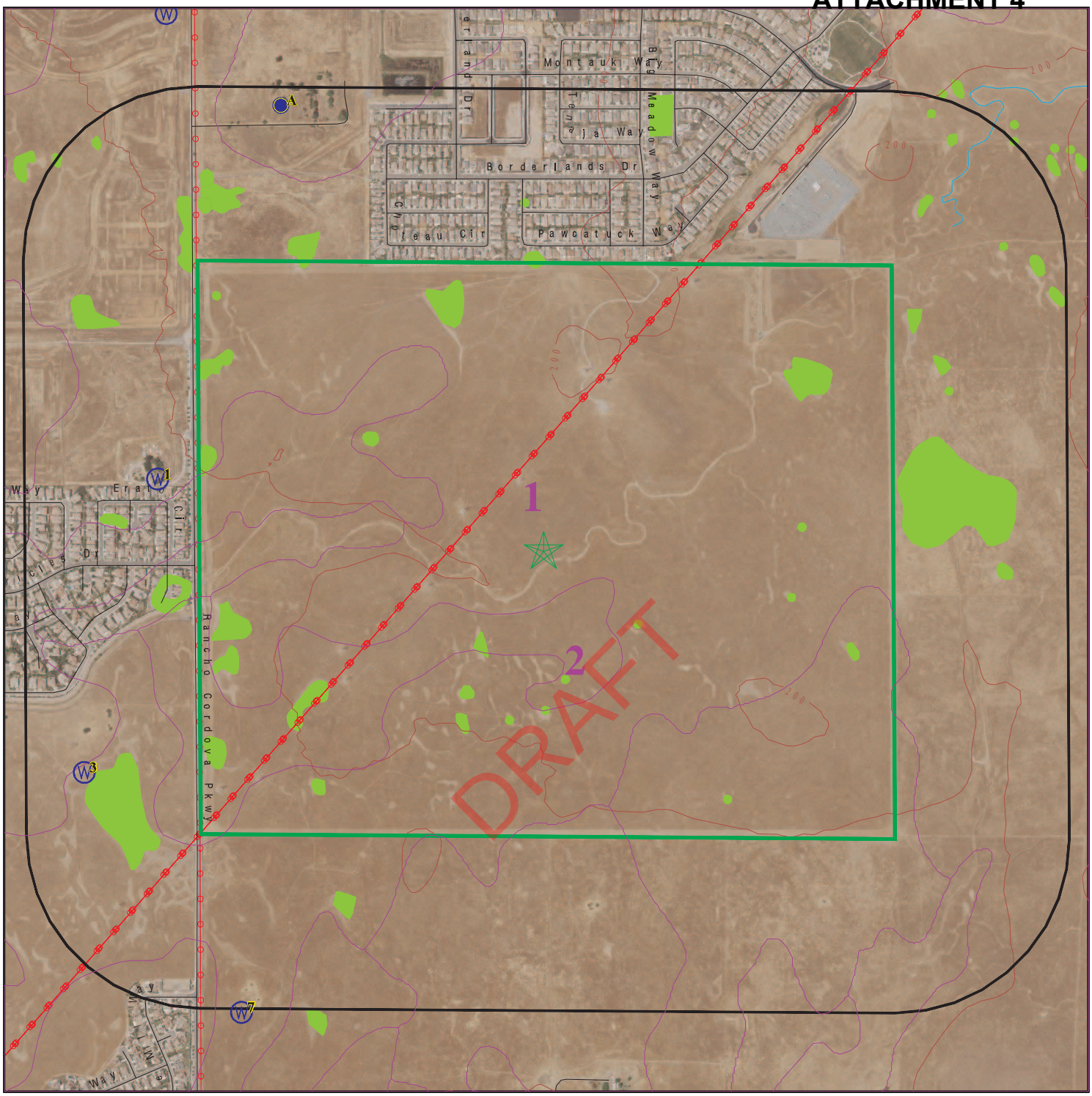
This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Jaeger Ranch Property ADDRESS: Jaeger Road Rancho Cordova CA 95742 LAT/LONG: 38.545947 / 121.214994	CLIENT: Wallace - Kuhl & Associates CONTACT: Bryan C. Yates INQUIRY #: 4700133.2s DATE: August 15, 2016 1:48 pm

Copyright © 2016 EDR, Inc. © 2015 TomTom Rel. 2015.

DETAIL MAP - 4700133.2S

ATTACHMENT 4



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Jaeger Ranch Property	CLIENT: Wallace - Kuhl & Associates
ADDRESS: Jaeger Road Rancho Cordova CA 95742	CONTACT: Bryan C. Yates
LAT/LONG: 38.545947 / 121.214994	INQUIRY #: 4700133.2s DATE: August 15, 2016 1:50 pm

Copyright © 2016 EDR, Inc. © 2015 TomTom Rel. 2015.

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	0.001		0	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	1	NR	1
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	0	0	NR	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		0	0	0	NR	NR	0

DRAFT

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.500		0	0	0	NR	NR	0
SLIC	0.500		0	0	0	NR	NR	0
Sacramento Co. CS	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	0.001		0	NR	NR	NR	NR	0
LIENS 2	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0

DRAFT

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	0.001		0	NR	NR	NR	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
FINDS	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	0	NR	NR	0
CUPA Listings	0.250		0	0	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	0	0	NR	NR	0
HWP	1.000		0	0	0	1	NR	1
HWT	0.250		0	0	NR	NR	NR	0

DRAFT

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MINES	0.001		0	NR	NR	NR	NR	0
Sacramento Co. ML	0.250		0	0	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
PEST LIC	0.001		0	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		0	0	0	0	2	0	2

DRAFT

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID / Direction / Distance / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number
A1	**GENERAL ELECTRIC MEDICAL SYSTEMS**	**HWP**	**S111865965**
NNE	**3920 SECURITY PARK**		**N/A**
1/2-1	**RANCHO CORDOVA, CA 95670**		
0.624 mi.			
3297 ft.	**Site 1 of 2 in cluster A**		

Relative:
Higher

Actual:
208 ft.

HWP:

EPA Id:	CAD000819680
Cleanup Status:	CLOSED
Latitude:	38.56405
Longitude:	-121.2178
Facility Type:	Historical - Non-Operating
Facility Size:	Not reported
Team:	Not reported
Supervisor:	Not reported
Site Code:	100393
Assembly District:	08
Senate District:	08
Public Information Officer:	Not reported
Public Information Officer:	Not reported

Activities:

EPA Id:	CAD000819680
Facility Type:	Historical - Non-Operating
Unit Names:	CONTAIN1, TANKTRT, TANKTRT1
Event Description:	New Operating Permit - APPLICATION PART A RECEIVED
Actual Date:	11/19/1980

EPA Id:	CAD000819680
Facility Type:	Historical - Non-Operating
Unit Names:	CONTAIN1, TANKTRT, TANKTRT1
Event Description:	New Operating Permit - FINAL PERMIT - WITHDRAWAL REQUEST ACKNOWLEDGED
Actual Date:	10/21/1988

EPA Id:	CAD000819680
Facility Type:	Historical - Non-Operating
Unit Names:	CONTAIN1, TANKTRT, TANKTRT1
Event Description:	New Operating Permit - APPLICATION PART B RECEIVED
Actual Date:	06/10/1982

EPA Id:	CAD000819680
Facility Type:	Historical - Non-Operating
Unit Names:	CONTAIN1, TANKTRT, TANKTRT1
Event Description:	New Operating Permit - CALL-IN LETTER ISSUED
Actual Date:	02/15/1982

EPA Id:	CAD000819680
Facility Type:	Historical - Non-Operating
Unit Names:	CONTAIN1, TANKTRT, TANKTRT1
Event Description:	New Operating Permit - FINAL PERMIT - WITHDRAWAL REQUEST RECEIVED
Actual Date:	11/30/1987

EPA Id:	CAD000819680
Facility Type:	Historical - Non-Operating
Unit Names:	CONTAIN1, TANKTRT, TANKTRT1
Event Description:	New Operating Permit - FINAL PERMIT
Actual Date:	06/29/1987

EPA Id:	CAD000819680
Facility Type:	Historical - Non-Operating

DRAFT

Map ID
Direction
Distance
Elevation | Site | MAP FINDINGS | Database(s) | EDR ID Number
EPA ID Number

GENERAL ELECTRIC MEDICAL SYSTEMS (Continued) **S111865965**

Unit Names: CONTAIN1, TANKTRT, TANKTRT1
Event Description: New Operating Permit - FINAL PERMIT (EXPIRES)
Actual Date: 06/29/1992

EPA Id: CAD000819680
Facility Type: Historical - Non-Operating
Unit Names: CONTAIN1, TANKTRT, TANKTRT1
Event Description: New Operating Permit - FINAL PERMIT (EFFECTIVE)
Actual Date: 06/29/1987

Closure:
EPA Id: CAD000819680
Facility Type: Historical - Non-Operating
Unit Names: CONTAIN1, TANKTRT, TANKTRT1
Event Description: Closure Final - RECEIVE CLOSURE CERTIFICATION
Actual Date: 12/22/1988

EPA Id: CAD000819680
Facility Type: Historical - Non-Operating
Unit Names: CONTAIN1, TANKTRT, TANKTRT1
Event Description: Closure Final - CLOSURE PLAN RECEIVED
Actual Date: 11/30/1987

EPA Id: CAD000819680
Facility Type: Historical - Non-Operating
Unit Names: CONTAIN1, TANKTRT, TANKTRT1
Event Description: Closure Final - CLOSURE PLAN APPROVED
Actual Date: 10/21/1988

EPA Id: CAD000819680
Facility Type: Historical - Non-Operating
Unit Names: CONTAIN1, TANKTRT, TANKTRT1
Event Description: Closure Final - ISSUE CLOSURE VERIFICATION
Actual Date: 06/28/1991

Alias:
EPA Id: CAD000819680
Facility Type: Historical - Non-Operating
Alias Type: Project Code (Site Code)
Alias: 100393

A2
NNE
1/2-1
0.624 mi.
3297 ft.

Relative:
Higher

Actual:
208 ft.

GENERAL ELECTRIC MEDICAL SYSTEMS
3920 SECURITY PARK DR
RANCHO CORDOVA, CA 95742

Site 2 of 2 in cluster A

SEMS-ARCHIVE **1000214137**
CORRACTS **CAD000819680**
RCRA-TSDF
RCRA-SQG
FINDS
HAZNET
ECHO

SEMS-ARCHIVE:
Site ID: 903397
EPA ID: CAD000819680
Federal Facility: N
NPL: Not on the NPL
Non NPL Status: Deferred to RCRA

DRAFT

GENERAL ELECTRIC MEDICAL SYSTEMS (Continued) **1000214137**

Following information was gathered from the prior CERCLIS update completed in 10/2013:
Site ID: 0903397
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL
Non NPL Status: Deferred to RCRA

CERCLIS-NFRAP Site Contact Details:
Contact Sequence ID: 13287961.00000
Person ID: 13003854.00000

Contact Sequence ID: 13293556.00000
Person ID: 13003858.00000

Contact Sequence ID: 13299414.00000
Person ID: 13004003.00000

Program Priority:
Description: RCRA Deferral - Lead Confirmed

CERCLIS-NFRAP Assessment History:
Action: DISCOVERY
Date Started: / /
Date Completed: 03/01/91
Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT
Date Started: / /
Date Completed: 09/16/91
Priority Level: Deferred to RCRA (Subtitle C)

Action: ARCHIVE SITE
Date Started: / /
Date Completed: 01/23/96
Priority Level: Not reported

CORRACTS:

EPA ID: CAD000819680
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 19980911
Action: CA050RF - RFA Completed, Assessment was an RFA
NAICS Code(s): Not reported
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD000819680
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 19910831
Action: CA075ME - CA Prioritization, Facility or area was assigned a medium corrective action priority
NAICS Code(s): Not reported
Original schedule date: Not reported
Schedule end date: Not reported

DRAFT

GENERAL ELECTRIC MEDICAL SYSTEMS (Continued) **1000214137**

EPA ID: CAD000819680
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 19910831
Action: CA029WQ
NAICS Code(s): Not reported
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD000819680
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 19910831
Action: CA074ME
NAICS Code(s): Not reported
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD000819680
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 19910831
Action: CA049PA
NAICS Code(s): Not reported
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD000819680
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: Not reported
Action: CA03193
NAICS Code(s): Not reported
Original schedule date: 19931001
Schedule end date: Not reported

DRAFT

RCRA-TSDF:
Date form received by agency: 09/01/1996
Facility name: GENERAL ELECTRIC MEDICAL SYSTEMS
Facility address: 3920 SECURITY PARK DR
RANCHO CORDOVA, CA 95742
EPA ID: CAD000819680
Contact: Not reported
Contact address: Not reported
Not reported
Contact country: US
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 09
Land type: Private
Classification: TSDF
Description: Handler is engaged in the treatment, storage or disposal of hazardous waste

Owner/Operator Summary:
Owner/operator name: GENERAL ELECTRIC CO

GENERAL ELECTRIC MEDICAL SYSTEMS (Continued) **1000214137**

Owner/operator address: 3920 SECURITY PARK
CITY NOT REPORTED, CA 99999
Owner/operator country: Not reported
Owner/operator telephone: (916) 361-4202
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: MCDONNELL DOUGLAS CORP
Owner/operator address: 11505 DOUGLAS RD
RANCHO CORDOVA, CA 95670
Owner/operator country: Not reported
Owner/operator telephone: (916) 351-0550
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

DRAFT

Historical Generators:
Date form received by agency: 02/14/1996
Site name: GENERAL ELECTRIC MEDICAL SYSTEMS
Classification: Large Quantity Generator

Corrective Action Summary:
Event date: 08/31/1991
Event: CA029WQ

Event date: 08/31/1991
Event: CA049PA

Event date: 08/31/1991
Event: CA074ME

Event date: 08/31/1991
Event: CA Prioritization, Facility or area was assigned a medium corrective action priority.

Event date: 09/11/1998

GENERAL ELECTRIC MEDICAL SYSTEMS (Continued) **1000214137**

Event: RFA Completed, Assessment was an RFA.

Event date: Not reported
Event: CA03193

Facility Has Received Notices of Violations:
Regulation violated: Not reported
Area of violation: TSD - Financial Requirements
Date violation determined: 05/19/1988
Date achieved compliance: 07/23/1988
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 05/26/1988
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 05/30/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 02/22/1989
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 02/21/1989
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 05/19/1988
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: TSD - Financial Requirements
Date achieved compliance: 07/23/1988
Evaluation lead agency: State

Evaluation date: 01/19/1988
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 12/22/1987
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

DRAFT

GENERAL ELECTRIC MEDICAL SYSTEMS (Continued) **1000214137**

FINDS:

Registry ID: 110009552607

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Registry ID: 110000609173

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

DRAFT

HAZNET:

envid:	1000214137
Year:	1996
GEPAID:	CAD000819680
Contact:	MCDONNEL DOUGLAS CORPORATION
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	3920 SECURITY PARK
Mailing City,St,Zip:	RANCHO CORDOVA, CA 956700000
Gen County:	Not reported
TSD EPA ID:	WAD000812909
TSD County:	Not reported
Waste Category:	Other inorganic solid waste
Disposal Method:	Not reported
Tons:	1.9836
Cat Decode:	Other inorganic solid waste
Method Decode:	Not reported
Facility County:	Sacramento

envid:	1000214137
Year:	1996
GEPAID:	CAD000819680
Contact:	MCDONNEL DOUGLAS CORPORATION
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	3920 SECURITY PARK
Mailing City,St,Zip:	RANCHO CORDOVA, CA 956700000
Gen County:	Not reported
TSD EPA ID:	CA0000084517
TSD County:	Not reported
Waste Category:	Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)
Disposal Method:	Transfer Station
Tons:	1.6262

GENERAL ELECTRIC MEDICAL SYSTEMS (Continued) **1000214137**

Cat Decode:	Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)
Method Decode:	Transfer Station
Facility County:	Sacramento
envid:	1000214137
Year:	1996
GEPAID:	CAD000819680
Contact:	MCDONNEL DOUGLAS CORPORATION
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	3920 SECURITY PARK
Mailing City,St,Zip:	RANCHO CORDOVA, CA 956700000
Gen County:	Not reported
TSD EPA ID:	WAD000812909
TSD County:	Not reported
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	2.2500
Cat Decode:	Asbestos containing waste
Method Decode:	Not reported
Facility County:	Sacramento
envid:	1000214137
Year:	1995
GEPAID:	CAD000819680
Contact:	MCDONNEL DOUGLAS CORPORATION
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	3920 SECURITY PARK
Mailing City,St,Zip:	RANCHO CORDOVA, CA 956700000
Gen County:	Not reported
TSD EPA ID:	WAD000812909
TSD County:	Not reported
Waste Category:	Other inorganic solid waste
Disposal Method:	Not reported
Tons:	.7129
Cat Decode:	Other inorganic solid waste
Method Decode:	Not reported
Facility County:	Sacramento
envid:	1000214137
Year:	1993
GEPAID:	CAD000819680
Contact:	MCDONNEL DOUGLAS CORPORATION
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	3920 SECURITY PARK
Mailing City,St,Zip:	RANCHO CORDOVA, CA 956700000
Gen County:	Not reported
TSD EPA ID:	CAT000613950
TSD County:	Not reported
Waste Category:	Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method:	Transfer Station
Tons:	3.74999999999
Cat Decode:	Liquids with halogenated organic compounds >= 1,000 Mg./L
Method Decode:	Transfer Station
Facility County:	Sacramento

DRAFT

MAP FINDINGS

Map ID / Direction / Distance / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number

GENERAL ELECTRIC MEDICAL SYSTEMS (Continued) **1000214137**

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

ECHO:

Envid:	1000214137
Registry ID:	110000609173
DFR URL:	http://echo.epa.gov/detailed_facility_report?fid=110000609173

Envid:	1000214137
Registry ID:	110009552607
DFR URL:	http://echo.epa.gov/detailed_facility_report?fid=110009552607

DRAFT

APPENDIX D

Preliminary Screen for Vapor Encroachment Conditions Matrix

DRAFT

Screen for Vapor Encroachment Conditions Matrix
Jaeger Ranch Property
WKA No. 11103.01

Phase I ESA Screen for Vapor Encroachment Conditions (VEC) matrix includes a (1) **Search Radius Test,** (2) **Chemicals of Concern Test (COC),** and (3) a **Critical Distance Test**[1].

(1) Search Radius Test: Are there any known or suspect contaminated sites in the primary area of concern within the corresponding search radii? (if yes, see attached Table A).

(Yes) No If No, then screening for a VEC is complete and no VEC *currently* exists, go to #4. If Yes, then:

(2) **Chemicals of Concern**[2] **Test**: Are COC likely to be present within the area of concern for those known or suspect contaminated sites identified based on the Search Distance Test?

(Yes) No If No, then screening for a VEC is complete and no VEC *currently* exists, go to #4. If Yes, then:

If Yes, check all COC that apply on attached Table B.

(3) Critical Distance Test: A plume test to determine whether or not COC in the contaminated plume(s) may be within the critical distance.

(3a) Is information related to the contaminated(s) plume available (i.e. isoconcentration maps, site drawings, etc.)?
(Yes) No

(3b) If ***No***, then screening for a VEC is complete and no VEC *currently* exists, go to #4. If ***Yes***, then:

(3c) Is the site less than 100 feet to the nearest edge of a contaminated [non-petroleum hydrocarbon] plume(s)?
(Yes) No

(3d) Is the site less than 30 feet to the nearest edge of a dissolved petroleum hydrocarbon plume(s)?
(Yes) No

DRAFT

If the distance from the nearest edge of a contaminated plume to the nearest existing or planned structure on the site is less than 100 feet for non-petroleum hydrocarbon COC, or less than 30 feet for dissolved petroleum hydrocarbons, then it is presumed that a VEC *currently* exists beneath the site. If the distance from the nearest edge of the contaminated plume is greater than or equal to 100 feet for non-petroleum hydrocarbons, or 30 feet for dissolved petroleum hydrocarbon chemicals of concern, then it is presumed unlikely that a VEC *currently* exists beneath the site.

(4) Is it likely that a VEC *currently* exists beneath the site?
Yes (No) If *Yes,* then recommend performing a full scope VEC assessment according to ASTM E 2600-10.

[1] Based on guidance presented in the ASTM E 2600-10 Standard.
[2] Chemical(s) of concern (COC): See attached table for typical chemicals of concern (as presented in Appendix X6.1 of the ASTM E 2600-10 Standard).

APPENDIX G

The Ranch Project Consistency with Rancho Cordova General Plan Policies

APPENDIX G: THE RANCH PROJECT CONSISTENCY WITH RANCHO CORDOVA GENERAL PLAN POLICIES

GENERAL PLAN POLICY	*PROJECT CONSISTENCY*
LAND USE	
Policy LU.1.3 – Maintain a strong jobs-housing ratio, with a diverse job base and corresponding housing stock, within the Planning Area. Improve the relationship and proximity of jobs to housing and commercial services. (Further implemented through Action LU.1.3.2)	**Consistent.** As described in Section 3.11, the project is generally consistent with the City's General Plan in regards to the mix of residential and nonresidential land uses. Additionally, the project area includes retail and commercial uses interspersed with residential uses as envisioned for the SunCreek/Preserve Planning Area; thereby providing jobs within proximity to housing consistent with the General Plan. Further, the future employment growth associated with the project is consistent with the growth anticipated in the SACOG 2016 MTP/SCS.
Policy LU.1.4 - Promote high quality, efficient, and cohesive land utilization that minimizes negative impacts (e.g., traffic congestion and visual blight) and environmental hazards (e.g. flood, soil instability) on adjacent neighborhoods and infrastructure and preserve existing and future residential neighborhoods from encroachment of incompatible activities and land uses.	**Consistent.** The proposed project has been designed to minimize congestion, visual imposition, and environmental hazards between adjoining, but different land uses, as discussed in The Ranch Draft EIR.
Policy LU.1.6 Ensure adequate provisions for development of civic uses (public/quasi-public). (Further implemented by Action LU.1.6.1).	**Consistent.** The proposed project includes the public uses including park and recreation facilities, trails, and a recreation center.
Policy LU.1.7 – Promote higher density and intensity land uses that support transit within one- half mile of major transit stations. Development should be pedestrian- and transit-friendly with direct connections to transit. Large, expansive parking fields that separate the retail from the station are prohibited.	**Consistent.** The project is not located within one-half mile of a major transit station. The project includes multifamily development near the proposed retail and commercial areas and locates the higher intensity land uses (268 multifamily units and approximately 5 acres of commercial uses) associated with the project in close proximity to the planned Signature Transit Line facility.
Policy LU.1.9 - The City shall require development to protect one acre of existing farmland of equal or higher quality for each acre of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance that would be converted to non- agricultural uses. This protection may consist of the establishment of farmland conservation easements, farmland deed restrictions, or other appropriate farmland conservation in perpetuity, but may also be utilized for compatible wildlife conservation efforts. The farmland to be preserved shall be located within Sacramento County and must have adequate water supply to support agricultural use. As part of the consideration of land areas proposed to be protected, the City shall consider the benefits of preserving farmlands in proximity to other protected lands.	**Consistent.** The majority of the project site is depicted on the California Department of Conservation's Farmland Mapping and Monitoring Program as Grazing Land, with some portions of the site depicted as Urban and Built-Up Land. Grazing Land is suitable for the grazing of livestock and does not qualify as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Therefore, no protection of existing farmland is required and the proposed project is consistent with this policy.
Policy LU.1.11 – Proper buffering for the Kiefer landfill of a 2,000-foot buffer around the permitted footprint of the landfill shall be required. Where appropriate, land use density, buffers, or other measures should be used when planning future land uses near the landfill.	**Consistent.** No portion of the project site falls within 2,000 feet of the land fill footprint.
Policy LU.2.1 - Ensure future land use and growth within the Planning Area adheres to the City's smart growth principles, as described in this Element.	**Consistent.** The proposed project impacts the applicable Smart Growth Principles as follows: *Transportation Choices* - In addition to major and minor roads planned throughout the project, the project would provide an on-site transit facility consistent with the

GENERAL PLAN POLICY	*PROJECT CONSISTENCY*
	City's Transit Master Plan. Additionally, the project has proposed pedestrian/bicycle path network for the site. *Housing Choices* - The proposed project includes a mix of medium and low-density residential land uses, including age-restricted and non-age restricted, providing choices for future residents in the area of density and ultimately home size and price. *Mixed Land Uses* - The proposed project includes residential, commercial, parks, and recreation land uses. *Compact Urban Development* - The proposed project is designed with commercial land uses surrounded by residential uses and connected by both roads and pedestrian/bicycle paths and has clustered uses in order to avoid the large, continuous nature preserve that would be established by the project. Neighborhoods within the proposed project are consistent with the building blocks concept of the City and are therefore clustered and compact. *Walkable Neighborhoods* - Residential land uses in the proposed project are clustered, fostering a walkable community and serving to create compact residential areas. In addition, the project will include sidewalks, off-street trails, standard pedestrian crossing warning signs, signs to identify pedestrian and bicycle paths, and pedestrian signal heads. Sidewalks will be constructed as part of the frontage improvements along all new roadway construction for Jaeger Road/Rancho Cordova Parkway and Chrysanthy Boulevard. *Preservation/Integration of Natural Resources* - The proposed project includes an approximate 199.5-acre preserve. The project would also include additional park and open space associated with project drainage improvements and public trails. *Quality Design/Sense of Place* - The final design of structures within the proposed project will be subject to the The Ranch Special Planning Area Handbook (SPA Handbook), which has been developed to provide a cohesive community with high quality design.
Policy LU.2.2 - Promote new development and redevelopment in accordance with the building blocks concepts of neighborhoods, villages, and districts.	**Consistent.** The project is designed in accordance with the building blocks concept to include cohesive neighborhoods.
Policy LU.2.4 – Use Community Plans, Proposed projects, and development projects to promote pedestrian movement via direct, safe, and pleasant routes that connect destinations inside and outside the plan or project area.	**Consistent.** The project includes ample bicycle and pedestrian trails throughout the project site. The project provides a well detailed plan for internally pleasant travel as well as for connection with external routes.
Policy LU.2.5 - Phase growth based on infrastructure capacity, infrastructure financing, and the timing of the design, approval/permitting, and construction of transportation facilities and other infrastructure.	**Consistent.** The project includes a phasing plan. The project is to be accomplished in four phases. These four phases are designed to match the construction of infrastructure.

APPENDIX G: THE RANCH PROJECT CONSISTENCY WITH RANCHO CORDOVA GENERAL PLAN POLICIES

GENERAL PLAN POLICY	*PROJECT CONSISTENCY*
Policy LU.2.6 - Discourage the over concentration of retail shopping facilities in a single location in order to ensure neighborhood services are distributed and integrated into the City's neighborhoods and that market demand is met without diminishing the viability of nearby commercial properties with the same customer base. Further implemented by Action LU.2.6.1.	**Consistent.** The project implements the building block approach in conjunction with the provision of a neighborhood-serving commercial parcel. The commercial parcel is sized appropriately for the area and would not result in an over concentration of retail uses.
Policy LU.2.7 – Promote sustainable development that reduces the impact of projects on energy, water, and transportation systems. Encourage sustainable development to occur in ways that complement the built form.	**Consistent.** The proposed project integrates sustainable development practices at each level of community planning and implementation. See Section 3.6 (Greenhouse Gases, Climate Change, and Energy) of The Ranch Draft EIR for a description of the project's design measures as well as mitigation requirements that reduce energy consumption, water use, reduce vehicle trips, reduce GHG emissions, and promote sustainable development.
Policy LU.3.4 - Consult with state and federal regulatory and resource agencies during initial review of development projects to identify potential environmental conflicts and establish, if appropriate, concurrent application processing schedules.	**Consistent.** The proposed project is subject to CEQA review. A Notice of Preparation (NOP) to prepare an EIR was published for this project. State and federal regulatory and resource agencies had the opportunity to provide comments based on this initial notice and will also be notified and provided the opportunity to comment during the public review period for The Ranch Draft EIR.
Policy LU.3.5 - Work with community service providers such as the Cordova Recreation and Park District and the Rancho Cordova Neighborhood Center to expand their services to new areas of the City as opportunities arise.	**Consistent.** Plan development, including location and sizing of parks, has been coordinated with the Cordova Recreation and Park District.
Policy LU.3.9 - Ensure that land uses adjacent to or near Mather Airport are subject to the location, use, and height restrictions of the most recently adopted CLUP/ALUP at the time of development consideration, except when the CLUP/ALUP is under an update process. In the circumstance of a CLUP/ALUP update, coordinate with the County in the review of development projects to determine the most appropriate development restrictions for the continued operation of the airport.	**Consistent.** The proposed project area is not located within the Airport Area of Influence. Therefore, the CLUP guidelines and restrictions on development do not apply to the proposed project or any of the alternatives.
Policy LU.6.2 – Ensure subsequent detailed land planning for those Planning Areas with Conceptual Land Plans.	**Consistent.** The proposed project provides a detailed land use plan in the SPA Handbook, including land use designations, proposed land uses depicted on a land use map, and policies and details regarding development standards and allowed uses.
URBAN DESIGN	
Policy UD.1.1 – Promote the design of residential neighborhoods in accordance with the desired character of the village and district in which it is located. All City codes and regulations shall be updated to reflect the City's vision for Urban Design neighborhoods, villages, and districts as the building blocks of the City.	**Consistent.** The Rancho Cordova General Plan currently designates the project site as the SunCreek/Preserve Planning Area. As part of the proposed project, the applicant is requesting a General Plan Amendment to establish specific General Plan land use designations, LDR, MDR, HDR, C, P/OS, and NR in order to implement the General Plan's land use concept for the project's portion of the SunCreek/Preserve Planning Area. The proposed project has been designed to incorporate the development directives and conform with the expectations described in the Rancho Cordova General Plan.

APPENDIX G: THE RANCH PROJECT CONSISTENCY WITH RANCHO CORDOVA GENERAL PLAN POLICIES

GENERAL PLAN POLICY	*PROJECT CONSISTENCY*
Policy UD.1.3 - Design neighborhoods as walkable places, approximately 1/3 mile in radius, and connected to adjoining neighborhoods by trails, open spaces, and commercial activity nodes.	**Consistent.** The site plan for the proposed project illustrates that no community is more than 1/2-mile wide, and is planned to be developed in neighborhood phases that are at most 1/4-- to 1/3--mile wide. The proposed neighborhoods would be connected to adjoining neighborhoods by trails, open spaces, and the proposed commercial area.
Policy UD.1.4 - Design residential subdivisions with a mix of housing types and densities that satisfy a wide range of lifestyles and income levels. (Further implemented by Actions UD.1.3.1, UD.1.3.2 and UD.1.3.3)	**Consistent.** The proposed project contains many different housing types that would be utilized in the community.
Policy UD.1.5- Develop vibrant urban cores (village centers and local town centers) as the primary activity centers of each district within the City.	**Consistent.** The proposed project includes two commercial sites at the intersection of Chrysanthy Boulevard and Rancho Cordova Parkway. These areas are intended to serve as a local town center, with retail and commercial uses providing products and services to the surrounding residents.
Policy UD.1.6 - Encourage the design of village and local town centers as pedestrian- and cyclist- friendly activity centers with successful public spaces.	**Consistent.** This is accomplished by the overall design approach with an emphasis upon proximity to open space and limiting conflict between the automobile and the pedestrian and bicyclist. The commercial areas are located along Rancho Cordova Parkway and Chrysanthy Boulevard, which will have pedestrian and bicycle access routes included.
Policy UD.2.1 - Require new development and redevelopment areas to be designed in accordance with the City's building blocks concept.	**Consistent.** See response to Policy LU.2.6 (below).
Policy UD.2.6 - Create streetscape designs with themes that are oriented toward and inviting to pedestrians and cyclists and that are unique in character to a district, corridor, or area within the City.	**Consistent.** The proposed project includes an extensive network of pedestrian trails and paths (See discussion under Policy LU.2.4 above) as well as bicycle lanes and paths. The proposed project includes details on the design and location of these paths, providing a unique visual character.
Policy UD.3.1 – Ensure quality design of new development and redevelopment with an integrated architectural style.	**Consistent.** The proposed Architectural + Site Design Guidelines (included in the SPA Handbook) for multifamily and commercial uses include guidance as to the architectural design of buildings in the project area, thereby establishing a cohesive style for the project area. The architectural design of the single-family residential areas is also guided by the proposed SPA Handbook.
Policy UD.3.2 - Create safe, inviting, and functional pedestrian and cyclist environments in commercial, office, and mixed-use projects.	**Consistent.** The proposed project creates an interconnected and multi-modal transportation network and provides a hierarchical interconnected street system with streets as inviting, multi-modal public spaces. Various modes of transportation including an intricate pedestrian and bicycle trail network will reduce automobile dependency. Additionally, the entire pedestrian system will provide access to meaningful destinations like commercial centers, schools, and parks on the project site and off-site.
Policy UD.3.3 - Promote the incorporation of public spaces and pedestrian amenities into all commercial and mixed-use projects.	**Consistent.** This is accomplished by the overall design approach with an emphasis upon proximity to open space and limiting conflict between the automobile and the pedestrian and bicyclist. Extensive public space, including active and passive parks, open space, and a trail system, is included in the proposed project.

GENERAL PLAN POLICY	*PROJECT CONSISTENCY*
Policy UD.4.2 - Design new development to be compatible with surrounding development in ways that contribute to the desired character of the City and District.	**Consistent.** The urban development on the project site would be consistent with, and appear as a continuation of, development in the subdivision to the north and west and future development in the area to the south and east.
ECONOMIC DEVELOPMENT	
Policy ED.1.8 – Provide a variety of housing types in Rancho Cordova to support a diverse economy, including workforce housing, move-up housing, and executive housing.	**Consistent.** See response to Policy UD.1.1 (above).
Policy ED.2.1 – Provide a mix of neighborhood retail, community retail, regional retail and specialty retail to serve Rancho Cordova and surrounding communities to achieve the recommendations outlined in the City's Retail Strategy.	**Consistent.** The proposed project includes 32,000 square feet of neighborhood-serving commercial/retail space for the planned community and nearby areas.
Policy ED.2.3 - Strategically locate regional retail properties to take advantage of the local and regional transportation corridors (e.g., Highway 50, State Route 16, light rail, etc.) and integrate local retail and services into neighborhoods.	**Consistent.** The proposed project proposes a retail center along Chrysanthy Boulevard and Rancho Cordova Parkway, that would be integrated into the community through pedestrian and bicycle connections as well as landscaping transitions.
HOUSING	
Policy H.1.1 – Improve the City's jobs-housing balance through ensuring that housing development in Rancho Cordova provides opportunities for all income levels in order to serve the full range of available and projected jobs in the City.	**Consistent.** The variety of residential densities (including low and medium densities) provided for in the proposed project would result in a range of housing types and opportunities for a range of income levels. See also, response to Policy UD.1.1 and Policy LU.1.3 (above).
Policy H.1.2: Maintain adequate sites that support a range of housing types appropriate for the City's housing needs, taking into account employment projections, household growth, and the City's share of regional housing needs.	**Consistent.** See response to Policy UD.1.1 (above), Policy LU.1.3 (above) and Policy H.1.1 (above).
Policy H.1.3 – Promote a broader range of housing options for executives.	**Consistent.** The project includes non-restricted and age-restricted single family residential uses, with a variety of lot sizes and significant community amenities (parks, off-street trail system, open space, age-restricted community center and garden), that may appeal to executives.
Policy H.1.4 – Ensure that an appropriate range of housing opportunities is available to accommodate both local and out-of-region executives.	**Consistent.** See response to Policy UD.1.1 and Policy H.1.3 (above).
Policy H.1.5 – Promote higher density housing in close proximity to transit, employment, and appropriate services, such as transit-oriented development.	**Consistent.** The proposed project includes high and medium density residential uses adjacent to the proposed Signature Bus Route facility along Rancho Cordova Parkway and the two commercial parcels at the intersection of Rancho Cordova Parkway and Chrysanthy Boulevard.
Policy H.4.1 – Ensure that neighborhoods are developed in a balanced, sustainable manner, avoiding over-concentration of affordable housing or over-sized rental complexes and providing a range of housing prices and rents.	**Consistent.** As identified in the Tentative Subdivision Map for the project, the high and medium densities of housing within the project are interspersed with lower density residential, avoiding over concentration. The various lot sizes and housing types would result in a range of housing prices and rents.
Policy H.4.5 – Ensure that adequate parking is available in multi-family rental properties, condominiums, townhomes, and senior facilities.	**Consistent.** The proposed project will be subject to Zoning Code Section 23.719, which regulates parking and loading standards.

GENERAL PLAN POLICY	*PROJECT CONSISTENCY*
Policy H.4.6 – Ensure that housing appropriate for empty-nesters and single persons, such as townhomes or small lot, single-family homes, rather than large single-family homes, is developed.	**Consistent.** See discussion under Policy H.1.1 above. Higher density residential development is included within the proposed project and is typically associated with townhomes and other multi-family homes as well as small lot detached homes.
Policy H.4.8 – The City will continue to promote equal housing opportunity for all persons regardless of race, religion, sex, marital status, ancestry, nation origin, color, disability, familial status, source of income, or sexual orientation.	**Consistent.** The proposed project encourages diversity and balance by encouraging housing, social and economic diversity through an appropriate mix of integrated land uses that result in a vibrant community with rich experiences and conveniences.
Policy H.4.9 – Promote improved aesthetics and amenities in residential construction.	**Consistent.** The project has prepared a SPA Handbook that addresses the design of the neighborhoods, including architectural styles and development standards for single-family, multifamily, and commercial uses, as well as a Parks + Open Space Design Program and Circulation Design Standards.
Policy H.6.1 – Require energy efficiency in the design and construction of housing developments through implementation of the State Energy Conservation Standards (Title 24). The long-term economic and environmental benefits of energy efficiency shall be weighed against any increased initial costs of energy saving measures. Encourage sustainable development by reducing energy use.	**Consistent.** All construction is required to conform to Title 24 as that regulation exists at the time of construction of commercial, office and residential uses. Additionally, details regarding project design measures that address energy efficiency as well as mitigation measures are presented in Section 3.2 (Air Quality) and Section 3.6 (Greenhouse Gases, Climate Change, and Energy) of The Ranch Draft EIR.
Policy H.6.2 – Encourage participation in SMUD's photovoltaic (solar), energy efficiency, peak reduction, and other comparable programs.	**Consistent.** The project would either provide on-site renewable energy systems for the residential lots, which would then connect to SMUD's system, or would partner with SMUD to provide a renewable energy commitment for the residential uses.
Policy H.7.4 – Require non-residential development to provide for the affordable housing needs generated or contributed to by their development.	**Consistent.** The project provides two multifamily parcels, including one parcel that could be used to provide affordable housing. See response to Policy UD.1.1 and Policy H.4.1 (above).
CIRCULATION	
Policy C.1.1 - Implement the Circulation Plan with the Roadway System and Sizing Diagram, shown as Figure C-1, as a modified grid network.	**Consistent.** The proposed project is consistent with the General Plan's Roadway System and Sizing Diagram.
Policy C.1.2 - Seek to maintain operations on all roadways and intersections at Level of Service D or better at all times, including peak travel times, unless maintaining this Level of Service would, in the City's judgment, be infeasible and/or conflict with the achievement of other goals. Congestion in excess of Level of Service D may be accepted in these cases, provided that provisions are made to improve traffic flow and/or promote non-vehicular transportation as part of a development project or a City-initiated project. Please see Policy C.1.3 for additional policy guidance related to this issue. Examples of system improvements which may be accepted when Level of Service D cannot be maintained include the following, where the improvement or funding is in excess of standard City requirements: Development of on- or off-street bicycle or pedestrian circulation (not including sidewalks that are constructed as part of roadway improvements);	**Consistent.** The analysis included in Section 3.13 of The Ranch Draft EIR utilized LOS D as the minimum acceptable level of service for City roadways analyzed in the section and identifies feasible mitigation measures to reduce the project's impact to City roadway facilities as well as identifies where maintaining LOS D is not feasible, and/or would conflict with other City goals. The project design provides for new roadway connections and additional trail, bike and transit facilities to promote non-vehicular transportation. The proposed project land use mix also provides for residential, retail, employment, and public (parks) uses within close proximity that would reduce length of vehicle miles traveled and internalize project traffic.

GENERAL PLAN POLICY	*PROJECT CONSISTENCY*
Providing or funding public transportation facilities or services; Other features as determined appropriate by the City.	
Policy C.1.4 - Discourage the creation of private roadways, except when the roadways are constructed to public roadway standards and private maintenance is assured, or are used in an affordable residential development.	**Consistent.** Some private roadways would be included in the proposed project. However, these would be maintained by private homeowner associations and would be constructed to the City's roadway standards.
Policy C.1.6 - Strongly discourage the use of cul-de-sacs on local roads, except where they are necessary due to site-specific concerns, such as habitat areas, that preclude construction of through routes. When cul-de-sacs are used, they should include bicycle and pedestrian connections to trail systems or adjacent major or connector streets.	**Consistent.** The proposed project includes some cul-de-sacs on local roads. However, when cul-de-sacs are used, they provide "pass-through" lots that offer bicycle and pedestrian connections to trail systems or adjacent major or connector streets and offer visibility into the cul-de-sacs from adjacent streets and uses.
Policy C.1.7 - Require the installation of traffic pre-emption devices for emergency vehicles (police and fire) at all newly constructed intersections and seek to retrofit all existing intersections to incorporate these features.	**Consistent.** The proposed project would install traffic pre-emption devices for emergency vehicles (police and fire) at signalized intersections.
Policy C.1.8 - Ensure that where traffic calming devices or techniques are employed, adequate access is provided for police and fire vehicles.	**Consistent.** See response to Policy C.1.7, above.
Policy C.1.9 – In an effort to reduce automobile traffic and congestion and increase use of other travel modes, support the use of trip reduction programs.	**Consistent.** As noted in Section 3.2, the project will implement a trip reduction program.
Policy C.1.10 – Encourage maximum block lengths that provide multiple vehicular paths and increase pedestrian circulation around the City at the neighborhood level. The City's preferred block length is less than 600 feet. Block lengths between 600 and 800 feet may be acceptable on a case-by- case basis, and block lengths greater than 800 feet are generally considered unacceptable.	**Consistent.** The proposed neighborhood streets have been developed to provide block lengths in the range of the City's preferred block lengths.
Policy C.2.1 - Create a system of on- and off- street trails and multi-use paths, as generally illustrated on Figure C-2, that are used for walking and bicycling and that are attractive, natural, and safe transportation corridors.	**Consistent.** The proposed project includes bike paths and trails that provide for an extensive trails network. Many of these trails are located in landscaped parkways, and along open space corridors within the proposed project. Additional circulation features for pedestrians and bicycles are also planned along major roads within the project.
Policy C.2.2 – Require bicycle and pedestrian connections to public transit systems at stops, stations, and terminals; carpool/vanpool park-and- ride lots; and activity centers (e.g., schools, community centers, medical facilities, senior residences, parks, employment centers, high- density residential areas, commercial centers).	**Consistent.** Transit (a Signature Bus Route) is planned for Rancho Cordova Parkway within the project area and the project would provide a transit stop for the planned route. The pedestrian and bicycle system, including a range of sidewalks, bike facilities, and an off-street trails, within the proposed project would allow for connections to planned transit as well as the proposed commercial, parks, and recreation uses.
Policy C.2.3 - In designing development projects, design for the pedestrian first.	**Consistent.** All subdivisions will be constructed with sidewalks which will connect to the trail system. Additionally, see response to Policy UD.3.2, above.

GENERAL PLAN POLICY	*PROJECT CONSISTENCY*
Policy C.2.4 - Provide sidewalks throughout the City. Meandering sidewalks are discouraged, except where necessary to accommodate site- specific features such as trees or habitat.	**Consistent.** Sidewalks are planned to run parallel with the curb on all public streets.
Policy C.2.5 - Provide safe and convenient bicycle access to all parts of the community.	**Consistent.** See discussion under Policy C.2.1 and Policy C.2.2 above.
Policy C.2.6 – Provide on-street bike lanes along all connector roadways and on local and major roadways when necessary to provide for interconnected routes. On-street bike routes may be provided on local, connector, and major roadways as deemed necessary by the City.	**Consistent.** See discussion under Policy C.2.1 and Policy C.2.2 above.
Policy C.2.8 - Promote bicycling and walking as a safe and attractive activity. Educate all road users to share the road and interact safely.	**Consistent.** The project has been designed to provide an extensive network of pedestrian and bicycle facilities, with marked features, including road crossings, bicycle lanes, etc., to encourage safe walking and bicycling. Additionally, see response to Policy UD.3.2, above.
Policy C.2.10 – Create safe and efficient at-grade crossings of roadways for pedestrian and bicyclists.	**Consistent.** See discussion under Policy C.2.1 and Policy C.2.2 above.
Policy C.3.1 - Advocate and develop transit services which meet the needs of residents and employees in Rancho Cordova.	**Consistent.** As previously described, the project will provide a transit facility to serve the Signature Bus Route planned for Rancho Cordova Parkway by the City's Transit Master Plan.
Policy C.3.3 - Promote the integration of transit facilities into new development.	**Consistent.** See response to Policy C.3.1 above.
Policy C.5.2 - Require proposed new development projects to analyze their contribution to increased traffic and to implement improvements necessary to address their impact on facilities not covered by a fee program.	**Consistent.** A traffic study has been prepared for the proposed project, and is included incorporated by reference. Results from the study, including requirements for the project to contribute to facilities that it has the potential to significantly impact, have been incorporated into the Section 3.13, Traffic and Transportation, of The Ranch Draft EIR.
Policy C.5.3 - Assess fees sufficient to cover the fair share portion of all new development impacts on the local and regional transportation system.	**Consistent.** The proposed project will be subject to improvement fees based on the necessary improvements identified in the traffic study prepared for this project.
OPEN SPACE, PARKS AND TRAILS	
Policy OSPT.1.1 - Review all proposals for new residential development to ensure each project complies with the City's minimum standards for parkland dedication, and is consistent with Cordova Recreation and Park District goals.	**Does Not Conflict.** The Rancho Cordova General Plan requires that new residential development dedicate parkland at a rate of five acres of land per 1,000 people. The proposed project is addressing the demand for parkland through a two-fold approach: the project would dedicate a 10.78-acre active park site, a 1.21-acre passive park site, and a 7.86-acre passive recreation open space site to the CRPD. The project would provide an additional trail along the nature preserve as well as private facilities, including a 5.40-acre recreation center, a 1.10-acre garden, and a 1.40-acre passive park, for the age-restricted component of the project. These facilities would total 27.75 acres, not including the off-street trail system adjacent the preserve.

GENERAL PLAN POLICY	*PROJECT CONSISTENCY*
Policy OSPT.1.2 - Coordinate with the Cordova Recreation and Park District to ensure that parks are provided, developed, and operated in a way that ensures that the City's parks goals are achieved throughout the community.	**Consistent.** See response to Policy OSPT.1.1, and Policy LU.3.5, above.
Policy OSPT.1.3 - Encourage park development adjacent to school sites and other compatible uses (public and private) for enhanced civic space and integration into the community.	**Consistent.** The proposed project does not include school sites. The proposed parks, trails, and public open space areas would be located within neighborhoods and adjacent to the preserve area.
Policy OSPT.1.4 – Ensure that adequate and reliable funding sources are established for the long term maintenance of parks and trails.	**Consistent.** The proposed project would dedicate the public parks and 7.86 acres of passive open space to CRPD. The timing for the delivery of parks, recreation facilities, and open space shall be determined before the approval of the first tentative subdivision map in the corresponding phase of the proposed project.
Policy OSPT.2.1 - Review all proposals for new residential development to ensure compliance with the City's minimum open space standards.	**Consistent.** See response to Policy OSPT.1.1, above.
Policy OSPT.2.3 - Maximize the potential benefits of natural resource mitigation lands within urban development.	**Consistent.** The preserve portion of the project area not only provides mitigation for impacts to biological resources but also a benefit to the visual quality of the site. The preserve provides further benefit through trails planned along the perimeter of the preserve (outside the actual preserve area) in order to increase opportunities for community enjoyment of the preserve.
Policy OSPT.3.1 - Develop a trails system that provides for maximum connectivity, so that all trails are linked for greater use as recreational and travel routes.	**Consistent.** The proposed project includes pedestrian, bicycle, and trail facilities that provide connectivity throughout the site as well as connections to existing and planned bike and pedestrian facilities in the area. The project also proposes enhanced street crossing locations for trails.
Policy OSPT.3.3 - Provide major off-street trails with grade-separated crossings or enhanced at- grade pedestrian crossings, especially across four- lane streets and collector roadways, to provide safe routes free from conflicts with vehicles.	**Consistent.** The proposed project includes enhanced at-grade pedestrian crossings along Chrysanthy Boulevard.
INFRASTRUCTURE, SERVICES AND FINANCE	
Policy ISF.2.1 – Ensure the development of public infrastructure that meets the long-term needs of residents and ensure infrastructure is available at the time such facilities are needed.	**Consistent.** See response to Policy LU.2.5, above.
Policy ISF.2.2 - Coordinate with independent public service providers, including schools, parks and recreation, utility, transit, and other service districts, in developing service and financial planning strategies.	**Consistent.** Preparation of the proposed project has involved coordination with public service providers, including The Sacramento Metro Fire Department, Rancho Cordova Police Department, Elk Grove Unified School District (EGUSD), the CRPD, utility providers, and other responsible public service providers.
Policy ISF.2.3 - Ensure that adequate funding is available for all infrastructure and public facilities, and make certain that the cost of improvements is equitably distributed.	**Consistent.** The phasing plan will assure equitable distribution of burden for facility costs within the proposed project as well as timely provision of needed infrastructure.

GENERAL PLAN POLICY	*PROJECT CONSISTENCY*
Policy ISF.2.4 - Ensure that water supply and delivery systems are available in time to meet the demand created by new development, or are guaranteed to be built by bonds or securities.	**Consistent.** A Water Supply Assessment was prepared in conjunction with this EIR. The project was anticipated in Sacramento County Water Agency's Urban Water Management Plan and the project would connect to existing water supply infrastructure.
Policy ISF.2.5 - Ensure that water flow and pressure are provided at sufficient levels to meet domestic, commercial, industrial, and firefighting needs.	**Consistent.** All subdivision improvements will meet City and Sacramento Metropolitan Fire District standards, including flow and pressure standards.
Policy ISF.2.6 - Ensure that sewage conveyance and treatment capacity are available in time to meet the demand created by new development, or are guaranteed to be built by bonds or other sureties.	**Consistent.** The requirement addresses mandatory findings of the State Map Act to be made at the time of approval of a final map for recordation. This language will be referenced in the project Development Agreement
Policy ISF.2.7 – Minimize visual impacts and physical impediments of utility sites, infrastructure, and equipment.	**Consistent.** The majority of utility infrastructure will be installed underground, eliminating visual impacts. Electrical supply infrastructure is commonly installed underground between power substations and individual customers. Telephone and cable television are installed underground as well. Water supply and wastewater infrastructure is to be installed under roadways. Existing transmission lines will be visible and have been incorporated into the proposed open space lots and preserve to reduce visual impacts.
Policy ISF.3.2 – Support enhanced library services for existing and future residents and employees that exceed regional and national standards.	**Does Not Conflict.** The proposed project does not include a library. As discussed in Section 3.12 (Public Services and Recreation), the proposed project does not trigger the need for new facilities or expansion of existing facilities associated with other public services and facilities, such as libraries and community buildings. The project would be subject to the City's impact fees for new development as well as property taxes, sales taxes, and other revenues generated by the proposed project, that may be used to fund library and other public services.
NATURAL RESOURCES	
Policy NR.1.1 - Protect rare, threatened, and endangered species and their habitats in accordance with State and federal law.	**Consistent.** The proposed project design provides protection of a majority of the higher quality wetland habitat on the site. In addition to the site design, the project site's biological resources have been evaluated under several technical studies. Multiple studies to address biological resources have been prepared for the project to identify potential impacts and, where necessary, mitigation measures have been identified to address impacts, as described in Section 3.3 (Biological Resources) of The Ranch Draft EIR to address impacts to rare, threatened and endangered species and habitats in accordance with State and federal law, as well as to the furthest extent feasible.
Policy NR.1.2 - Conserve Swainson's hawk habitat consistent with State policies and Department of Fish and Game guidelines.	**Consistent.** The Biological Resources section (Section 3.3) address impacts to Swainson's hawk and provides mitigation to reduce impacts to Swainson's hawks and other tree-nesting birds (see Section 3.3). This mitigation would reduce project impacts to these species to the furthest extent feasible and be consistent with the General Plan policy.

GENERAL PLAN POLICY	*PROJECT CONSISTENCY*
Policy NR.1.6 – Participate in the development of a habitat conservation plan to address the unique biological resources in Rancho Cordova.	**Consistent.** The City has been an active participant in development of the South Sacramento Habitat Conservation Plan (SSHCP) and the project anticipates participation in the SSHCP.
Policy NR.1.7 – Prior to project approval, the City shall require a biological resources evaluation for private and public development projects in areas identified to contain or possibly contain listed plant and/or wildlife species based upon the City's biological resource mapping provided in the General Plan EIR or other technical materials.	**Consistent.** See analysis associated with Policy NR1.1.
Policy NR.1.8 - The City shall encourage creation of habitat preserves that are immediately adjacent to each other in order to provide interconnected open space areas for animal movement.	**Consistent.** The project would preserve approximately 199.5 acres as a nature preserve that would be deeded to a third-party conservation entity. Preserves are physically connected either directly with one another or by way existing creek corridors and or drainages. The preserve has been designed as a continuous feature to that runs the extent of the project site, to allow connectivity to potential future preserve areas on adjoining lands to the east and southwest.
Policy NR.1.9 - The City shall require that impacts to riparian habitats be mitigated at a no net loss of existing function and value based on field survey and analysis of the riparian habitat to be impacted. No net loss may be accomplished by avoidance of the habitat, restoration of existing habitat, or creation of new habitat, or through some combination of the above.	**Consistent.** The Biological Resources section (Section 3.3) of The Ranch Draft EIR address impacts to riparian habitats. The project would not have substantial adverse effects on riparian habitat.; however, the project would result in impacts to sensitive natural community. Mitigation is provided (see Section 3.3) to reduce impacts to sensitive habitats to a less than significant level and be consistent with the General Plan policy.
Policy NR.1.11 - In such cases where habitat preserves are crossed by a roadway, or where two adjacent preserves are separated by a roadway, the roadway shall be designed or updated with wildlife passable fencing separating the roadway from the preserve and/or shall incorporate design features that allow for the movement of wildlife across or beneath the road without causing a hazard for vehicles and pedestrians on the roadway.	**Consistent.** See discussion under Policy NR.1.10 above.
Policy NR.2.1 – Require mitigation that provides for "no net loss" of wetlands consistent with current State and federal policies.	**Consistent.** See discussion under Policy NR.1.9 above. Mitigation measures included in Section 3.3 of The Ranch Draft EIR require that the project applicant ensure no net loss of wetlands.
Policy NR.2.2 - Ensure that direct and indirect effects to wetland habitats are minimized by environmentally sensitive project siting and design, to the maximum extent feasible.	**Consistent.** See discussion under Policy NR.1.10 above. Mitigation measures under Section 3.3 of the EIR address direct and indirect effects to wetland resources. Because of the general plan designation for the project area, which contemplates fairly dense urban development, the avoidance of all wetland habitat has proven to be infeasible. However, wetlands have been avoided or impacts have been minimized where feasible and the project has included a continuous preserve area to provide for the long-term protection and conservation of an extensive amount of wetland habitats.

GENERAL PLAN POLICY	*PROJECT CONSISTENCY*
Policy NR.2.5 - The City shall require that drainage improvements that discharge into areas of wetlands to be preserved are, to the maximum extent feasible, designed to mimic the undeveloped surface water flow conditions of the area in terms of seasonality, volume, and flow velocity.	**Consistent.** The proposed project proposes to discharge directly to basins which will have multiple functions and which will mimic natural discharge sequences.
Policy NR.3.2 - In general, the City will encourage the preservation of existing location, topography, and meandering alignment of creeks. Where necessary, and if consistent with other City policies, the creation and realignment of creek corridors shall be constructed to recreate the character of the natural creek corridor. Channelization and the use of concrete within creek corridors shall not be supported.	**Consistent.** See discussion under Policy NR.1.1 above. An extensive amount of on-site wetlands and aquatic areas would be retained through the project area within the proposed preserve area.
Policy NR.3.4 – Encourage projects that contain wetland preserves or creeks, or are located adjacent to wetland preserves or creeks, to be designed for visibility and, as appropriate, access.	**Consistent.** The proposed project includes significant opportunity for access and direct view of the onsite wetlands and preserve areas.
Policy NR.4.1 - Conserve native oak and landmark tree resources for their historic, economic, aesthetic, and environmental value.	**Consistent.** There are no trees located on the project site. Therefore, the project would not conflict with the City's Preservation and Protection of Private Trees Ordinance.
Policy NR.4.2 - Improve overall landscaping quality and sustainability in all areas visible to the public.	**Consistent.** See response to Policy UD.2.4, above.
Policy NR.4.4 - Prior to the approval of any public or private development project in areas identified or assumed to contain trees, the City shall require that a determinate survey of trees species and size be performed. If any native oaks or other native trees six inches or more in diameter at breast height (dbh), multi-trunk native oaks or native trees of 10 inches or greater dbh, or non-native trees of 18 inches or greater dbh that have been determined by a certified arborist to be in good health are found to occur, such trees shall be avoided if feasible. If such trees cannot be avoided, the project applicant shall do one of the following: All such trees shall be replaced at an inch- for-inch ratio. A replacement tree planting plan shall be prepared by a certified arborist or licensed landscape architect and shall be submitted to the City of Rancho Cordova for approval prior to removal of trees; or, The project applicant shall submit a mitigation plan that provides for complete mitigation of the removal of such trees in coordination with the City of Rancho Cordova. The mitigation plan shall be subject to the approval of the City. If the City of Rancho Cordova adopts a tree preservation ordinance at any time in the future, any future development activities shall be subject to that ordinance instead.	**Consistent.** See analysis under Policy NR4.1.

GENERAL PLAN POLICY	*PROJECT CONSISTENCY*
Policy NR.5.1 - Promote water conservation within existing and future urban uses.	**Consistent.** As required by Mitigation Measure 3.2-1 of The Ranch Draft EIR, the project would use water-efficient irrigation systems and would use low-flow appliances for all residential uses.
Policy NR.5.2 - Encourage the use of treated wastewater to irrigate parks, golf courses, and landscaping.	**Does not Conflict.** The project does not include the use of treated wastewater.
Policy NR.5.3 - Protect surface and ground water from major sources of pollution, including hazardous materials contamination and urban runoff.	**Consistent.** Mitigation measures included in Section 3.8 of The Ranch Draft EIR as well as compliance with the required SWPPP and City's existing NPDES permit (CAS082597) would ensure that the proposed project is consistent with this policy.
Policy NR.5.4 - Prevent contamination of the groundwater table and surface water, and remedy existing contamination to the extent practicable.	**Consistent.** This issue is addressed in Section 3.8 (Hydrology and Water Quality) of The Ranch Draft EIR.
Policy NR.5.5 – Minimize erosion to stream channels resulting from new development in urban areas consistent with State law.	**Consistent.** The drainage plan submitted with the proposed project applies a project wide system of water quality/flow duration control/stormwater detention basins to accomplish this policy.
Policy NR.5.6 - Incorporate Storm Water, Urban Runoff, and Wetland Mosquito Management Guidelines and Best Management Practices into the design of water retention structures, drainage ditches, swales, and the construction of mitigated wetlands in order to reduce the potential for mosquito-borne disease transmission.	**Consistent.** Basins and swales will be constructed and operated in conformance with applicable City requirements, as well as health and safety best management practices.
Policy NR.5.7 - Continue to cooperate and participate with the County, other cities, and the Regional Water Quality Control Board regarding compliance with the joint National Pollutant Discharge Elimination System Permit (NPDES No. CAS082597) or any subsequent permit and support water quality improvement projects in order to maintain compliance with regional, state and federal water quality requirements.	**Consistent.** A drainage plan is included as part of the proposed project. The Drainage Plan will be consistent with the joint National Pollutant Discharge Elimination System Permit (NPDES No. CAS082597).
Policy NR.7.1 - Increase energy conservation Citywide.	**Consistent.** See response to Policy H.6.1, Policy H.6.2, and Policy LU.2.7, above.
Policy NR.7.2 - Promote the development and use of advanced energy technology and building materials in Rancho Cordova.	**Consistent.** See response to Policy H.6.1, Policy H.6.2, and Policy LU.2.7, above.
Policy NR.7.3 – Encourage the development of energy efficient buildings and subdivisions.	**Consistent.** See response to Policy H.6.1, Policy H.6.2, and Policy LU.2.7, above.
CULTURAL AND HISTORIC RESOURCES	
Policy CHR.1.3 - Establish review procedures for development projects that recognize the history of the area in conjunction with State and federal laws. (Further implemented through Actions CHR.1.3.1 and CHR.1.3.2)	**Consistent.** A cultural resource study was completed for the project. Outreach to Native American tribes was performed as required by State law. Mitigation measures have been identified in Section 3.4 (Cultural and Tribal Resources) of The Ranch Draft EIR.
SAFETY	
Policy S.1.1 - Maintain acceptable levels of risk of injury, death, and property damage resulting from reasonably foreseeable safety hazards in Rancho Cordova.	**Consistent.** Section 3.7 (Hazards and Hazardous Materials) of The Ranch Draft EIR analyzes potential hazards associated with the project. As discussed, the project applicant would be required to submit a Construction Site Management Plan for review and approval by the City. Additionally, the applicant would be required to submit a HMBP to the Sacramento County Environmental Management Department (CUPA) for review and approval. Compliance with these programs is intended to reduce

GENERAL PLAN POLICY	*PROJECT CONSISTENCY*
	the risks of injury, death, and property damage to levels deemed acceptable under federal and state law.
Policy S.1.5 - The City shall require written confirmation from applicable local, regional, state, and federal agencies that known contaminated sites have been deemed remediated to a level appropriate for land uses proposed prior to the City approving site development or provide an approved remediation plan that demonstrates how contamination will be remediated prior to site occupancy. This documentation will specify the extent of development allowed on the remediated site as well as any special conditions and/or restrictions on future land uses.	**Consistent.** See discussion under Policy S.1.1 above.
Policy S.2.2 - Manage the risk of flooding by discouraging new development located in an area that is likely to flood.	**Consistent.** The project site is not located in the 100-year floodplain.
Policy S.2.3 – Discourage the creation of new parcels when the presence of easements, floodplain, marsh, or riparian habitat, and/or other features would leave insufficient land to build and operate structures. This policy shall not apply to open space lots specifically created for dedication to the City or another appropriate party for habitat protection, flood control, drainage, or wetland maintenance.	**Consistent.** The project is designed with a mixture of residential, commercial, and natural spaces to maximize the developed area while preserving aquatic resources.
Policy S.2.4 – Ensure that adequate drainage exists for both existing and new development.	**Consistent.** Development will provide adequate drainage and will not increase flows from the project site.
Policy S.3.2 - Ensure that new structures are protected from damage caused by geologic and/or soil conditions to the greatest extent feasible.	**Consistent.** The project site is located in an area of low seismic activity, site soils are not subject to liquefaction, and structures at the site would be designed in accordance with State building standards.
Policy S.5.2 Consider the potential impact of hazardous facilities on the public and/or adjacent or nearby properties posed by reasonably foreseeable events. The City considers an event to be "reasonably foreseeable" when the probability of the event occurring is greater than one in one million per year.	**Consistent.** The proposed project does not include development of hazardous facilities. Impacts associated with hazardous materials are considered and addressed in Section 3.7, Hazards and Hazardous Materials, of The Ranch Draft EIR.
Policy S.5.3 - Regulate the storage of hazardous materials and waste consistent with State and Federal law.	**Consistent.** Commercial uses would likely store varying amounts of hazardous materials. These uses will be required to adhere to all federal, state, and local laws relating to the storage of hazardous materials.
Policy S.5.5 - Separate hazardous or toxic materials from the public.	**Consistent.** Commercial uses to be constructed as part of the proposed project are the most likely location for the use or storage of hazardous or toxic materials. These uses will be required to adhere to all federal, state, and local laws relating to the use, storage, or transport of hazardous materials.
Policy S.7.1 - Use Crime Prevention Through Environmental Design (CPTED) principles in the design of projects and buildings.	**Consistent.** The proposed project has undergone review by City departments, including the Police Department. Police Department recommendations have been considered in development of the project, including use of various CPTED principles.
AIR QUALITY	
Policy AQ.1.2 – Evaluate projects for compliance with State and federal ambient air quality standards and the Sacramento Metropolitan Air Quality Management	**Consistent.** Compliance with these standards and thresholds are addressed in Sections 3.2 (Air Quality) and 3.6 (Greenhouse Gases, Climate Change, and Energy) of The Ranch Draft EIR.

GENERAL PLAN POLICY	*PROJECT CONSISTENCY*
District's (SMAQMD) thresholds of significance. (Refer to Table AQ-3 in this Element for ambient air quality standards.)	
Policy AQ.1.5 - Require odor impact analyses be conducted for evaluating new development requests that either could generate objectionable odors that may violate SMAQMD Rule 402 or any subsequent rules and regulations regarding objectionable odors near sensitive receptors or locate new sensitive receptors near existing sources of objectionable odors. Should objectionable odor impacts be identified, odor mitigation shall be required in the form of setbacks, facility improvements or other appropriate measures.	**Consistent.** The proposed project does not include land uses that would generate significant odors. Odor impacts on proposed residential uses are discussed in Section 3.2 (Air Quality) of The Ranch Draft EIR.
Policy AQ.2.1 - Promote strategic land use patterns for businesses that reduce the number and length of motor vehicle trips and that encourage multiple forms of transportation for employees and patrons.	**Consistent.** See response to Policy LU 1.3, above.
Policy AQ.2.2 - Encourage mixed-use developments that put residences in close proximity to services, employment, transit, schools, and civic facilities/services.	**Consistent.** See response to Policy LU1.3, above.
Policy AQ.2.5 - Utilize the guidelines in the California Air Resources Control Board *Air Quality and Land Use Handbook: A Community Health Perspective* when evaluating new development requests that either would generate toxic air contaminant emissions near sensitive receptors or locate new sensitive receptors near existing sources of air toxic emissions or order to minimize health hazards, and implement all feasible best available control technology, as required by SMAQMD.	**Consistent.** The Ranch Draft EIR (see Section 3.2) evaluated potential impacts associated with the guidelines in the California Air Resources Control Board Air Quality and Land Use Handbook: A Community Health Perspective.
Policy AQ.3.1 - Promote walking and bicycling as viable forms of transportation to services, shopping, and employment.	**Consistent.** See response to UD.3.2, above.
Policy AQ.4.1 - Promote improved air quality benefits through energy conservation measures for new and existing development.	**Consistent.** See response to Policy LU.2.7, above.
Policy AQ.5.2 - Support programs that encourage children to safely walk or bike to school.	**Consistent.** Existing and future planned schools are located in nearby developments located in the southern portion of the City. The s project will include sidewalks, standard pedestrian crossing warning signs, signs to identify pedestrian and bicycle paths, and pedestrian signal heads to provide safe pedestrian and bicycle facilities and will provide for connectivity to adjacent bicycle and pedestrian facilities. Sidewalks will be constructed as part of the frontage improvements along all new roadway construction for Jaeger Road/Rancho Cordova Parkway and Chrysanthy Boulevard.
NOISE	
Policy N.1.2 - Ensure that the indoor and outdoor areas of new projects will be located, constructed, and/or shielded from noise sources in compliance with the City's noise standards to the maximum extent feasible.	**Consistent.** Proposed project noise impacts are discussed in Section 3.10 of The Ranch Draft EIR. Mitigation measures are presented to reduce noise impacts to indoor and outdoor areas of new projects to the furthest extent feasible.
Policy N.1.3 - Ensure that proposed non-residential land uses likely to exceed the City's standards do not	**Consistent.** Non-residential uses are sited within specific areas of the project area and are located immediately adjacent to other

GENERAL PLAN POLICY	*PROJECT CONSISTENCY*
create noise disturbances in existing noise-sensitive areas.	noise generating uses in order to minimize the area impacted by these noise sources. Additionally, mitigation measures included in Section 3.10 of The Ranch Draft EIR would ensure that impacts to existing noise sensitive areas are consistent with City standards.
Policy N.1.4 - Mitigate noise created by proposed non-transportation noise sources to comply with the City's noise standards to the maximum extent feasible.	**Consistent.** See discussion under Policy N.1.2 above.
Policy N.1.5 - Mitigate noise created by the construction of new transportation noise sources (such as new roadways or new light rail service) to the maximum extent feasible to comply with the City's standards.	**Consistent.** See discussion under Policy N.1.2 above. At present, the City has no plan to extend light rail service through the project area.
Policy N.1.6 – Ensure that comfortable noise levels and adequate privacy are maintained in higher density development.	**Consistent.** See discussion under Policy N.1.2 above.
Policy N.1.7 - To the extent feasible and appropriate, the City shall require the use of temporary construction noise control measures for public and private project that may include the use of temporary noise barriers, temporary relocation of noise-sensitive land uses or other appropriate measures.	**Consistent.** Construction noise impacts are reduced by mitigation measures included in Section 3.10 of The Ranch Draft EIR. Mitigation includes methods described in this policy.
Policy N.1.8 - New residential development shall only be allowed inside of the 60 CNEL Mather Airport Policy Area if the following conditions are met: Noise insulation is provided in all new residential dwelling units that reduces interior noise levels to 45 dB with windows closed in any habitable room. Prospective buyers are notified through the Public Report prepared by the California Department of Real Estate disclosing the fact that the parcel is located within the Mather Airport Policy Area. An Aviation Easement is recorded on the property acknowledging that the property is located within the Mather Airport Policy Area. The easement shall grant the right of flight and unobstructed passage of all aircraft into and out of Mather Airport. The Avigation Easement shall be granted to the County of Sacramento, recorded with the Sacramento County Recorder and filed with the County Department of Airports.	**Consistent.** The proposed project is not located within the 60 CNEL Mather Airport Policy Area.
Policy N.2.2 - Ensure that operational noise levels of new roadway projects will not result in significant noise impacts.	**Consistent.** Section 3.10 of The Ranch Draft EIR evaluates noise exposure associated with new roadway facilities. As discussed in Section 3.10, the project is not anticipated to result in significant noise impacts to existing receptors and mitigation is provided to ensure that sensitive receptors associated with the proposed project are not subjected to significant noise levels.

SOURCE: DE NOVO PLANNING GROUP, 2019; CITY OF RANCHO CORDOVA PLANNING DEPARTMENT, 2019.

APPENDIX H

Environmental Noise Assessment

Environmental Noise Assessment

The Ranch –
Environmental Impact Report

City of Rancho Cordova, California

March 6, 2019

Project # 180804

Prepared for:

De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, California 95762

Prepared by:
Saxelby Acoustics

Luke Saxelby, INCE Bd. Cert.
Principal Consultant
Board Certified, Institute of Noise Control Engineering (INCE)

(916) 760-8821
www.SaxNoise.com | Luke@SaxNoise.com
915 Highland Pointe Drive, Suite 250
Roseville, CA 95678

This section provides a general description of the existing noise sources in the Project vicinity, a discussion of the regulatory setting, and identifies potential noise impacts associated with the proposed Project. Project impacts are evaluated relative to applicable noise level criteria and to the existing ambient noise environment. Mitigation measures have been identified for significant noise-related impacts.

3.7.1 ENVIRONMENTAL SETTING

KEY TERMS

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given area consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of noise.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared.
CNEL	Community noise equivalent level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic acoustic signal, expressed in cycles per second or Hertz.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
$L_{(n)}$	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L_{50} is the sound level exceeded 50 percent of the time during the one hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.
SEL	Sound exposure levels. A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.

3.7 NOISE

FUNDAMENTALS OF ACOUSTICS

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound, and twice as loud as a 60-dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average,

it tends to disguise short-term variations in the noise environment. CNEL is similar to L_{dn}, but includes a +5-dB penalty for evening noise. Table 3.7-1 lists several examples of the noise levels associated with common situations.

TABLE 3.7-1: TYPICAL NOISE LEVELS

COMMON OUTDOOR ACTIVITIES	*NOISE LEVEL (DBA)*	*COMMON INDOOR ACTIVITIES*
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

SOURCE: CALTRANS, TECHNICAL NOISE SUPPLEMENT, TRAFFIC NOISE ANALYSIS PROTOCOL. SEPTEMBER 2013.

EFFECTS OF NOISE ON PEOPLE

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a 1 dBA change cannot be perceived;
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference;

- A change in level of at least 5-dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING NOISE LEVELS

Existing and Surrounding Land Uses

North: The Sunridge Park Village residential area is located directly north of the project site, south of Douglas Road and east of Sunrise Boulevard. A mix of industrial uses and additional residential communities are located north of Douglas Road.

East: The land directly to the east of the project site is vacant.

South: The land directly to the south of the project site is vacant.

West: Anatolia and Anatolia Village residential areas are located directly to the west of the project site. Another residential community is also under construction along with Rancho Cordova Parkway, which is being extended from Douglas Road to Chrysanthy Boulevard.

Existing Ambient Noise Levels

To quantify the existing ambient noise environment in the Project vicinity, short-term and continuous (24-hour) noise level measurements were conducted on the Project site on August 28th and 29th, 2018. The noise measurement locations are shown on Figure 3.7-4. The noise level measurement survey results are provided in Table 3.7-2. Appendix A of Appendix F shows the complete results of the noise monitoring survey.

The sound level meters were programmed to collect hourly noise level intervals at each site during the survey. The maximum value (L_{max}) represents the highest noise level measured during an interval. The average value (L_{eq}) represents the energy average of all of the noise measured during an interval. The median value (L_{50}) represents the sound level exceeded 50 percent of the time during an interval.

TABLE 3.7-2: SUMMARY OF EXISTING BACKGROUND NOISE MEASUREMENT DATA

SITE	LOCATION	DATE/TIME	L_{DN}	AVERAGE MEASURED HOURLY NOISE LEVELS, dB					
				DAYTIME (7AM-10PM)			NIGHTTIME (10PM-7AM)		
				L_{EQ}	L_{50}	L_{MAX}	L_{EQ}	L_{50}	L_{MAX}
Continuous (24-hour) Noise Level Measurements									
1	31 ft. from centerline of Rancho Cordova Parkway	08/28/18 - 08/29/18	52	51	40	72	44	34	63
2	North boundary of project site, behind 12368 Pawcatuk Way.	08/28/18 – 08/29/18	45	44	37	61	38	35	50
Short-Term Noise Level Measurements									
1	140 ft. from centerline of Rancho Cordova Parkway.	08/28/18 10:58 AM	NA	53	49	64	Construction at housing development to the west is the primary noise source.		

NOTE: SOURCE: SAXELBY ACOUSTICS, 2019.

Larson Davis Laboratories (LDL) Model 820, Model 812, and Model 831 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

EXISTING ROADWAY NOISE LEVELS

To predict existing noise levels due to traffic, the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The model is based upon the Calveno reference noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions.

Traffic volumes for existing conditions were obtained from the Traffic Data prepared for the Project (Kimley Horn). Truck percentages and vehicle speeds on the local area roadways were estimated from field observations.

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each Project-area roadway segment. Where traffic noise barriers are predominately along a roadway segment, a -5 offset was added to the noise prediction model to account for various noise barrier heights. A -5 to dB offset was also applied where outdoor activity areas are shielded by intervening buildings. In some locations, sensitive receptors may be located at distances which vary from the assumed calculation distance and may experience shielding from intervening barriers

or sound walls. However, the traffic noise analysis is believed to be representative of the majority of sensitive receptors located closest to the Project-area roadway segments analyzed in this report.

Table 3.7-3 shows the existing traffic noise levels in terms of L_{dn} at closest sensitive receptors along each roadway segment. A complete listing of the FHWA Model input data is contained in Appendix B of Appendix F.

TABLE 3.7-3: EXISTING TRAFFIC NOISE LEVELS

ROADWAY	*SEGMENT*	*EXTERIOR TRAFFIC NOISE LEVEL, DB L_{DN}*
Jackson Rd.	Bradshaw Rd. to Excelsior Rd.	67.4
Jackson Rd.	Excelsior Rd. to Eagles Nest Rd.	67.1
Jackson Rd.	Eagles Nest Rd. to Sunrise Blvd.	66.1
Jackson Rd.	Sunrise Blvd. to Grant Line Rd.	67.1
Excelsior Rd.	Kiefer Blvd. to Jackson Rd.	60.0
Kiefer Blvd.	Grant Line Rd. to Jackson Rd./SR-16	55.1
International Dr.	Zinfandel Dr. to Sunrise Blvd.	65.2
Mather Blvd.	Femoyer St. to Douglas Rd.	58.1
Douglas Rd.	Mather Blvd. to Sunrise Blvd.	66.3
Douglas Rd.	Sunrise Blvd. to Grant Line Rd.	61.0
White Rock Rd.	Zinfandel Dr. to Sunrise Blvd.	65.3
White Rock Rd.	Sunrise Blvd. to Grant Line Rd.	60.9
White Rock Rd.	Grant Line Rd. to Prairie City Rd.	67.3
Mather Field Rd.	Folsom Blvd. to US 50 WB Ramp	65.7
Mather Field Rd.	US 50 WB Ramp to US 50 EB Ramp	68.7
Mather Field Rd.	US 50 to International Dr.	69.5
Zinfandel Dr.	Folsom Blvd. to US 50 WB	57.0
Zinfandel Dr.	US 50 to White Rock Rd.	66.6
Zinfandel Dr.	White Rock Rd. to International Rd.	65.8
Zinfandel Dr.	International Rd. to Douglas Rd.	59.6
Sunrise Blvd.	US 50 WB Ramp to US 50 EB Ramp	64.3
Sunrise Blvd.	US 50 to Folsom Blvd.	67.1
Sunrise Blvd.	Folsom Blvd. to White Rock Rd.	69.4
Sunrise Blvd.	White Rock Rd. to Douglas Rd.	69.3
Sunrise Blvd.	Douglas Rd. to Jackson Rd.	64.6
Sunrise Blvd.	Jackson Rd. to Grant Line Rd.	66.8
Grant Line Rd.	White Rock Rd. to Douglas Rd.	69.8
Grant Line Rd.	Douglas Rd. to Jackson Rd.	64.7
Grant Line Rd.	Jackson Rd. to Sunrise Blvd.	64.3

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM KIMLEY HORN AND SAXELBY ACOUSTICS. 2019.

3.7.2 REGULATORY SETTING

FEDERAL

There are no federal regulations related to noise that apply to the proposed Project.

STATE

California Environmental Quality Act

The California Environmental Quality Act (CEQA) Guidelines, Appendix G, indicate that a significant noise impact may occur if a project exposes persons to noise or vibration levels in excess of local general plans or noise ordinance standards, or cause a substantial permanent or temporary increase in ambient noise levels. CEQA standards are discussed more below under the Thresholds of Significance section.

California State Building Codes

The State Building Code, Title 24, Part 2 of the State of California Code of Regulations establishes uniform minimum noise insulation performance standards to protect persons within new buildings which house people, including hotels, motels, dormitories, apartment houses and dwellings other than single-family dwellings. Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB L_{dn} or CNEL in any habitable room.

Title 24 also mandates that for structures containing noise-sensitive uses to be located where the L_{dn} or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment

City of Rancho Cordova General Plan

The City of Rancho Cordova General Plan Noise Element includes the following goals, policies, and actions regarding noise that are applicable to the proposed Project:

Goal N-1	Ensure that all new development will be free of noise disturbances.
Policy N-1.1	Establish standards and policies consistent with those in Tables N-1 and N-2 to govern maximum sound levels in new development.
Policy N-1.2	Ensure that the indoor and outdoor areas of new projects will be located, constructed, and/or shielded from noise sources in compliance with the City's noise standards to the maximum extent feasible.
Policy N-1.7	To the extent feasible and appropriate, the City shall require the use of temporary construction noise control measures for public and

private projects that may include the use of temporary noise barriers, temporary relocation of noise-sensitive land uses or other appropriate measures.

Noise Compatibility Standards

Table N-1 (Figure 3.7-1) of the General Plan shows the maximum allowable daytime and nighttime noise levels from non-transportation sources. Table N-2 (Figure 3.7-2) gives an overview of maximum interior and exterior traffic noise exposure for land use categories that are applied throughout the City.

TABLE N-1
CITY NOISE STANDARDS
NOISE LEVEL PERFORMANCE STANDARDS FOR NEW PROJECTS AFFECTED BY OR INCLUDING NON-TRANSPORTATION NOISE SOURCES

Stationary Noise Source	Noise Level Descriptor	Daytime Maximum (7 a.m. to 10 p.m.)	Nighttime Maximum (10 p.m. to 7 a.m.)
Typical	Hourly L_{eq}, dB	55	45
Tonal, impulsive, repetitive, or consist primarily of speech or music	Hourly Leq, dB	50	40

The City may impose noise level standards which are more or less restrictive than those specified above based upon determination of existing low or high ambient noise levels.

Figure 3.7-1: Table N-1 of the City of Rancho Cordova General Plan Noise Element

TABLE N-2
MAXIMUM TRANSPORTATION NOISE EXPOSURE

Land Use	Outdoor Activity Areas[1] Ldn/CNEL, dB	Interior Spaces	
		Ldn/CNEL, dB	Leq, dB[2]
Residential	60[3]	45	--
Residential subject to noise from railroad tracks, aircraft overflights, or similar noise sources which produce clearly identifiable, discrete noise events (e.g., the passing of a single train)	60[3]	40[5]	--
Transient lodging	60[4]	45	--
Hospitals, nursing homes	60[3]	45	--
Theaters, auditoriums, music halls	--	--	35
Churches, meeting halls	60[3]	--	40
Office buildings	--	--	45
Schools, libraries, museums	--	--	45
Playgrounds, neighborhood parks	70	--	--

1 Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use. Where it is not practical to mitigate exterior noise levels at patio or balconies of apartment complexes, a common area such as a pool or recreation area may be designated as the outdoor activity area.

2 As determined for a typical worst-case hour during periods of use.

3 Where it is not possible to reduce noise in outdoor activity areas to 60 dB Ldn/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB Ldn/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

4 In the case of hotel/motel facilities or other transient lodging, outdoor activity areas such as pool areas may not be included in the project design. In these cases, only the interior noise level criterion will apply.

5 The intent of this noise standard is to provide increased protection against sleep disturbance for residences located near railroad tracks.

Figure 3.7-2: Table N-2 of the City of Rancho Cordova General Plan Noise Element

City of Rancho Cordova Municipal Code and Noise Ordinance

Chapter 6.68 of the Municipal Code identifies performance standards for noise. The maximum exterior noise level for Residential Districts is set at 55 dBA. This standard is 5.0 dBA lower between 10:00 P.M and 7:00 A.M. The following table from Section 6.68.070, subsection B (Figure 3.7-3) outlines allowable exterior noise standard exceedances in any one hour. The limits specified in subsection B are reduced by five dBA for noises which are impulsive or consist of speech or music. If the existing ambient noise level exceeds the first four categories in subsection B, then the allowable noise exterior limit shall be increased by five-dBA increments to encompass the ambient noise level.

Cumulative Duration of the Intrusive Sound	Allowance Decibels
1. Cumulative period of 30 minutes per hour	0
2. Cumulative period of 15 minutes per hour	+ 5
3. Cumulative period of 5 minutes per hour	+10
4. Cumulative period of 1 minute per hour	+15
5. Level not to be exceeded for any time per hour	+20

Figure 3.7-3: City of Rancho Cordova Municipal Code. Section 6.68.070, Subsection B

Furthermore, the interior noise level in any residential dwelling unit located in a mixed-use building or development shall not exceed forty-five dBA for a cumulative period of more than five minutes in any hour, fifty dBA for a cumulative period of more than one minute in any hour, or fifty-five dBA for any period of time. There is a slight reprieve in that the allowable noise limit shall be increased by five-dBA increments to encompass the ambient noise level if the existing ambient noise level exceeds the standard.

Exemptions to the interior and exterior noise standards are outlined in Section 6.68.090 of the City's Municipal Code. A list of the exemptions is provided here:

A. School bands, school athletic and school entertainment events;
B. Outdoor gatherings, public dances, shows and sporting and entertainment events, provided said events are conducted pursuant to a license or permit by the city;
C. Activities conducted on parks, public playgrounds and school grounds, provided such parks, playgrounds and school grounds are owned and operated by a public entity or private school;
D. Any mechanical device, apparatus or equipment related to or connected with emergency activities or emergency work;

E. Noise sources associated with construction, repair, remodeling, demolition, paving or grading of any real property, provided said activities do not take place between the hours of 8:00 p.m. and 6:00 a.m. on weekdays and Friday commencing at 8:00 p.m. through and including 7:00 a.m. on Saturday; Saturdays commencing at 8:00 p.m. through and including 7:00 a.m. on the next following Sunday and on each Sunday after the hour of 8:00 p.m.; provided, however, when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in process be continued until a specific phase is completed, the contractor or owner shall be allowed to continue work after 8:00 p.m. and to operate machinery and equipment necessary until completion of the specific work in progress can be brought to conclusion under conditions which will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner;

F. Noise sources associated with agricultural operations, provided such operations do not take place between the hours of 8:00 p.m. and 6:00 a.m.;

G. All mechanical devices, apparatus or equipment which are utilized for the protection or salvage of agricultural crops during periods of adverse weather conditions or when the use of mobile noise sources is necessary for pest control;

H. Noise sources associated with maintenance of residential area property, provided said activities take place between the hours of 6:00 a.m. and 8:00 p.m. on any day except Saturday or Sunday, or between the hours of 7:00 a.m. and 8:00 p.m. on Saturday or Sunday;

I. Any activity, to the extent provisions of Chapter 65 of Title 42 of the United States Code and Articles 3 and 3.5 of Chapter 4 of Part 1 of Division 9 of the Public Utilities Code of the state of California preempt local control of noise regulations and land use regulations related to noise control of airports and their surrounding geographical areas, any noise source associated with the construction, development, manufacture, maintenance, testing or operation of any aircraft engine, or of any weapons system or subsystems which are owned, operated or under the jurisdiction of the United States, or any other activity to the extent regulation thereof has been preempted by state or federal law or regulation;

J. Any noise sources associated with the maintenance and operation of aircraft or airports which are owned or operated by the United States. [Ord. 38-2007 § 1 (Exh. 1(E)); Ord. 21-2003 §§ 2, 4; Ord. 20-2003 §§ 2, 4; SCC 254 § 1 (part), 1976].

VIBRATION STANDARDS

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

The City of Rancho Cordova not have specific policies pertaining to vibration levels. However, vibration levels associated with construction activities and railroad operations are addressed as potential noise impacts associated with Project implementation.

Human and structural response to different vibration levels is influenced by several factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 3.7-4 indicates that the threshold for damage to structures ranges from 0.2 to 0.6 peak particle velocity in inches per second (in/sec p.p.v). One-half this minimum threshold or 0.1 in/sec p.p.v. is considered a safe criterion that would protect against architectural or structural damage. The general threshold at which human annoyance could occur is noted as 0.1 in/sec p.p.v.

TABLE 3.7-4: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS

PEAK PARTICLE VELOCITY		*HUMAN REACTION*	*EFFECT ON BUILDINGS*
MM/SEC.	*IN./SEC.*		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage.

SOURCE: CALTRANS. TRANSPORTATION RELATED EARTHBORN VIBRATIONS. TAV-02-01-R9601 FEBRUARY 20, 2002.

3.7.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the Project will have a significant impact related to noise if it will result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project;
- A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without Project;
- For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the Project area to excessive noise levels within two miles of a public airport or public use airport; or
- For a Project within the vicinity of a private airstrip, expose people residing or working in the Project area to excessive noise levels.

The Project site is not located within two miles of a public or private airport or airstrip. Therefore, airport and airport noise is not discussed further in this analysis.

Determination of a Significant Increase in Noise Levels

The noise standards applicable to the project include the relevant portions of the City of Rancho Cordova General Plan, the City of Rancho Cordova Municipal Code described in the Regulatory Framework Section above (Section 3.7.2), and the following standards. Generally, a project may have a significant effect on the environment if it will substantially increase the ambient noise levels for adjoining areas or expose people to severe noise levels. In practice, more specific professional standards have been developed. These standards state that a noise impact may be considered significant if it would generate noise that would conflict with local project criteria or ordinances, or substantially increase noise levels at noise sensitive land uses. The potential increase in traffic noise from the project is a factor in determining significance. Research into the human perception of changes in sound level indicates the following:

- A 3-dB change is barely perceptible,
- A 5-dB change is clearly perceptible, and
- A 10-dB change is perceived as being twice or half as loud.

A limitation of using a single noise level increase value to evaluate noise impacts is that it fails to account for pre-project-noise conditions. Table 3.7-5 is based upon recommendations made by the

Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. The recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it has been accepted that they are applicable to all sources of noise described in terms of cumulative noise exposure metrics such as the L_{dn}.

TABLE 3.7-5: SIGNIFICANCE OF CHANGES IN NOISE EXPOSURE

AMBIENT NOISE LEVEL WITHOUT PROJECT, LDN	*INCREASE REQUIRED FOR SIGNIFICANT IMPACT*
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more

SOURCE: FEDERAL INTERAGENCY COMMITTEE ON NOISE (FICON)

Based on the Table 3.7-5 data, an increase in the traffic noise level of 5 dB or more would be significant where the pre-project noise levels are less than 60 dB L_{dn}, or 3 dB or more where existing noise levels are between 60 to 65 dB Ldn. Extending this concept to higher noise levels, an increase in the traffic noise level of 1.5 dB or more may be significant where the pre-project traffic noise level exceeds 65 dB L_{dn}. The rationale for the Table 3.7-5 criteria is that, as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause annoyance.

IMPACTS AND MITIGATION MEASURES

Impact 3.7-1: The proposed Project has the potential to increase traffic noise levels at existing receptors. (Less than Significant)

PROPOSED PROJECT ANALYSIS

Tables 3.7-6 and 3.7-7 show the predicted traffic noise level increases on the local roadway network for Existing, Existing + Project, Cumulative No Project, and Cumulative + Project conditions. Appendix B of Appendix F provides the complete inputs and results of the FHWA traffic noise modeling.

TABLE 3.7-6: EXISTING AND EXISTING PLUS PROJECT TRAFFIC NOISE LEVELS

ROADWAY	*SEGMENT*	*NOISE LEVELS (L_{DN}, dB) AT NEAREST SENSITIVE RECEPTORS*				
		EXISTING	*EXISTING + PROJECT*	*CHANGE*	*CRITERIA*[1]	*SIGNIFICANT?*
Jackson Rd.	Bradshaw Rd. to Excelsior Rd.	67.4	67.4	0.0	+1.5 dB	No
Jackson Rd.	Excelsior Rd. to Eagles Nest Rd.	67.1	67.2	0.1	+1.5 dB	No
Jackson Rd.	Eagles Nest Rd. to Sunrise Blvd.	66.1	66.2	0.1	+1.5 dB	No
Jackson Rd.	Sunrise Blvd. to Grant Line Rd.	67.1	67.2	0.1	+1.5 dB	No
Excelsior Rd.	Kiefer Blvd. to Jackson Rd.	60.0	60.0	0.0	+3 dB	No
Kiefer Blvd.	Grant Line Rd. to Jackson Rd./SR-16	55.1	55.1	0.0	+5 dB or > 60 dB	No
International Dr.	Zinfandel Dr. to Sunrise Blvd.	65.2	66.1	0.9	+1.5 dB	No
Mather Blvd.	Femoyer St. to Douglas Rd.	58.1	58.5	0.4	+5 dB or > 60 dB	No
Douglas Rd.	Mather Blvd. to Sunrise Blvd.	66.3	66.5	0.2	+1.5 dB	No
Douglas Rd.	Sunrise Blvd. to Grant Line Rd.	61.0	61.2	0.2	+3 dB	No
White Rock Rd.	Zinfandel Dr. to Sunrise Blvd.	65.3	65.3	0.0	+1.5 dB	No
White Rock Rd.	Sunrise Blvd. to Grant Line Rd.	60.9	61.0	0.1	+3 dB	No
White Rock Rd.	Grant Line Rd. to Prairie City Rd.	67.3	67.4	0.1	+1.5 dB	No
Mather Field Rd.	Folsom Blvd. to US 50 WB Ramp	65.7	65.7	0.0	+1.5 dB	No
Mather Field Rd.	US 50 WB Ramp to US 50 EB Ramp	68.7	68.7	0.0	+1.5 dB	No
Mather Field Rd.	US 50 to International Dr.	69.5	69.5	0.0	+1.5 dB	No
Zinfandel Dr.	Folsom Blvd. to US 50 WB	57.0	57.1	0.1	+5 dB or > 60 dB	No
Zinfandel Dr.	US 50 to White Rock Rd.	66.6	66.8	0.2	+1.5 dB	No
Zinfandel Dr.	White Rock Rd. to International Rd.	65.8	66.1	0.3	+1.5 dB	No
Zinfandel Dr.	International Rd. to Douglas Rd.	59.6	59.6	0.0	+5 dB or > 60 dB	No
Sunrise Blvd.	US 50 WB Ramp to US 50 EB Ramp	64.3	64.5	0.2	+3 dB	No
Sunrise Blvd.	US 50 to Folsom Blvd.	67.1	67.3	0.2	+1.5 dB	No
Sunrise Blvd.	Folsom Blvd. to White Rock Rd.	69.4	69.8	0.4	+1.5 dB	No

Roadway	Segment	Noise Levels (L_{DN}, dB) at Nearest Sensitive Receptors				
		Existing	Existing + Project	Change	Criteria[1]	Significant?
Sunrise Blvd.	White Rock Rd. to Douglas Rd.	69.3	70.2	0.9	+1.5 dB	No
Sunrise Blvd.	Douglas Rd. to Jackson Rd.	64.6	66.1	1.5	+3 dB	No
Sunrise Blvd.	Jackson Rd. to Grant Line Rd.	66.8	67.1	0.3	+1.5 dB	No
Grant Line Rd.	White Rock Rd. to Douglas Rd.	69.8	69.9	0.1	+1.5 dB	No
Grant Line Rd.	Douglas Rd. to Jackson Rd.	64.7	64.7	0.0	+3 dB	No
Grant Line Rd.	Jackson Rd. to Sunrise Blvd.	64.3	64.3	0.0	+3 dB	No

[1] *Where existing noise levels are less than 60 dB an increase of 5 dB would be a significant increase. Additionally, any increase causing noise levels to exceed the City's Normally Acceptable 60 dB Ldn noise level standard at an existing outdoor activity area of a residential use would also be significant. Where existing noise levels exceed 60 dB but are less than 65 dB, an increase of 3 dB or more would be significant. Where existing noise levels exceed 65 dB, an increase of 1.5 dB or more would be significant.*

Source: FHWA-RD-77-108 with inputs from Kimley Horn and Saxelby Acoustics. 2019.

Table 3.7-7: Cumulative and Cumulative + Project Traffic Noise Levels

Roadway	Segment	Noise Levels (L_{DN}, dB) at Nearest Sensitive Receptors				
		Cumulative	Cumulative + Project	Change	Criteria[1]	Significant?
Jackson Rd.	Bradshaw Rd. to Excelsior Rd.	70.0	70.0	0.0	+1.5 dB	No
Jackson Rd.	Excelsior Rd. to Eagles Nest Rd.	70.0	70.0	0.0	+1.5 dB	No
Jackson Rd.	Eagles Nest Rd. to Sunrise Blvd.	68.7	68.7	0.0	+1.5 dB	No
Jackson Rd.	Sunrise Blvd. to Grant Line Rd.	69.1	69.1	0.0	+1.5 dB	No
Excelsior Rd.	Kiefer Blvd. to Jackson Rd.	62.9	62.9	0.0	+3 dB	No
Kiefer Blvd.	Grant Line Rd. to Jackson Rd./SR-16	58.8	59.0	0.2	+5 dB or > 60 dB	No
International Dr.	Zinfandel Dr. to Sunrise Blvd.	68.8	68.8	0.0	+1.5 dB	No
Mather Blvd.	Femoyer St. to Douglas Rd.	63.9	64.2	0.3	+3 dB	No
Douglas Rd.	Mather Blvd. to Sunrise Blvd.	71.1	71.4	0.3	+1.5 dB	No
Douglas Rd.	Sunrise Blvd. to Grant Line Rd.	66.1	66.8	0.7	+1.5 dB	No
White Rock Rd.	Zinfandel Dr. to Sunrise Blvd.	67.6	67.7	0.1	+1.5 dB	No
White Rock Rd.	Sunrise Blvd. to Grant Line Rd.	67.7	67.7	0.0	+1.5 dB	No
White Rock Rd.	Grant Line Rd. to Prairie City Rd.	71.5	71.7	0.2	+1.5 dB	No
Mather Field Rd.	Folsom Blvd. to US 50 WB Ramp	67.0	67.0	0.0	+1.5 dB	No
Mather Field Rd.	US 50 WB Ramp to US 50 EB Ramp	69.6	69.7	0.1	+1.5 dB	No
Mather Field Rd.	US 50 to International Dr.	70.8	70.8	0.0	+1.5 dB	No
Zinfandel Dr.	Folsom Blvd. to US 50 WB	57.2	57.3	0.1	+5 dB or > 60 dB	No
Zinfandel Dr.	US 50 to White Rock Rd.	68.2	68.2	0.0	+1.5 dB	No

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, dB) AT NEAREST SENSITIVE RECEPTORS				
		CUMULATIVE	CUMULATIVE + PROJECT	CHANGE	CRITERIA[1]	SIGNIFICANT?
Zinfandel Dr.	White Rock Rd. to International Rd.	67.7	67.8	0.1	+1.5 dB	No
Zinfandel Dr.	International Rd. to Douglas Rd.	61.6	61.8	0.2	+3 dB	No
Sunrise Blvd.	US 50 WB Ramp to US 50 EB Ramp	64.6	64.6	0.0	+3 dB	No
Sunrise Blvd.	US 50 to Folsom Blvd.	67.4	67.5	0.1	+1.5 dB	No
Sunrise Blvd.	Folsom Blvd. to White Rock Rd.	69.4	69.5	0.1	+1.5 dB	No
Sunrise Blvd.	White Rock Rd. to Douglas Rd.	71.3	71.5	0.2	+1.5 dB	No
Sunrise Blvd.	Douglas Rd. to Jackson Rd.	67.6	67.7	0.1	+1.5 dB	No
Sunrise Blvd.	Jackson Rd. to Grant Line Rd.	69.1	69.1	0.0	+1.5 dB	No
Grant Line Rd.	White Rock Rd. to Douglas Rd.	73.5	73.7	0.2	+1.5 dB	No
Grant Line Rd.	Douglas Rd. to Jackson Rd.	70.1	70.3	0.2	+1.5 dB	No
Grant Line Rd.	Jackson Rd. to Sunrise Blvd.	66.7	66.8	0.1	+1.5 dB	No
Kiefer Blvd.	Eagles Nest Rd. to Sunrise Blvd.	58.6	58.6	0.0	+5 dB or > 60 dB	No
Kiefer Blvd.	Sunrise Blvd. to Rancho Cordova Pkwy.	62.8	62.8	0.0	+3 dB	No
Chrysanthy Blvd.	Sunrise Blvd. to Rancho Cordova Pkwy.	56.1	57.1	1.0	+5 dB or > 60 dB	No
Rancho Cordova Pkwy.	Chrysanthy Blvd. to Kiefer Blvd.	60.8	61.1	0.3	+3 dB	No

[1] WHERE EXISTING NOISE LEVELS ARE LESS THAN 60 DB AN INCREASE OF 5 DB WOULD BE A SIGNIFICANT INCREASE. ADDITIONALLY, ANY INCREASE CAUSING NOISE LEVELS TO EXCEED THE CITY'S NORMALLY ACCEPTABLE 60 DB LDN NOISE LEVEL STANDARD AT AN EXISTING OUTDOOR ACTIVITY AREA OF A RESIDENTIAL USE WOULD ALSO BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 60 DB BUT ARE LESS THAN 65 DB, AN INCREASE OF 3 DB OR MORE WOULD BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 65 DB, AN INCREASE OF 1.5 DB OR MORE WOULD BE SIGNIFICANT.

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM KIMLEY HORN AND SAXELBY ACOUSTICS. 2019.

As shown in Tables 3.7-6 through 3.7-7 some noise-sensitive receptors located along the project-area roadways are currently exposed to exterior traffic noise levels exceeding the City of Rancho Cordova 60 dB L_{dn} exterior noise level standard for residential uses. These receptors would continue to experience elevated exterior noise levels with implementation of the proposed project. For example, sensitive receptors under Existing conditions located adjacent to Sunrise Boulevard between Douglas Road and Jackson Road experience an exterior noise level of 64.6 dB L_{dn}. Under Existing + Project conditions, exterior traffic noise levels are predicted to be approximately 66.1 dB L_{dn}. Exterior noise levels in both scenarios exceed the City's exterior noise level standard of 60 dB L_{dn}. However, the project's contribution of 1.5 dB would not exceed the FICON criteria of 3 dB where existing noise levels exceed 65 dB. Therefore, this would be a **less than significant** impact.

Impact 3.7-2: The proposed Project has the potential to increase noise levels associated with construction activities. (Less than Significant with Mitigation)

During the construction of the Project including roads, water, and sewer lines and related infrastructure, noise from construction activities would add to the noise environment in the Project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in Table 3.7-8, ranging from 76 to 90 dB at a distance of 50 feet. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

TABLE 3.7-8: CONSTRUCTION EQUIPMENT NOISE

TYPE OF EQUIPMENT	*MAXIMUM LEVEL, DB*	
	25 FEET	*50 FEET*
Backhoe	84	78
Compactor	89	83
Compressor (air)	84	78
Concrete Saw	96	90
Dozer	88	82
Dump Truck	82	76
Excavator	87	81
Generator	87	81
Jackhammer	94	89
Pneumatic Tools	91	85

SOURCE: ROADWAY CONSTRUCTION NOISE MODEL USER'S GUIDE. FEDERAL HIGHWAY ADMINISTRATION. FHWA-HEP-05-054. JANUARY 2006.

Noise would also be generated during the construction phase by increased truck traffic on area roadways. A significant Project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

Construction activities would be temporary in nature and are exempt from noise regulation during the hours of 7:00 AM to 8:00 PM on weekdays, as outlined in the City's Municipal Code for noise standard exemptions.

Implementation of the following mitigation measures will ensure that these potential impacts are reduced to a **less-than-significant** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.7-1: *Construction activities shall adhere to the requirements of the City of Rancho Cordova Municipal Code with respect to hours of operation. This requirement shall be noted in the improvements plans prior to approval by the City's Public Works Department.*

Mitigation Measure 3.7-2: *All equipment shall be fitted with factory equipped mufflers, and in good working order. This requirement shall be noted in the improvements plans prior to approval by the City's Public Works Department.*

Impact 3.7-3: The proposed Project has the potential to increase noise vibration associated with construction activities. (Less than Significant with Mitigation)

The primary vibration-generating activities associated with the proposed Project would happen during construction when activities such as grading, utilities placement, and road construction occur. Sensitive receptors which could be impacted by construction-related vibrations, especially vibratory compactors/rollers, are located approximately 25 feet or further from the Project area.

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural damage. Table 3.7-9 shows the typical vibration levels produced by construction equipment.

TABLE 3.7-9: VIBRATION LEVELS FOR VARYING CONSTRUCTION EQUIPMENT

TYPE OF EQUIPMENT	PEAK PARTICLE VELOCITY @ 25 FEET (INCHES/SECOND)	PEAK PARTICLE VELOCITY @ 100 FEET (INCHES/SECOND)
Large Bulldozer	0.089	0.011
Loaded Trucks	0.076	0.010
Small Bulldozer	0.003	0.000
Auger/drill Rigs	0.089	0.011
Jackhammer	0.035	0.004
Vibratory Hammer	0.070	0.009
Vibratory Compactor/roller	0.210	0.026

SOURCE: FEDERAL TRANSIT ADMINISTRATION, TRANSIT NOISE AND VIBRATION IMPACT ASSESSMENT GUIDELINES, MAY 2006

With the exception of vibratory compactors, the Table 3.7-9 data indicate that construction vibration levels anticipated for the project are less than the 0.2 in/sec threshold at a distance of 25 feet. Use of vibratory compactors within 26 feet of the adjacent buildings could cause vibrations in excess of 0.2 in/sec. Therefore, this is a **potentially significant** impact.

Implementation of the following mitigation measures will ensure that these potential impacts are reduced to a **less-than-significant** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.7-3: *Any compaction required less than 26 feet from the adjacent residential structures to the north should be accomplished by using static drum rollers which use weight instead of vibrations to achieve soil compaction. As an alternative to this requirement, pre-construction crack documentation and construction vibration monitoring could be conducted to ensure that construction vibrations do not cause damage to any adjacent structures.*

Impact 3.7-4: The proposed Project has the potential to expose new sensitive receptors to excessive transportation noise. (Less than Significant with Mitigation)

The FHWA traffic noise prediction model was used to predict Cumulative + Project traffic noise levels at the proposed residential land uses associated with the project. Table 3.7-10 shows the predicted traffic noise levels at the proposed residential uses adjacent to the major Project-area arterial roadways. Table 3.7-10 also indicates the property line noise barrier heights required to achieve compliance with an exterior noise level standard of 60 dB L_{dn}.

The complete inputs and results to the FHWA traffic noise prediction model and barrier calculations are contained in the Noise Study Appendix B (see Appendix F of this EIR). The modeled noise barriers assume flat site conditions where roadway elevations, base of wall elevations, and building pad elevations are approximately equivalent.

To describe future noise levels due to traffic, FHWA Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. Direct inputs into the model included traffic volumes provided by Kimley Horn. The FHWA model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. To predict L_{dn}/CNEL values, it is necessary to determine the day/night distribution of traffic and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

TABLE 3.7-10: CUMULATIVE + PROJECT TRANSPORTATION NOISE LEVELS AT PROPOSED RESIDENTIAL USES

SEGMENT	APPROXIMATE RESIDENTIAL SETBACK, FEET[1]	ADT	PREDICTED TRAFFIC NOISE LEVELS, DB L_{DN}[2]					
			NO WALL	6' WALL	7' WALL	8' WALL	9' WALL	10' WALL
CHRYSANTHY BOULEVARD								
Rancho Cordova Pkwy. to Americanos Blvd.	90	14651	64	58	57	56	55	54
Rancho Cordova Parkway								
Douglas Rd. to Chrysanthy Blvd.	100	22140	66	61	60	59	58	57
Chrysanthy Blvd. to Keifer Blvd.	525	8965	52	46	45	44	44	43

NOTES: ADT = AVERAGE DAILY TRIPS

[1] SETBACK DISTANCES ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS TO THE CENTER OF RESIDENTIAL BACKYARDS.

[2] THE MODELED NOISE BARRIERS ASSUME FLAT SITE CONDITIONS WHERE ROADWAY ELEVATIONS, BASE OF WALL ELEVATIONS, AND BUILDING PAD ELEVATIONS ARE APPROXIMATELY EQUIVALENT. SOUND WALL HEIGHT MAY BE ACHIEVE D THROUGH THE USE A WALL AND EARTHEN BERM TO ACHIEVE THE TOTAL HEIGHT (I.E. 6-FOOT WALL ON 2-FOOT BERM IS EQUIVALENT TO AN 8-FOOT TALL WALL).

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM KIMLEY HORN AND SAXELBY ACOUSTICS. 2019.

Table 3.7-10 data indicate that noise barriers 6-7 feet in height would generally be sufficient to achieve compliance with the City of Rancho Cordova 60 dB L_{dn} exterior noise level standard for the proposed residential uses.

INTERIOR NOISE IMPACTS

Modern construction typically provides a 25-dB exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise of 70 dB L_{dn}, or less, will typically comply with the City of Rancho Cordova 45 dB L_{dn} interior noise level standard. Additional noise reduction measures, such as acoustically-rated windows, are generally required for exterior noise levels exceeding 70 dB L_{dn}.

It should be noted that exterior noise levels are typically 2 to 3 dB higher at second floor locations. Additionally, noise barriers do not reduce exterior noise levels at second floor locations. The proposed residential uses are predicted to be exposed to unmitigated first floor exterior transportation noise levels ranging between 52 to 66 dB L_{dn}. Therefore, second floor facades are predicted to be exposed to exterior noise levels of up to 55 to 69 dB L_{dn}.

Based upon a 25-dB exterior-to-interior noise level reduction, interior noise levels are predicted to range between 30 to 44 dB L_{dn}. Accordingly, predicted interior noise levels along the first row of residential uses closest to Chrysanthy Boulevard and Rancho Cordova Parkway would comply with the City's 45 dB L_{dn} interior noise level standard. Therefore, additional interior noise control measures would not be required for these residential uses.

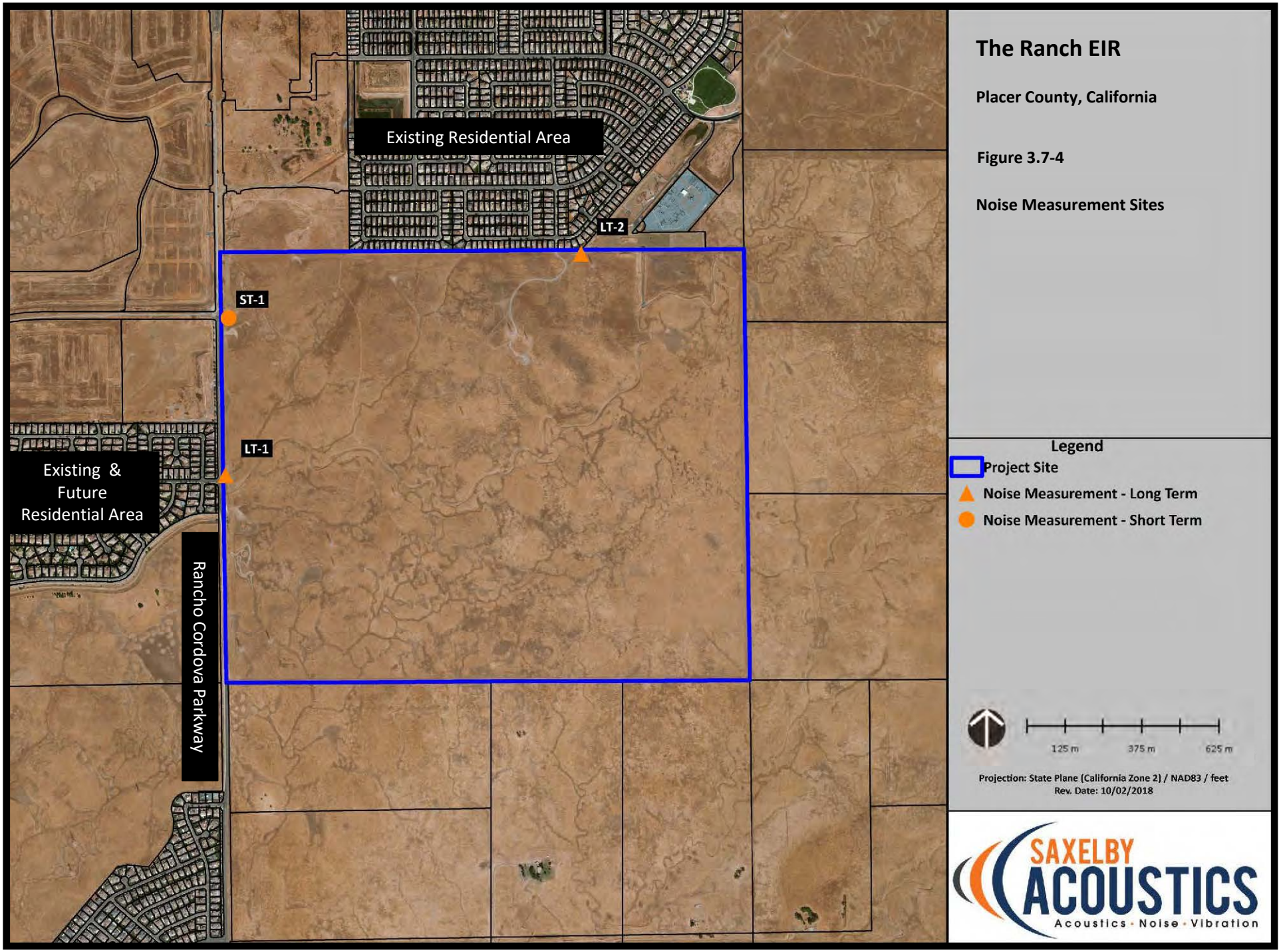
This analysis assumes that mechanical ventilation will be provided to allow residents to keep doors and windows closed, as desired for acoustical isolation. With implementation of the following interior and exterior mitigation measures, the proposed Project would be a **potentially significant** impact relative to this environmental topic.

Implementation of the following mitigation measures will ensure that these potential impacts are reduced to a **less-than-significant** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.7-4: *6- to 7-foot tall sound walls and/or landscaped berm combinations shall be constructed along the primary Project-area roadways, adjacent to proposed residential uses, in order to achieve the City's exterior noise standards. See Table 3.7-10 of Section 3.7 of the Draft EIR for specific noise barrier heights along each roadway. Noise barrier walls shall be constructed of concrete panels, concrete masonry units, earthen berms, or any combination of these materials. Wood is not recommended due to eventual warping and degradation of acoustical performance. These requirements shall be included in the improvements plans prior to their approval by the City's Public Works Department.*

This page left intentionally blank.


Existing Residential Area
LT-2
ST-1
LT-1
Existing & Future Residential Area
Rancho Cordova Parkway
The Ranch EIR
Placer County, California
Figure 3.7-4
Noise Measurement Sites
Legend
Project Site
Noise Measurement - Long Term
Noise Measurement - Short Term
125 m
375 m
625 m
Projection: State Plane (California Zone 2) / NAD83 / feet
Rev. Date: 10/02/2018
SAXELBY ACOUSTICS
Acoustics · Noise · Vibration

This page left intentionally blank.

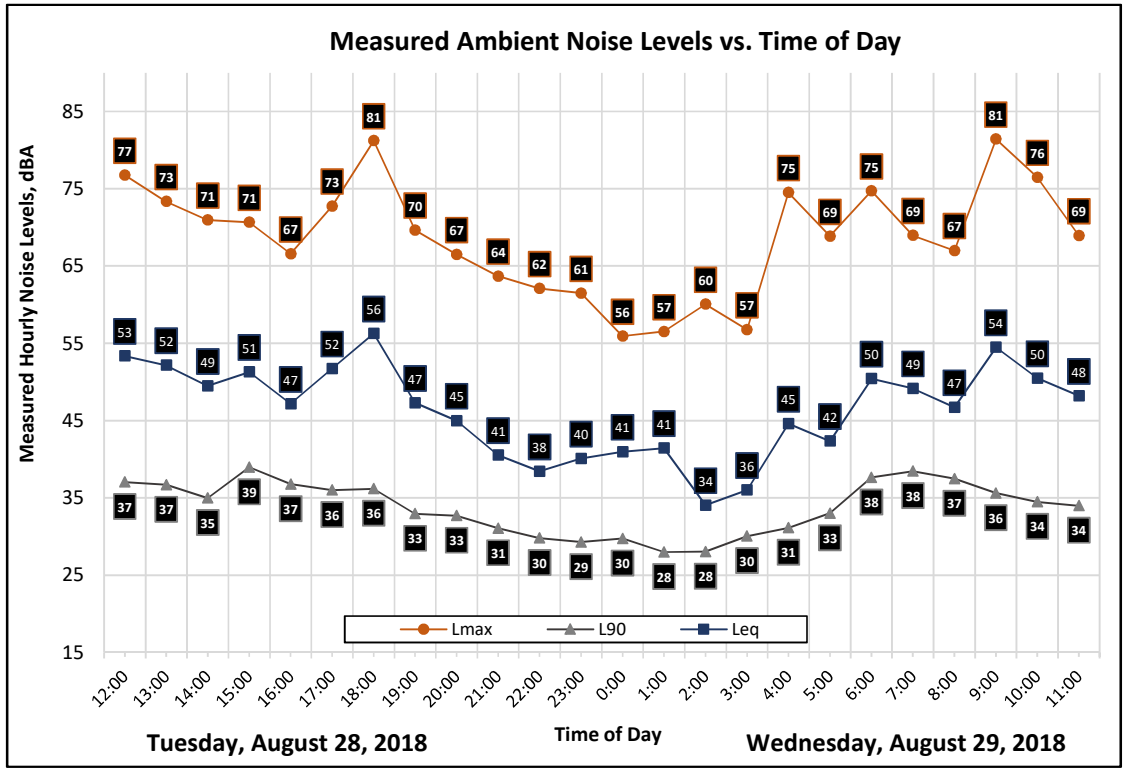
Appendix A: Continuous and Short-Term Ambient Noise Measurement Results

Appendix A-1 : Continuous Noise Monitoring Results

Site: LT-1
Project: The Ranch EIR
Meter: LDL 812-1
Location: West Boundary of Project Site
Calibrator: B&K 4230
Coordinates: 38.5463205°, -121.2241594°

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Tuesday, August 28, 2018	12:00	53	77	42	37
Tuesday, August 28, 2018	13:00	52	73	41	37
Tuesday, August 28, 2018	14:00	49	71	40	35
Tuesday, August 28, 2018	15:00	51	71	44	39
Tuesday, August 28, 2018	16:00	47	67	41	37
Tuesday, August 28, 2018	17:00	52	73	41	36
Tuesday, August 28, 2018	18:00	56	81	42	36
Tuesday, August 28, 2018	19:00	47	70	39	33
Tuesday, August 28, 2018	20:00	45	67	37	33
Tuesday, August 28, 2018	21:00	41	64	33	31
Tuesday, August 28, 2018	22:00	38	62	32	30
Tuesday, August 28, 2018	23:00	40	61	32	29
Wednesday, August 29, 2018	0:00	41	56	36	30
Wednesday, August 29, 2018	1:00	41	57	31	28
Wednesday, August 29, 2018	2:00	34	60	30	28
Wednesday, August 29, 2018	3:00	36	57	32	30
Wednesday, August 29, 2018	4:00	45	75	32	31
Wednesday, August 29, 2018	5:00	42	69	36	33
Wednesday, August 29, 2018	6:00	50	75	41	38
Wednesday, August 29, 2018	7:00	49	69	42	38
Wednesday, August 29, 2018	8:00	47	67	42	37
Wednesday, August 29, 2018	9:00	54	81	40	36
Wednesday, August 29, 2018	10:00	50	76	39	34
Wednesday, August 29, 2018	11:00	48	69	38	34

Statistics	Leq	Lmax	L50	L90
Day Average	51	72	40	36
Night Average	44	63	34	31
Day Low	41	64	33	31
Day High	56	81	44	39
Night Low	34	56	30	28
Night High	50	75	41	38
Ldn	52	Day %		90
CNEL	52	Night %		10

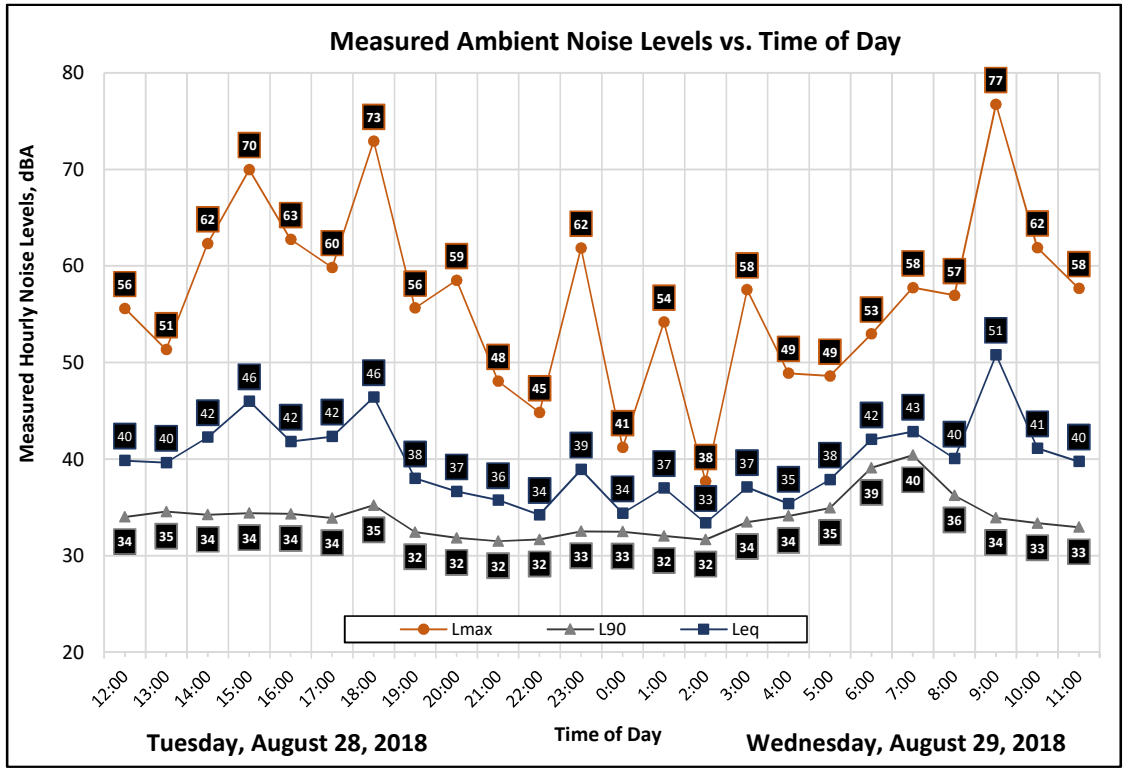


Appendix A-2 : Continuous Noise Monitoring Results

Site: LT-2
Project: The Ranch EIR
Location: North Boundary of Project Site
Coordinates: 38.5518723°, -121.2114082°
Meter: LDL 820-1
Calibrator: B&K 4230

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Tuesday, August 28, 2018	12:00	40	56	37	34
Tuesday, August 28, 2018	13:00	40	51	38	35
Tuesday, August 28, 2018	14:00	42	62	38	34
Tuesday, August 28, 2018	15:00	46	70	37	34
Tuesday, August 28, 2018	16:00	42	63	38	34
Tuesday, August 28, 2018	17:00	42	60	37	34
Tuesday, August 28, 2018	18:00	46	73	39	35
Tuesday, August 28, 2018	19:00	38	56	35	32
Tuesday, August 28, 2018	20:00	37	59	35	32
Tuesday, August 28, 2018	21:00	36	48	35	32
Tuesday, August 28, 2018	22:00	34	45	34	32
Tuesday, August 28, 2018	23:00	39	62	34	33
Wednesday, August 29, 2018	0:00	34	41	34	33
Wednesday, August 29, 2018	1:00	37	54	33	32
Wednesday, August 29, 2018	2:00	33	38	33	32
Wednesday, August 29, 2018	3:00	37	58	35	34
Wednesday, August 29, 2018	4:00	35	49	35	34
Wednesday, August 29, 2018	5:00	38	49	37	35
Wednesday, August 29, 2018	6:00	42	53	41	39
Wednesday, August 29, 2018	7:00	43	58	42	40
Wednesday, August 29, 2018	8:00	40	57	39	36
Wednesday, August 29, 2018	9:00	51	77	38	34
Wednesday, August 29, 2018	10:00	41	62	36	33
Wednesday, August 29, 2018	11:00	40	58	36	33

Statistics	Leq	Lmax	L50	L90
Day Average	44	61	37	34
Night Average	38	50	35	34
Day Low	36	48	35	32
Day High	51	77	42	40
Night Low	33	38	33	32
Night High	42	62	41	39
Ldn	45	Day %		87
CNEL	46	Night %		13



Appendix A-3 : Short Term Noise Monitoring Results

Site: ST-1
Project: 180804 The Ranch EIR
Location: West Boundary of Project Site
Coordinates: 35.5503027 -121.2238101°

Meter: LDL 831-1
Calibrator: B&K 4230

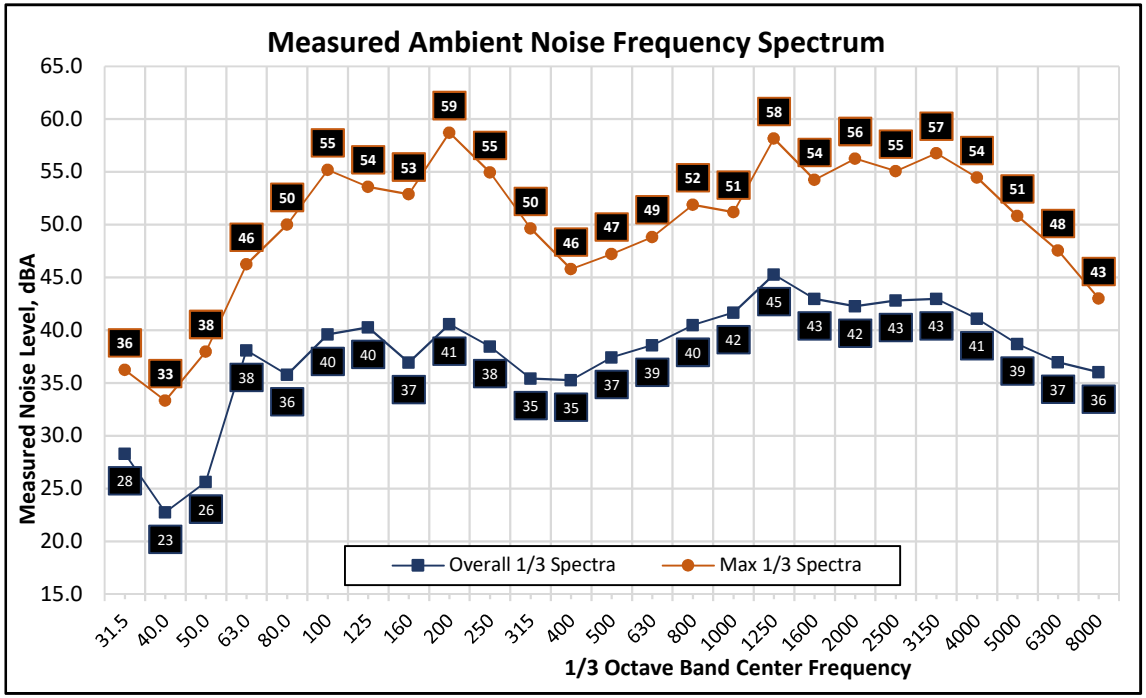
Start: 2018-08-28 10:58:47
Stop: 2018-08-28 11:08:47
SLM: Model 831
Serial: 1800

Measurement Results, dBA

Duration:	0:10
L_{eq}:	53
L_{max}:	64
L_{min}:	45
L_{50}:	49
L_{90}:	47

Notes

Construction at housing development to the west is the primary noise source. Nail gun, hammering, and heavy trucks idling contributed to ambient noise level, with impulsive noise sources measured at approximately 55 dB.



Appendix B: Traffic Noise Modeling Inputs and Results

Appendix B-1

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 180804
Description: The Ranch EIR - Existing Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset 60 dBA	65 dBA	70 dBA	Level, dBA
1	Jackson Rd	12,341	83	0	17	3.0%	1.0%	55	85	0	263	122	57	67.4
2	Jackson Rd	11,760	83	0	17	3.0%	1.0%	55	85	0	254	118	55	67.1
3	Jackson Rd	11,806	83	0	17	3.0%	1.0%	55	100	0	255	118	55	66.1
4	Jackson Rd	14,980	83	0	17	3.0%	1.0%	55	100	0	299	139	64	67.1
5	Excelsior Rd	4,552	83	0	17	3.0%	1.0%	55	135	0	135	63	29	60.0
6	Kiefer Blvd	941	83	0	17	3.0%	1.0%	55	100	0	47	22	10	55.1
7	International Dr	11,246	83	0	17	3.0%	1.0%	45	80	0	178	82	38	65.2
8	Mather Blvd	5,540	83	0	17	3.0%	1.0%	35	100	0	75	35	16	58.1
9	Douglas Rd	12,404	83	0	17	3.0%	1.0%	55	100	0	264	122	57	66.3
10	Douglas Rd	7,510	83	0	17	3.0%	1.0%	55	75	-5	189	88	41	61.0
11	White Rock Rd	15,943	83	0	17	3.0%	1.0%	45	100	0	224	104	48	65.3
12	White Rock Rd	3,533	83	0	17	3.0%	1.0%	55	100	0	114	53	25	60.9
13	White Rock Rd	15,436	83	0	17	3.0%	1.0%	55	100	0	305	142	66	67.3
14	Mather Field Rd	22,543	83	0	17	3.0%	1.0%	45	55	-5	282	131	61	65.7
15	Mather Field Rd	35,028	83	0	17	3.0%	1.0%	45	100	0	379	176	82	68.7
16	Mather Field Rd	42,228	83	0	17	3.0%	1.0%	45	100	0	429	199	92	69.5
17	Zinfandel Dr	22,380	83	0	17	3.0%	1.0%	35	140	-5	190	88	41	57.0
18	Zinfandel Dr	50,515	83	0	17	3.0%	1.0%	40	145	0	401	186	86	66.6
19	Zinfandel Dr	23,685	83	0	17	3.0%	1.0%	40	100	0	242	112	52	65.8
20	Zinfandel Dr	13,705	83	0	17	3.0%	1.0%	45	100	-5	203	94	44	59.6
21	Sunrise Blvd	67,276	83	0	17	3.0%	1.0%	45	140	-5	585	272	126	64.3
22	Sunrise Blvd	53,504	83	0	17	3.0%	1.0%	45	170	0	502	233	108	67.1
23	Sunrise Blvd	41,238	83	0	17	3.0%	1.0%	45	100	0	422	196	91	69.4
24	Sunrise Blvd	30,941	83	0	17	3.0%	1.0%	50	100	0	414	192	89	69.3
25	Sunrise Blvd	22,635	83	0	17	3.0%	1.0%	55	90	-5	394	183	85	64.6
26	Sunrise Blvd	11,748	83	0	17	3.0%	1.0%	55	90	0	254	118	55	66.8
27	Grant Line Rd	12,804	83	0	17	3.0%	1.0%	55	60	0	269	125	58	69.8
28	Grant Line Rd	8,524	83	0	17	3.0%	1.0%	55	100	0	205	95	44	64.7
29	Grant Line Rd	7,745	83	0	17	3.0%	1.0%	55	100	0	193	89	41	64.3

SAXELBY ACOUSTICS
Acoustics · Noise · Vibration

Appendix B-2

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 180804
Description: The Ranch EIR - Existing + Project Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset 60 dBA	65 dBA	70 dBA	Level, dBA
1	Jackson Rd	12,443	83	0	17	3.0%	1.0%	55	85	0	264	123	57	67.4
2	Jackson Rd	11,965	83	0	17	3.0%	1.0%	55	85	0	257	119	55	67.2
3	Jackson Rd	12,011	83	0	17	3.0%	1.0%	55	100	0	258	120	56	66.2
4	Jackson Rd	15,082	83	0	17	3.0%	1.0%	55	100	0	300	139	65	67.2
5	Excelsior Rd	4,552	83	0	17	3.0%	1.0%	55	135	0	135	63	29	60.0
6	Kiefer Blvd	941	83	0	17	3.0%	1.0%	55	100	0	47	22	10	55.1
7	International Dr	13,909	83	0	17	3.0%	1.0%	45	80	0	205	95	44	66.1
8	Mather Blvd	6,052	83	0	17	3.0%	1.0%	35	100	0	79	37	17	58.5
9	Douglas Rd	13,019	83	0	17	3.0%	1.0%	55	100	0	272	126	59	66.5
10	Douglas Rd	7,920	83	0	17	3.0%	1.0%	55	75	-5	196	91	42	61.2
11	White Rock Rd	16,148	83	0	17	3.0%	1.0%	45	100	0	226	105	49	65.3
12	White Rock Rd	3,635	83	0	17	3.0%	1.0%	55	100	0	116	54	25	61.0
13	White Rock Rd	15,743	83	0	17	3.0%	1.0%	55	100	0	309	143	67	67.4
14	Mather Field Rd	22,645	83	0	17	3.0%	1.0%	45	55	-5	283	131	61	65.7
15	Mather Field Rd	35,130	83	0	17	3.0%	1.0%	45	100	0	380	176	82	68.7
16	Mather Field Rd	42,433	83	0	17	3.0%	1.0%	45	100	0	430	200	93	69.5
17	Zinfandel Dr	22,687	83	0	17	3.0%	1.0%	35	140	-5	192	89	41	57.1
18	Zinfandel Dr	52,563	83	0	17	3.0%	1.0%	40	145	0	412	191	89	66.8
19	Zinfandel Dr	25,733	83	0	17	3.0%	1.0%	40	100	0	256	119	55	66.1
20	Zinfandel Dr	13,807	83	0	17	3.0%	1.0%	45	100	-5	204	95	44	59.6
21	Sunrise Blvd	70,041	83	0	17	3.0%	1.0%	45	140	-5	601	279	130	64.5
22	Sunrise Blvd	56,986	83	0	17	3.0%	1.0%	45	170	0	524	243	113	67.3
23	Sunrise Blvd	45,540	83	0	17	3.0%	1.0%	45	100	0	451	209	97	69.8
24	Sunrise Blvd	38,725	83	0	17	3.0%	1.0%	50	100	0	481	223	104	70.2
25	Sunrise Blvd	31,546	83	0	17	3.0%	1.0%	55	90	-5	491	228	106	66.1
26	Sunrise Blvd	12,567	83	0	17	3.0%	1.0%	55	90	0	266	123	57	67.1
27	Grant Line Rd	13,111	83	0	17	3.0%	1.0%	55	60	0	274	127	59	69.9
28	Grant Line Rd	8,524	83	0	17	3.0%	1.0%	55	100	0	205	95	44	64.7
29	Grant Line Rd	7,745	83	0	17	3.0%	1.0%	55	100	0	193	89	41	64.3

Appendix B-3

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 180804
Description: The Ranch EIR - Cumulative No Project Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset 60 dBA	65 dBA	70 dBA	Level, dBA
1	Jackson Rd	22,600	83	0	17	3.0%	1.0%	55	85	0	393	183	85	70.0
2	Jackson Rd	22,740	83	0	17	3.0%	1.0%	55	85	0	395	183	85	70.0
3	Jackson Rd	21,500	83	0	17	3.0%	1.0%	55	100	0	380	177	82	68.7
4	Jackson Rd	23,690	83	0	17	3.0%	1.0%	55	100	0	406	188	87	69.1
5	Excelsior Rd	8,950	83	0	17	3.0%	1.0%	55	135	0	212	98	46	62.9
6	Kiefer Blvd	2,180	83	0	17	3.0%	1.0%	55	100	0	83	38	18	58.8
7	International Dr	25,690	83	0	17	3.0%	1.0%	45	80	0	308	143	66	68.8
8	Mather Blvd	20,870	83	0	17	3.0%	1.0%	35	100	0	181	84	39	63.9
9	Douglas Rd	37,150	83	0	17	3.0%	1.0%	55	100	0	548	254	118	71.1
10	Douglas Rd	24,290	83	0	17	3.0%	1.0%	55	75	-5	413	192	89	66.1
11	White Rock Rd	27,540	83	0	17	3.0%	1.0%	45	100	0	323	150	70	67.6
12	White Rock Rd	16,960	83	0	17	3.0%	1.0%	55	100	0	325	151	70	67.7
13	White Rock Rd	41,330	83	0	17	3.0%	1.0%	55	100	0	588	273	127	71.5
14	Mather Field Rd	30,420	83	0	17	3.0%	1.0%	45	55	-5	345	160	74	67.0
15	Mather Field Rd	43,380	83	0	17	3.0%	1.0%	45	100	0	437	203	94	69.6
16	Mather Field Rd	56,560	83	0	17	3.0%	1.0%	45	100	0	521	242	112	70.8
17	Zinfandel Dr	23,730	83	0	17	3.0%	1.0%	35	140	-5	198	92	43	57.2
18	Zinfandel Dr	72,230	83	0	17	3.0%	1.0%	40	145	0	509	236	110	68.2
19	Zinfandel Dr	37,080	83	0	17	3.0%	1.0%	40	100	0	327	152	70	67.7
20	Zinfandel Dr	21,600	83	0	17	3.0%	1.0%	45	100	-5	274	127	59	61.6
21	Sunrise Blvd	71,160	83	0	17	3.0%	1.0%	45	140	-5	608	282	131	64.6
22	Sunrise Blvd	58,150	83	0	17	3.0%	1.0%	45	170	0	531	247	114	67.4
23	Sunrise Blvd	41,350	83	0	17	3.0%	1.0%	45	100	0	423	196	91	69.4
24	Sunrise Blvd	49,190	83	0	17	3.0%	1.0%	50	100	0	564	262	121	71.3
25	Sunrise Blvd	45,470	83	0	17	3.0%	1.0%	55	90	-5	627	291	135	67.6
26	Sunrise Blvd	20,170	83	0	17	3.0%	1.0%	55	90	0	365	169	79	69.1
27	Grant Line Rd	30,330	83	0	17	3.0%	1.0%	55	60	0	479	222	103	73.5
28	Grant Line Rd	29,380	83	0	17	3.0%	1.0%	55	100	0	468	217	101	70.1
29	Grant Line Rd	13,480	83	0	17	3.0%	1.0%	55	100	0	279	129	60	66.7

SAXELBY ACOUSTICS
Acoustics · Noise · Vibration

Appendix B-4

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 180804
Description: The Ranch EIR - Cumulative No Project Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset 60 dBA	65 dBA	70 dBA	Level, dBA
30	Kiefer Blvd	2,080	83	0	17	3.0%	1.0%	55	100	0	80	37	17	58.6
31	Kiefer Blvd	15,140	83	0	17	3.0%	1.0%	45	65	-5	217	101	47	62.8
32	Kiefer Blvd	7,790	83	0	17	3.0%	1.0%	45	100	0	139	65	30	62.1
33	Kiefer Blvd	4,170	83	0	17	3.0%	1.0%	45	100	0	92	43	20	59.4
34	Chrysanthy Blvd	5,740	83	0	17	3.0%	1.0%	40	80	-5	94	44	20	56.1
35	Chrysanthy Blvd	6,150	83	0	17	3.0%	1.0%	40	90	0	99	46	21	60.6
36	Chrysanthy Blvd	7,070	83	0	17	3.0%	1.0%	40	100	0	108	50	23	60.5
37	Rancho Cordova Pkwy	46,310	83	0	17	3.0%	1.0%	45	100	0	456	212	98	69.9
38	Rancho Cordova Pkwy	42,680	83	0	17	3.0%	1.0%	45	100	0	432	201	93	69.5
39	Rancho Cordova Pkwy	17,310	83	0	17	3.0%	1.0%	45	100	0	237	110	51	65.6
40	Rancho Cordova Pkwy	15,790	83	0	17	3.0%	1.0%	45	100	0	223	103	48	65.2
41	Rancho Cordova Pkwy	8,350	83	0	17	3.0%	1.0%	45	60	-5	146	68	31	60.8
42	Rancho Cordova Pkwy	7,190	83	0	17	3.0%	1.0%	50	100	0	156	73	34	62.9
43	Americanos Blvd	4,850	83	0	17	3.0%	1.0%	50	100	0	120	56	26	61.2
44	Americanos Blvd	1,970	83	0	17	3.0%	1.0%	50	100	0	66	31	14	57.3
45	Americanos Blvd	4,850	83	0	17	3.0%	1.0%	45	100	0	101	47	22	60.1
46	Americanos Blvd	2,800	83	0	17	3.0%	1.0%	45	100	0	70	33	15	57.7

SAXELBY ACOUSTICS
Acoustics · Noise · Vibration

Appendix B-5

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 180804
Description: The Ranch EIR - Cumulative + Project Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset 60 dBA	65 dBA	70 dBA	Level, dBA
1	Jackson Rd	22,702	83	0	17	3.0%	1.0%	55	85	0	394	183	85	70.0
2	Jackson Rd	22,945	83	0	17	3.0%	1.0%	55	85	0	397	184	86	70.0
3	Jackson Rd	21,705	83	0	17	3.0%	1.0%	55	100	0	383	178	82	68.7
4	Jackson Rd	23,690	83	0	17	3.0%	1.0%	55	100	0	406	188	87	69.1
5	Excelsior Rd	8,950	83	0	17	3.0%	1.0%	55	135	0	212	98	46	62.9
6	Kiefer Blvd	2,282	83	0	17	3.0%	1.0%	55	100	0	85	40	18	59.0
7	International Dr	25,997	83	0	17	3.0%	1.0%	45	80	0	311	144	67	68.8
8	Mather Blvd	22,406	83	0	17	3.0%	1.0%	35	100	0	190	88	41	64.2
9	Douglas Rd	39,915	83	0	17	3.0%	1.0%	55	100	0	575	267	124	71.4
10	Douglas Rd	28,694	83	0	17	3.0%	1.0%	55	75	-5	461	214	99	66.8
11	White Rock Rd	27,847	83	0	17	3.0%	1.0%	45	100	0	325	151	70	67.7
12	White Rock Rd	16,960	83	0	17	3.0%	1.0%	55	100	0	325	151	70	67.7
13	White Rock Rd	42,559	83	0	17	3.0%	1.0%	55	100	0	600	278	129	71.7
14	Mather Field Rd	30,522	83	0	17	3.0%	1.0%	45	55	-5	346	160	74	67.0
15	Mather Field Rd	44,199	83	0	17	3.0%	1.0%	45	100	0	442	205	95	69.7
16	Mather Field Rd	57,379	83	0	17	3.0%	1.0%	45	100	0	526	244	113	70.8
17	Zinfandel Dr	23,935	83	0	17	3.0%	1.0%	35	140	-5	199	92	43	57.3
18	Zinfandel Dr	73,152	83	0	17	3.0%	1.0%	40	145	0	514	238	111	68.2
19	Zinfandel Dr	38,002	83	0	17	3.0%	1.0%	40	100	0	332	154	72	67.8
20	Zinfandel Dr	22,829	83	0	17	3.0%	1.0%	45	100	-5	285	132	61	61.8
21	Sunrise Blvd	71,979	83	0	17	3.0%	1.0%	45	140	-5	612	284	132	64.6
22	Sunrise Blvd	58,969	83	0	17	3.0%	1.0%	45	170	0	536	249	115	67.5
23	Sunrise Blvd	42,374	83	0	17	3.0%	1.0%	45	100	0	430	200	93	69.5
24	Sunrise Blvd	51,955	83	0	17	3.0%	1.0%	50	100	0	585	271	126	71.5
25	Sunrise Blvd	46,085	83	0	17	3.0%	1.0%	55	90	-5	632	294	136	67.7
26	Sunrise Blvd	20,272	83	0	17	3.0%	1.0%	55	90	0	366	170	79	69.1
27	Grant Line Rd	31,559	83	0	17	3.0%	1.0%	55	60	0	491	228	106	73.7
28	Grant Line Rd	30,814	83	0	17	3.0%	1.0%	55	100	0	484	224	104	70.3
29	Grant Line Rd	13,890	83	0	17	3.0%	1.0%	55	100	0	284	132	61	66.8

SAXELBY ACOUSTICS
Acoustics · Noise · Vibration

Appendix B-6

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 180804
Description: The Ranch EIR - Cumulative + Project Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset 60 dBA	65 dBA	70 dBA	Level, dBA
30	Kiefer Blvd	2,080	83	0	17	3.0%	1.0%	55	100	0	80	37	17	58.6
31	Kiefer Blvd	15,140	83	0	17	3.0%	1.0%	45	65	-5	217	101	47	62.8
32	Kiefer Blvd	7,790	83	0	17	3.0%	1.0%	45	100	0	139	65	30	62.1
33	Kiefer Blvd	4,170	83	0	17	3.0%	1.0%	45	100	0	92	43	20	59.4
34	Chrysanthy Blvd	7,276	83	0	17	3.0%	1.0%	40	80	-5	110	51	24	57.1
35	Chrysanthy Blvd	14,651	83	0	17	3.0%	1.0%	40	90	0	176	82	38	64.4
36	Chrysanthy Blvd	8,606	83	0	17	3.0%	1.0%	40	100	0	123	57	27	61.4
37	Rancho Cordova Pkwy	47,437	83	0	17	3.0%	1.0%	45	100	0	464	215	100	70.0
38	Rancho Cordova Pkwy	44,114	83	0	17	3.0%	1.0%	45	100	0	442	205	95	69.7
39	Rancho Cordova Pkwy	19,154	83	0	17	3.0%	1.0%	45	100	0	253	118	55	66.1
40	Rancho Cordova Pkwy	22,140	83	0	17	3.0%	1.0%	45	100	0	279	129	60	66.7
41	Rancho Cordova Pkwy	8,965	83	0	17	3.0%	1.0%	45	60	-5	153	71	33	61.1
42	Rancho Cordova Pkwy	7,600	83	0	17	3.0%	1.0%	50	100	0	162	75	35	63.2
43	Americanos Blvd	4,850	83	0	17	3.0%	1.0%	50	100	0	120	56	26	61.2
44	Americanos Blvd	1,970	83	0	17	3.0%	1.0%	50	100	0	66	31	14	57.3
45	Americanos Blvd	5,055	83	0	17	3.0%	1.0%	45	100	0	104	48	22	60.3
46	Americanos Blvd	2,800	83	0	17	3.0%	1.0%	45	100	0	70	33	15	57.7

Appendix B-7
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Barrier Calculation: Data Input Sheet

Project #: 180804
Description The Ranch EIR
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Level, dBA
1	Chrysanthy Blvd	Rancho Cordova Pkwy to Americanos Blvd - 1st Flr.	14,651	83	17	3	1	40	90		64
2	Chrysanthy Blvd	Rancho Cordova Pkwy to Americanos Blvd - 2nd Flr.	14,651	83	17	3	1	40	90	3	67
3	Rancho Cordova Pkwy	Douglas Rd to Chrysanthy Blvd - 1st Flr.	22,140	83	17	3	1	45	100		66
4	Rancho Cordova Pkwy	Douglas Rd to Chrysanthy Blvd - 2nd Flr.	22,140	83	17	3	1	45	100	3	69
5	Rancho Cordova Pkwy	Chrysanthy Blvd to Keifer Blvd - 1st Flr.	8,965	83	17	3	1	45	525		52
6	Rancho Cordova Pkwy	Chrysanthy Blvd to Keifer Blvd - 2nd Flr.	8,965	83	17	3	1	45	525	3	55

SAXELBY ACOUSTICS
Acoustics · Noise · Vibration

Appendix B-8
FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 180804
Description The Ranch EIR
Roadway Name: Chrysanthy Blvd
Location(s): 1

Noise Level Data:

Year: 2019
Auto L_{dn}, dB: 63
Medium Truck L_{dn}, dB: 57
Heavy Truck L_{dn}, dB: 54

Site Geometry:

Receiver Description: Rancho Cordova Pkwy to Americanos Blvd - 1st Flr.
Centerline to Barrier Distance (C_1): 35
Barrier to Receiver Distance (C_2): 25
Automobile Elevation: 2
Medium Truck Elevation: 4
Heavy Truck Elevation: 10
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

		---------- L_{dn}, dB ----------				Barrier Breaks Line of Sight to…		
Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
6	6	56	51	49	58	Yes	Yes	No
7	7	55	50	49	57	Yes	Yes	No
8	8	54	49	48	56	Yes	Yes	Yes
9	9	53	47	47	55	Yes	Yes	Yes
10	10	52	46	46	54	Yes	Yes	Yes
11	11	51	46	45	53	Yes	Yes	Yes
12	12	50	45	44	52	Yes	Yes	Yes
13	13	49	44	43	51	Yes	Yes	Yes
14	14	49	43	42	50	Yes	Yes	Yes

Notes: [1] Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s).

Appendix B-9
FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 180804
Description The Ranch EIR
Roadway Name: Rancho Cordova Pkwy
Location(s): 3

Noise Level Data:

Year: 2019
Auto L_{dn}, dB: 65
Medium Truck L_{dn}, dB: 58
Heavy Truck L_{dn}, dB: 55

Site Geometry:

Receiver Description: Douglas Rd to Chrysanthy Blvd - 1st Flr.
Centerline to Barrier Distance (C_1): 60
Barrier to Receiver Distance (C_2): 40
Automobile Elevation: 2
Medium Truck Elevation: 4
Heavy Truck Elevation: 10
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

		---------- L_{dn}, dB ----------				Barrier Breaks Line of Sight to…		
Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
6	6	59	53	51	61	Yes	Yes	No
7	7	58	52	50	60	Yes	Yes	No
8	8	58	52	50	59	Yes	Yes	Yes
9	9	57	51	49	58	Yes	Yes	Yes
10	10	56	50	48	57	Yes	Yes	Yes
11	11	55	49	48	56	Yes	Yes	Yes
12	12	54	48	47	56	Yes	Yes	Yes
13	13	54	47	46	55	Yes	Yes	Yes
14	14	53	47	45	54	Yes	Yes	Yes

Notes: [1] Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s).

Appendix B-10
FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 180804
Description The Ranch EIR
Roadway Name: Rancho Cordova Pkwy
Location(s): 5

Noise Level Data:

Year: 2019
Auto L_{dn}, dB: 51
Medium Truck L_{dn}, dB: 44
Heavy Truck L_{dn}, dB: 40

Site Geometry:

Receiver Description: Chrysanthy Blvd to Keifer Blvd - 1st Flr.
Centerline to Barrier Distance (C_1): 45
Barrier to Receiver Distance (C_2): 480
Automobile Elevation: 2
Medium Truck Elevation: 4
Heavy Truck Elevation: 10
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

		L_{dn}, dB				Barrier Breaks Line of Sight to…		
Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
6	6	44	38	38	46	Yes	Yes	No
7	7	43	38	36	45	Yes	Yes	No
8	8	43	37	36	44	Yes	Yes	No
9	9	42	36	35	44	Yes	Yes	No
10	10	41	36	35	43	Yes	Yes	Yes
11	11	41	35	35	43	Yes	Yes	Yes
12	12	40	34	35	42	Yes	Yes	Yes
13	13	40	34	34	41	Yes	Yes	Yes
14	14	39	33	33	41	Yes	Yes	Yes

Notes: [1] Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s).

APPENDIX I

Transportation Appendices

CONTENTS

Appendix I.1: Traffic Impact Analysis

Appendix I.2: Memorandum RE: Jaeger Ranch Traffic Impact Study, Draft Other Considerations

Appendix I.3: Memorandum RE: Jaeger Ranch Supplemental Traffic Analyses, Draft Traffic Impact Analysis Services

Appendix I.4: Memorandum RE: Jaeger Ranch Supplemental Traffic Analyses, Draft Trip Generation Memorandum

APPENDIX I.1

Traffic Impact Analysis

Traffic Impact Analysis

Jaeger Ranch
City of Rancho Cordova, California

DRAFT
August 28, 2018

Prepared for:

K. Hovnanian® Homes of California, Inc.

Prepared by:
Kimley»Horn

555 Capitol Mall, Suite 300
Sacramento, California 95814

Phone: (916) 858-5800

EXECUTIVE SUMMARY

This report documents the results of a traffic impact analysis completed for Jaeger Ranch project (the "proposed project" or "project"). The vacant project site is located along Rancho Cordova Parkway/Jaeger Road, south of Douglas Road in Rancho Cordova, California. This study was performed in accordance with the County of Sacramento's traffic study guidelines and standards established by the Circulation Element of the City of Rancho Cordova's General Plan.

The proposed project will include 666 single-family detached residential units, 120 multi-family residential units, 637 Active Adult Residential (AAR) units, and approximately 46,000 square-feet of commercial uses. Access to the project site will be provided by Chrysanthy Boulevard, which, as a part of the project, will be extended from Rancho Cordova Parkway/Jaeger Road to the eastern extent of the project. The project is not expected to construct Chrysanthy Boulevard to its eventual connection with Grant Line Road. Chrysanthy Boulevard extends through the project and serves as a primary internal facility. Rancho Cordova Parkway provides additional access to the site, from south of Chrysanthy Boulevard. The project is conditioned to widen Rancho Cordova Parkway along the project extents from two (2) to four (4) lanes. In addition, the project will construct a pedestrian tunnel crossing along Chrysanthy Boulevard within the project site, two (2) pedestrian push button crossing within the project site, and one (1) pedestrian push button crossing along Rancho Cordova Parkway adjacent to the project.

This analysis includes evaluation of the following transportation facilities:

- 40 Intersections (13 for Cumulative Conditions only)
  - 31 within Rancho Cordova (13 for Cumulative Conditions only)
  - 9 within Sacramento County's jurisdiction
- 46 Roadway Segments (17 for Cumulative Conditions only)
  - 38 within Rancho Cordova (16 for Cumulative Conditions only)
  - 8 within Sacramento County's jurisdiction (1 for Cumulative Conditions only)

Based on the County's requirements, this traffic impact analysis was conducted for the study facilities for the following scenarios:

A. Existing (2017) Conditions
B. Existing (2017) plus Proposed Project Conditions
C. Cumulative (2040) Conditions
D. Cumulative (2040) plus Proposed Project Conditions

Significant findings of this study include:

- The proposed project is estimated to generate 10,266 new daily trips, with 721 new trips occurring during the AM peak-hour, and 934 new trips occurring during the PM peak-hour.
- The addition of the proposed project to the Existing (2017) Conditions results in a significant impact at four (4) study intersections and one (1) roadway segment. With the application of mitigation measures recommended herein, the impacts to intersections can be mitigated to be *less than significant*. The proposed project results in one significant impact to the roadway segments for Existing (2017) Conditions, as defined by the City of Rancho Cordova. This roadway segment is already built to its final extents per the City's General Plan.
- The addition of the proposed project to Cumulative (2040) Conditions results in a significant impact at three (3) intersections. Two of the impacts to intersections would be mitigated to less than significant. One location does not have a feasible mitigation. The proposed project results in a significant impact at two (2) roadway segments for Cumulative (2040) Conditions.

TABLE OF CONTENTS

INTRODUCTION **1**

PROJECT DESCRIPTION **1**

PROJECT AREA ROADWAYS **7**

TRANSPORTATION IMPACT STUDY METHODOLOGY **7**
Level of Service Definitions 7
Roadway Segment Analysis 8

EXISTING (2017) CONDTIONS **9**

ASSESSMENT OF PROPOSED PROJECT **12**
Proposed Project Trip Generation and Assignment 12

EXISTING (2017) PLUS PROPOSED PROJECT CONDTIONS **15**

CUMULATIVE CONDITIONS **19**

CUMULATIVE PLUS PROPOSED PROJECT CONDITIONS **27**

IMPACTS AND MITIGATION **36**
Regulatory Setting and Thresholds of Significance 36
Impacts and Mitigation 37

CONCLUSIONS **41**

APPENDICES
Traffic Count Data Sheets ..... *Appendix A*
Analysis Worksheets for Existing (2017) Conditions ..... *Appendix B*
Analysis Worksheets for Existing (2017) plus Proposed Project Conditions ..... *Appendix C*
Analysis Worksheets for Cumulative Conditions ..... *Appendix D*
Analysis Worksheets for Cumulative plus Proposed Project Conditions ..... *Appendix E*
Analysis Worksheets for Mitigated Conditions ..... *Appendix F*
Analysis Worksheets for Signal Warrants ..... *Appendix G*

LIST OF TABLES

Table 1 – Intersection Level of Service Criteria 8
Table 2 – Roadway Segment Level of Service Criteria 8
Table 3 – Existing (2017) Intersection Levels of Service 9
Table 4 – Existing (2017) Segment Level of Service 10
Table 5 – Proposed Project Trip Generation 12
Table 6 – Existing (2017) plus Proposed Project Intersection Levels of Service 16
Table 7- Existing (2017) Plus Project Segment Levels of Service 17
Table 8 – Cumulative (2040) Intersection Levels of Service 20
Table 9 – Cumulative (2040) Roadway Segment Level of Service 21
Table 10 – Cumulative plus Proposed Project Intersection Levels of Service 28
Table 11 – Intersection Levels of Service – Existing (2017) plus Proposed Project Mitigated Conditions 39
Table 12 – Intersection Levels of Service – Cumulative plus Proposed Project Mitigated Conditions 40

LIST OF FIGURES

Figure 1 – Project Site Vicinity Map 4
Figure 2 – Proposed Project Site Plan 5
Figure 3 – Existing Study Intersections, Traffic Control, Lane Geometries, ... 6
Figure 4 – Existing (2017) Peak-Hour Traffic Volumes 11
Figure 5 – Proposed Project Trip Distribution 13
Figure 6 – Proposed Project Trip Assignment 14
Figure 7 – Existing (2017) plus Proposed Project Peak-Hour Traffic Volumes 18
Figure 8 – Cumulative (2040) Study Facilities 22
Figure 9 – Cumulative (2040) Study Intersections, Traffic Control, and Lane Geometries 23
Figure 10 – Cumulative (2040) Peak-Hour Traffic Volumes 25
Figure 11 – Cumulative (2040) Project Trip Distribution 31
Figure 12– Cumulative (2040) Project Trip Assignment 32
Figure 13 – Cumulative (2040) plus Proposed Project Peak-Hour Traffic Volumes 34

INTRODUCTION

This report documents the results of a traffic impact analysis completed for Jaeger Ranch residential project (the "proposed project" or "project"). The vacant project site is located along Rancho Cordova Parkway/Jaeger Road, south of Douglas Road in Rancho Cordova, California. The purpose of this impact analysis is to identify potential environmental impacts to transportation facilities as required by the California Environmental Quality Act (CEQA). This study was performed in accordance with the County of Sacramento's traffic study guidelines[1] and standards established by the Circulation Element of the City of Rancho Cordova's General Plan [2].

PROJECT DESCRIPTION

The proposed project will include 666 single-family detached residential units, 120 multi-family residential units, 637 Active Adult Residential (AAR) units, and approximately 46,000 square feet of commercial uses. Primary access to the project site will be provided by Chrysanthy Boulevard, which will be extended from Rancho Cordova Parkway/Jaeger Road to the eastern extent of the project. Chrysanthy Boulevard extends through the project and serves as a primary external access roadway. The project is not expected to construct Chrysanthy Boulevard to its eventual connection with Grant Line Road.

Rancho Cordova Parkway provides additional access to the site, from south of Chrysanthy Boulevard. The project is conditioned to widen Rancho Cordova Parkway along the project extents from two (2) to four (4) lanes. Rancho Cordova parkway currently is unpaved north of Chrysanthy Boulevard, but is expected to be constructed to City standards in the future. In addition, the project will construct a pedestrian tunnel crossing along Chrysanthy Boulevard within the project site, two (2) pedestrian push button crossing within the project site, and one (1) pedestrian push button crossing along Rancho Cordova Parkway adjacent to the project. The project location, study intersections and study segments are depicted in **Figure 1.** The proposed project site plan is shown in **Figure 2**. **Figure 3** illustrates the existing study intersections facilities, traffic control, and lane configurations.

Based on the County's requirements, this traffic impact analysis was conducted for the study facilities for the following scenarios:

A. Existing (2017) Conditions
B. Existing (2017) plus Proposed Project Conditions
C. Cumulative (2040) Conditions
D. Cumulative (2040) plus Proposed Project Conditions

The following transportation facilities are included in this evaluation, including the additional study facilities for the Cumulative (2040) scenario:

Existing (2017) Intersections:

1. Jackson Rd/SR-16 @ Bradshaw Rd
2. Jackson Rd/SR-16 @ Excelsior Rd
3. Jackson Rd/SR-16 @ Eagles Nest Rd
4. Jackson Rd/SR-16 @ Sunrise Blvd
5. Jackson Rd/SR-16 @ Grant Line Rd
6. Rancho Cordova Pkwy @ Chrysanthy Blvd
7. Florin Rd @ Sunrise Blvd
8. Grant Line Rd @ Kiefer Blvd
9. Grant Line Rd @ Sunrise Blvd

[1] *Traffic Impact Analysis Guidelines, July 2004*, County of Sacramento.
[2] *City of Rancho Cordova General Plan: Circulation Element, May 2015,* City of Rancho Cordova

10. Douglas Rd @ Zinfandel Dr
11. Douglas Rd @ Sunrise Blvd
12. Douglas Rd @ Grant Line Rd
13. Mather Field Rd @ Folsom Blvd
14. Mather Field Rd @ US-50 Westbound Ramps
15. Mather Field Rd @ US-50 Eastbound Ramps
16. Mather Field Rd @ International Dr
17. Zinfandel Dr @ International Dr
18. Zinfandel Dr @ White Rock Rd
19. Zinfandel Dr @ US-50 Eastbound Ramps
20. Zinfandel Dr @ US-50 Westbound Ramps
21. Sunrise Blvd @ White Rock Rd
22. Sunrise Blvd @ Folsom Blvd
23. Sunrise Blvd @ US-50 Eastbound Ramps
24. Sunrise Blvd @ US-50 Westbound Ramps
25. Sunrise Blvd @ Zinfandel Dr
26. White Rock Rd @ Grant Line Rd
27. White Rock Rd @ Prairie City Rd

Additional Cumulative (2040) Intersections

28. Rancho Cordova Pkwy @ Folsom Blvd
29. Rancho Cordova Pkwy @ White Rock Rd
30. Rancho Cordova Pkwy @ Rio Del Oro Pkwy
31. Rancho Cordova Pkwy @ Douglas Rd
32. Rancho Cordova Pkwy @ Kiefer Blvd
33. Rancho Cordova Pkwy @ Grant Line Rd
34. Americanos Blvd @ International Dr
35. Americanos Blvd @ Centennial Dr
36. Americanos Blvd @ Douglas Rd
37. Americanos Blvd @ Chrysanthy Blvd
38. Americanos Blvd @ Kiefer Blvd
39. Chrysanthy Blvd @ Sunrise Blvd
40. Chrysanthy Blvd @ Grant Line Rd

Roadway Segments

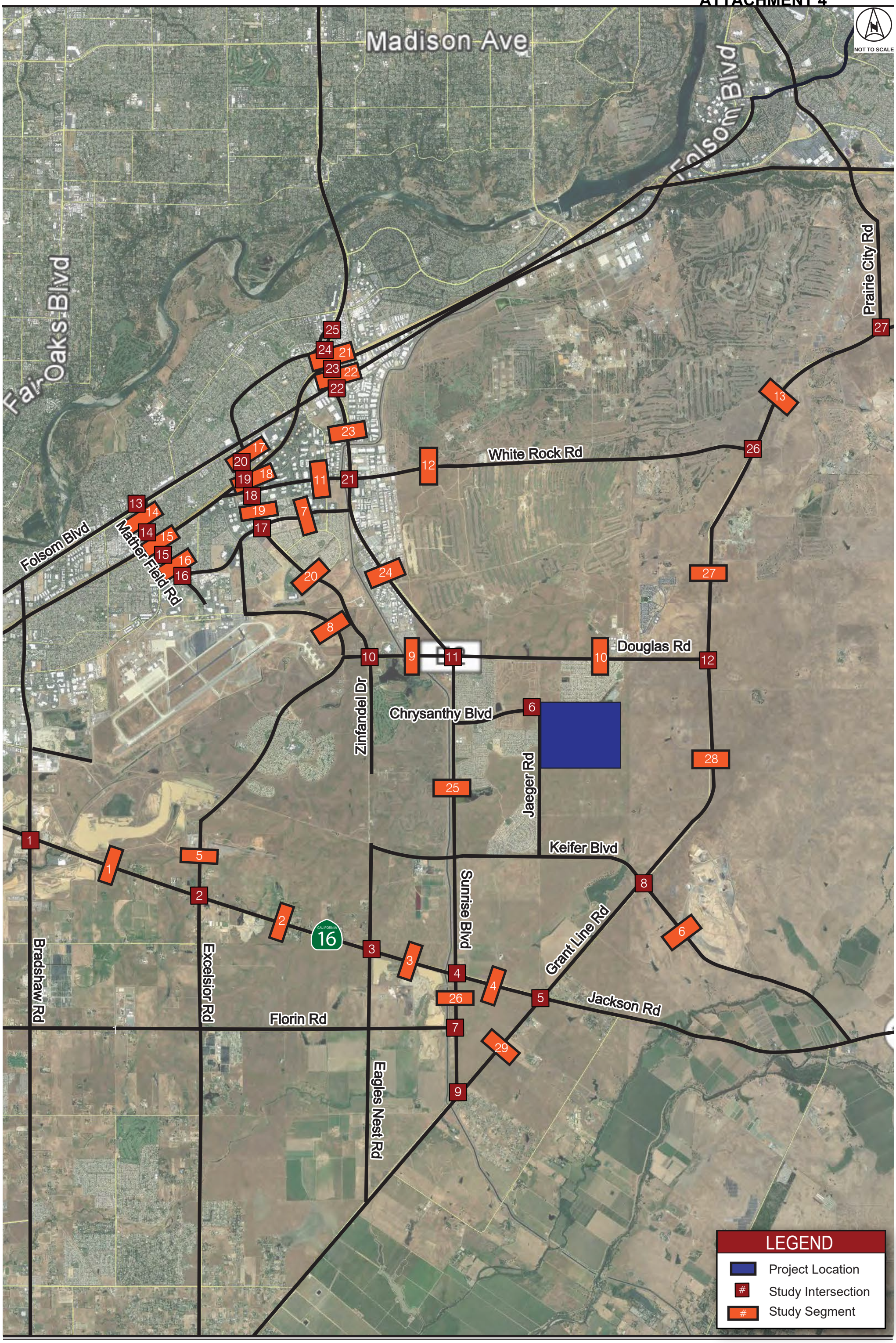
1. Jackson Rd/SR-16 between Bradshaw Rd and Excelsior Rd
2. Jackson Rd/SR-16 between Excelsior Rd and Eagles Nest Rd
3. Jackson Rd/SR-16 between Eagles Net Rd and Sunrise Blvd
4. Jackson Rd/SR-16 between Sunrise Blvd and Grant Line Rd
5. Excelsior Rd between Jackson Rd/SR-16 and Kiefer Blvd
6. Kiefer Blvd between Grant Line Rd and Jackson Rd/SR-16
7. International Dr between Zinfandel Dr and Sunrise Blvd
8. Mather Blvd between Femoyer St and Douglas Rd
9. Douglas Rd between Mather Blvd and Sunrise Blvd
10. Douglas Rd between Sunrise Blvd and Grant Line Rd
11. White Rock Rd between Zinfandel Dr and Sunrise Blvd
12. White Rock Rd between Sunrise Blvd and Grant Line Rd
13. White Rock Rd between Grant Line Rd and Prairie City Rd
14. Mather Field Rd between Folsom Blvd and US-50 Westbound Ramps
15. Mather Field Rd between US-50 Westbound Ramps and US-50 Eastbound Ramps

16. Mather Field Rd between US-50 Eastbound Ramps and International Dr
17. Zinfandel Dr between Folsom Blvd and US-50 Westbound Ramps
18. Zinfandel Dr between US-50 Eastbound Ramps and White Rock Rd
19. Zinfandel Dr between White Rock Rd and International Dr
20. Zinfandel Dr between International Dr and Douglas Rd
21. Sunrise Blvd between US-50 Westbound Ramps and US-50 Eastbound Ramps
22. Sunrise Blvd between US-50 Eastbound Ramps to Folsom Blvd
23. Sunrise Blvd between Folsom Blvd and White Rock Rd
24. Sunrise Blvd between White Rock Rd and Douglas Rd
25. Sunrise Blvd between Douglas Rd and Jackson Rd/SR-16
26. Sunrise Blvd between Jackson Rd/SR-16 and Grant Line Rd
27. Grant Line Rd between White Rock Rd and Douglas Rd
28. Grant Line Rd between Douglas Rd and Jackson Rd/SR-16
29. Grant Line Rd between Jackson Rd/SR-16 and Sunrise Blvd

Additional Cumulative (2040) Roadway Segments

30. Kiefer Blvd between Eagles Nest Rd and Sunrise Blvd
31. Kiefer Blvd between Sunrise Blvd and Rancho Cordova Pkwy
32. Kiefer Blvd between Rancho Cordova Blvd and Americanos Blvd
33. Kiefer Blvd between Americanos Blvd and Grant Line Rd
34. Chrysanthy Blvd between Sunrise Blvd and Rancho Cordova Pkwy
35. Chrysanthy Blvd between Rancho Cordova Pkwy and Americanos Blvd (Within Project)
36. Chrysanthy Blvd between Americanos Blvd and Grant Line Rd
37. Rancho Cordova Pkwy between Folsom Blvd and White Rock Rd
38. Rancho Cordova Pkwy between White Rock Rd and Rio Del Oro Pkwy
39. Rancho Cordova Pkwy between Rio Del Oro Pkwy and Douglas Rd
40. Rancho Cordova Pkwy between Douglas Rd and Chrysanthy Blvd
41. Rancho Cordova Pkwy between Chrysanthy Blvd and Kiefer Blvd
42. Rancho Cordova Pkwy between Kiefer Blvd and Grant Line Rd
43. Americanos Blvd between International Dr and Centennial Dr
44. Americanos Blvd between Centennial Dr and Douglas Rd
45. Americanos Blvd between Douglas Rd and Chrysanthy Blvd
46. Americanos Blvd between Chrysanthy Blvd and Kiefer Blvd

ATTACHMENT 4



Kimley»Horn

Figure 1
Existing (2017) Project Vicinity Map

Jaeger Ranch Illustrative Site Plan

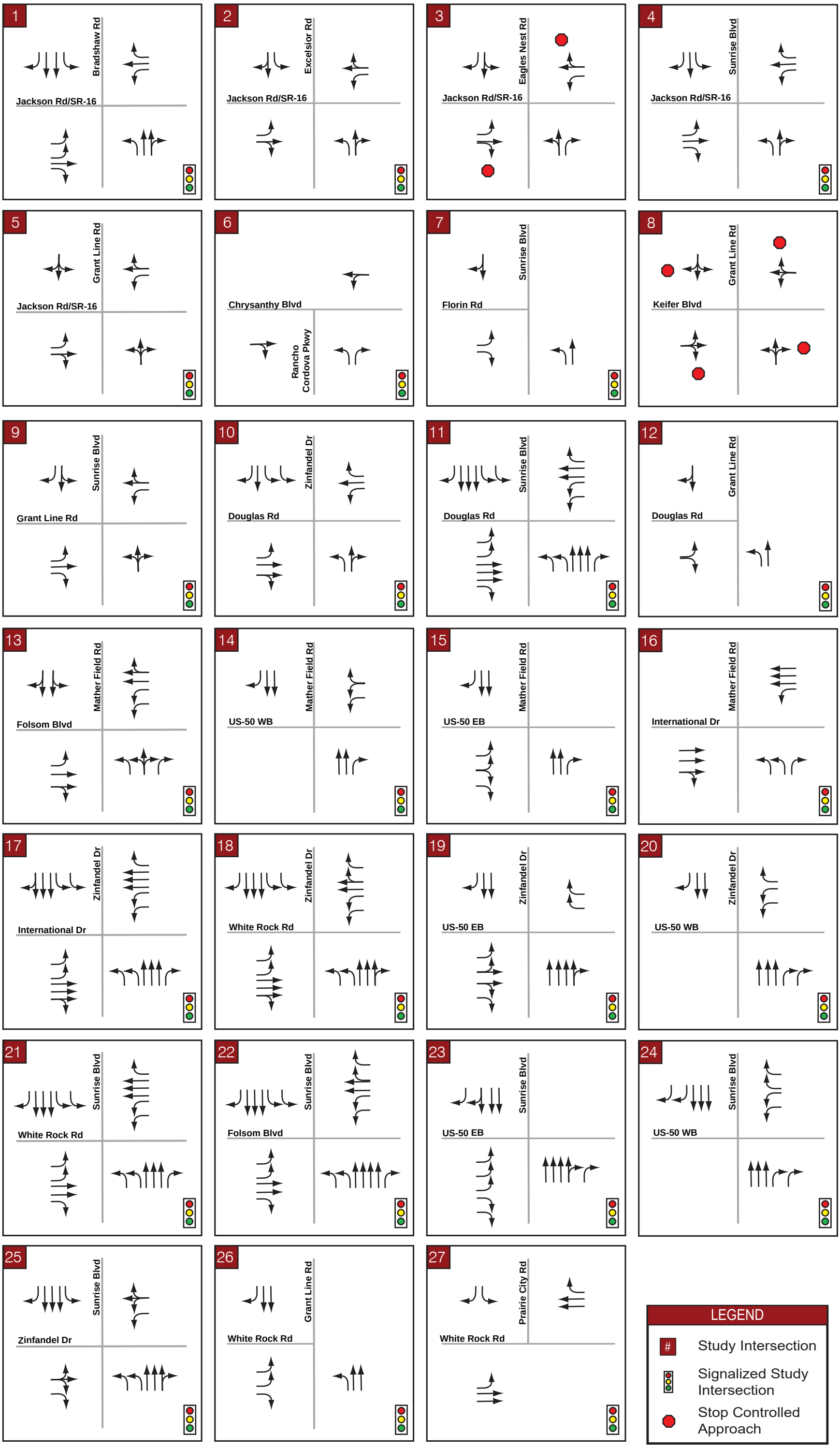
City of Rancho Cordova, California

August 16, 2017

Kimley»Horn

Figure 2

Proposed Project Site Plan



Kimley»Horn

Figure 3

Existing (2017) Study Intersections, Traffic Control, and Lane Geometries

PROJECT AREA ROADWAYS

The following are descriptions of the primary roadways in the vicinity of the project.

United States Route 50 (US-50) is an east-west interstate facility located approximately 5-miles from the proposed project. US-50 connects Rancho Cordova to Sacramento to the west and El Dorado County to the east. Primary access to the project site from US-50 is provided at the Sunrise Boulevard, Zinfandel Drive and Mather Field Road interchanges. Near Zinfandel Drive, US-50 carries approximately 170,000 vehicles per day[3] with five lanes in each direction.

Jackson Road (SR 16) is an expressway connecting Amador County and Sacramento County, along the southern edge of Rancho Cordova's city limits. Jackson Road connects with US 50 west of the project site. South of the project site, between Sunrise Boulevard and Grant Line Road, Jackson Road carries approximately 13,000 vehicles per day.

Sunrise Boulevard is a north-south arterial, connecting the project site to north Rancho Cordova and Placer County.

Zinfandel Drive is a north-south arterial, connecting the project site to US-50, as well as the commercial, industrial and residential areas northwest of the project site.

Chrysanthy Boulevard is a local roadway adjacent to, and through the project site. The addition of the proposed project is understood to construct the segment of Chrysanthy Boulevard from Rancho Cordova Parkway/Jaeger Road to the eastern extent of the project site. Traffic lights will be constructed at intersections within the project as deemed necessary. The project is not conditioned to construct Chrysanthy Boulevard to its eventual connection with Grant Line Road.

Rancho Cordova Parkway/Jaeger Road is a local roadway adjacent to the western edge of the project site. The project is conditioned to widen Rancho Cordova Parkway along the project extents from two (2) to four (4) lanes.

TRANSPORTATION IMPACT STUDY METHODOLOGY

This study was performed in accordance with the County of Sacramento's traffic study guidelines[4] and standards established by the Circulation Element of the City of Rancho Cordova's General Plan [5].

Level of Service Definitions

Analysis of transportation facility significant environmental impacts is based on the concept of Level of Service (LOS). The LOS of a facility is a qualitative measure used to describe operational conditions. LOS ranges from A (best), which represents minimal delay, to F (worst), which represents heavy delay and a facility that is operating at or near its functional capacity.

Intersection Analysis

Levels of Service for this study were determined using methods defined in the *Highway Capacity Manual (HCM) 2010* and appropriate traffic analysis software. The HCM includes procedures for analyzing side-street stop controlled (SSSC), all-way stop controlled (AWSC), and signalized intersections. The SSSC procedure defines LOS as a function of average control delay for each minor street approach movement. The AWSC and signalized intersection procedure defines LOS as a function of average control delay for the intersection as a whole. Table 1 presents intersection LOS definitions as defined in the HCM.

[3] Caltrans Traffic Counts, 2015. http://www.dot.ca.gov/trafficops/census/
[4] *Traffic Impact Analysis Guidelines, July 2004*, County of Sacramento.
[5] *City of Rancho Cordova General Plan: Circulation Element, May 2015,* City of Rancho Cordova

Table 1 – Intersection Level of Service Criteria

Level of Service (LOS)	Unsignalized	Signalized
	Average Control Delay* (sec/veh)	Average Control Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 – 15	> 10 – 20
C	> 15 – 25	> 20 – 35
D	> 25 – 35	> 35 – 55
E	> 35 – 50	> 55 – 80
F	> 50	> 80

Source: Highway Capacity Manual, 2010
* Applied to the worst lane/lane group(s) for SSSC

Roadway Segment Analysis

The analysis of roadway segments involves the comparison of daily segment volumes to the LOS criteria provided in the County's traffic impact analysis guidelines[1]. The criteria provide maximum volumes for given service levels for various facility types. Table 2 replicates the County's roadway segment LOS criteria.

Table 2 – Roadway Segment Level of Service Criteria

Facility Type	# Lanes	Maximum Volume for Given Service Level				
		A	B	C	D	E
Residential	2	600	1,200	2,000	3,000	4,500
Residential Collector w/ Frontage	2	1,600	3,200	4,800	6,400	8,000
Residential Collector w/o Frontage	2	6,000	7,000	8,000	9,000	10,000
Arterial, Low Access Control	2	9,000	10,500	12,000	13,500	15,000
	4	18,000	21,000	24,000	27,000	30,000
	6	27,000	31,500	36,000	40,500	45,000
Arterial, Moderate Access Control	2	10,800	12,600	14,400	16,200	18,000
	4	21,600	25,200	28,800	32,400	36,000
	6	32,400	37,800	43,200	48,600	54,000
Arterial, High Access Control	2	12,000	14,000	16,000	18,000	20,000
	4	24,000	28,000	32,000	36,000	40,000
	6	36,000	42,000	48,000	54,000	60,000
Rural, 2-lane highway	2	2,400	4,800	7,900	13,500	22,900
Rural, 2-lane road, 24'-36' of pavement, paved shoulders	2	2,200	4,300	7,100	12,200	20,000
Rural, 2-lane road, 24'-36' of pavement, no shoulders	2	1,800	3,600	5,900	10,100	17,000

Source: Traffic Impact Analysis Guidelines, Table 2, County of Sacramento Department of Transportation, July 2004.

Based on the County's requirements[4], this LOS analysis was conducted for the study facilities for the following scenarios:

A. Existing (2017) Conditions
B. Existing (2017) plus Proposed Project Conditions
C. Cumulative (2040) Conditions
D. Cumulative (2040) plus Proposed Project Conditions

The following sections present the technical analysis results for the four primary scenarios.

EXISTING (2017) CONDTIONS

To establish existing conditions, new traffic counts were collected for the study intersections and roadway segments. Twenty-seven (27) new weekday AM (7-9 a.m.) and PM (4-6 p.m.) peak-period intersection turning movement traffic counts were collected on September 28, 2017. Twenty-nine (29) new roadway segment counts were conducted on September 28, 2017.

Existing (2017) peak-hour turn movement volumes are presented in Figure 4, and the traffic count data sheets are provided in Appendix A. Analysis worksheets for this scenario are provided in Appendix B.

Intersections

Table 3 presents the peak-hour intersection operating conditions for this analysis scenario. As indicated in Table 3, the study intersections operate from LOS A to LOS F during the AM and PM peak-hours.

Table 3 – Existing (2017) Intersection Levels of Service

#	Intersection	Traffic Control	Existing			
			AM Peak Hour		PM Peak Hour	
			Delay (Seconds)	LOS	Delay (Seconds)	LOS
1	Jackson Rd/SR-16 @ Bradshaw Rd	Signal	**122.2**	**F**	**79.1**	**F**
2	Jackson Rd/SR-16 @ Excelsior Rd	Signal	74.1	E	51.8	D
3	Jackson Rd/SR-16 @ Eagles Nest Rd	SSSC	**17.2 (89.1 NB)**	**F**	**20.1 (253.1 NB)**	**F**
4	Jackson Rd/SR-16 @ Sunrise Rd	Signal	66.0	E	44.3	D
5	Jackson Rd/SR-16 @ Grant Line Rd	Signal	**113.8**	**F**	**136.4**	**F**
6	Rancho Cordova Pkwy @ Chrysanthy Blvd	Signal	Does Not Exist			
7	Florin Rd @ Sunrise Blvd	Signal	9.5	A	10.6	B
8	Grant Line Rd @ Kiefer Blvd	AWSC	15.2	C	27.2	D
9	Grant Line Rd @ Sunrise Blvd	Signal	**113.1**	**F**	52.1	D
10	Douglas Rd @ Zinfandel Dr	Signal	44.3	D	19.1	B
11	Douglas Rd @ Sunrise Blvd	Signal	28.4	C	41.5	D
12	Douglas Rd @ Grant Line Rd	Signal	12.0	B	15.6	B
13	Mather Field Rd @ Folsom Blvd	Signal	27.5	C	51.7	D
14	Mather Field Rd @ US-50 Westbound Ramps	Signal	**142.9**	**F**	22.1	C
15	Mather Field Rd @ US-50 Eastbound Ramps	Signal	53.5	D	24.3	C
16	Mather Field Rd @ International Dr	Signal	10.9	B	23.9	C
17	Zinfandel Dr @ International Dr	Signal	22.4	C	32.9	C
18	Zinfandel Dr @ White Rock Rd	Signal	33.4	C	39.1	D
19	Zinfandel Dr @ US-50 Eastbound Ramps	Signal	**85.1**	**F**	23.2	C
20	Zinfandel Dr @ US-50 Westbound Ramps	Signal	29.7	C	18.1	B
21	Sunrise Blvd @ White Rock Rd	Signal	35.7	D	**56.5**	**E**
22	Sunrise Blvd @ Folsom Blvd	Signal	36.6	D	41.5	D
23	Sunrise Blvd @ US-50 Eastbound Ramps	Signal	23.9	C	23.0	C
24	Sunrise Blvd @ US-50 Westbound Ramps	Signal	15.3	B	17.8	B
25	Sunrise Blvd @ Zinfandel Dr	Signal	**112.8**	**F**	**58.6**	**E**
26	White Rock Rd @ Grant Line Rd	Signal	6.1	A	13.4	B
27	White Rock Rd @ Prairie City Rd	Signal	61.5	E	59.4	E

Note: **Bold** represents unacceptable operations.

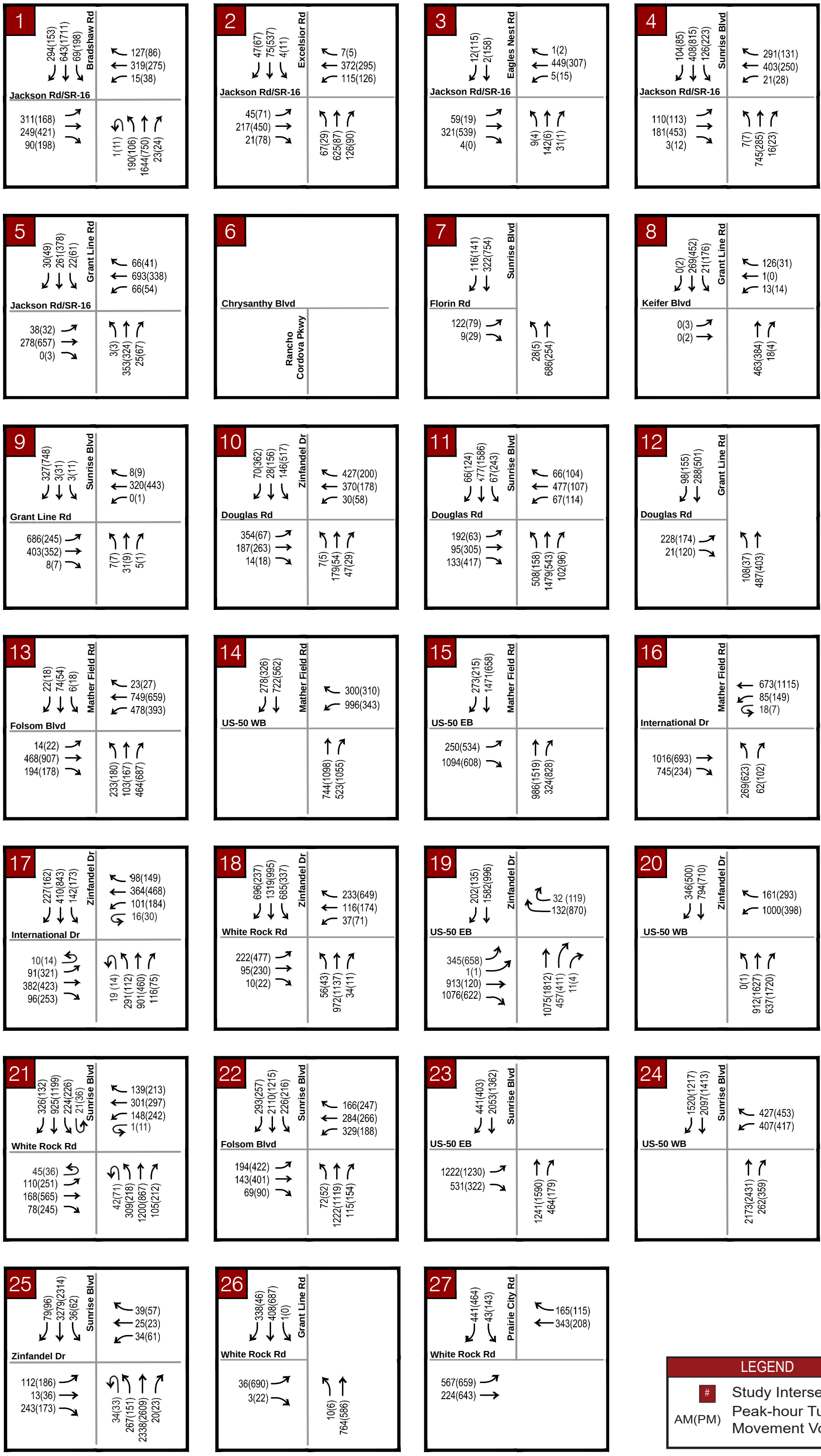
Roadway Segments

Table 4 presents the peak-hour intersection operating conditions for this analysis scenario. As indicated in Table 4, the study roadway segments operate from LOS A to LOS F.

Table 4 – Existing (2017) Roadway Segment Level of Service

ID	Roadway	Segment		Existing				
		From	To	Travel Lanes	Facility Type	Daily Volume	Volume / Capacity Ratio	Level of Service
1	Jackson Rd	Bradshaw Rd	Excelsior Rd	2	Arterial M	12,341	0.69	B
2	Jackson Rd	Excelsior Rd	Eagles Nest Rd	2	Rural Hwy	11,760	0.51	D
3	Jackson Rd	Eagles Nest Rd	Sunrise Blvd	2	Rural Hwy	11,806	0.52	D
4	Jackson Rd	Sunrise Blvd	Grant Line Rd	2	Rural Hwy	14,980	**0.65**	**E**
5	Excelsior Rd	Kiefer Blvd	Jackson Rd	2	Arterial M	4,552	0.25	A
6	Kiefer Blvd	Grant Line Rd	Jackson Rd/SR-16	2	Rural S	941	0.05	A
7	International Dr	Zinfandel Dr	Sunrise Blvd	6	Arterial M	11,246	0.21	A
8	Mather Blvd	Femoyer St	Douglas Rd	2	Arterial M	5,540	0.31	A
9	Douglas Rd	Mather Blvd	Sunrise Blvd	2	Arterial M	12,404	0.69	B
10	Douglas Rd	Sunrise Blvd	Grant Line Rd	2	Arterial M	7,510	0.42	A
11	White Rock Rd	Zinfandel Dr	Sunrise Blvd	6	Arterial M	15,943	0.30	A
12	White Rock Rd	Sunrise Blvd	Grant Line Rd	2	Rural NS	3,533	0.21	B
13	White Rock Rd	Grant Line Rd	Prairie City Rd	4	Arterial M	15,436	0.43	A
14	Mather Field Rd	Folsom Blvd	US 50 WB Ramp	4	Arterial M	22,543	0.63	B
15	Mather Field Rd	US 50 WB Ramp	US 50 EB Ramp	4	Arterial M	35,028	**0.97**	**E**
16	Mather Field Rd	US 50	International Dr	6	Arterial M	42,228	0.78	C
17	Zinfandel Dr	Folsom Blvd	US 50 WB	4	Arterial M	22,380	0.62	B
18	Zinfandel Dr	US 50	White Rock Rd	6	Arterial M	50,515	**0.94**	**E**
19	Zinfandel Dr	White Rock Rd	International Rd	6	Arterial M	23,685	0.44	A
20	Zinfandel Dr	International Rd	Douglas Rd	4	Arterial M	13,705	0.38	A
21	Sunrise Blvd	US 50 WB Ramp	US 50 EB Ramp	6	Arterial M	67,276	**1.25**	**F**
22	Sunrise Blvd	US 50	Folsom Blvd	6	Arterial M	53,504	**0.99**	**E**
23	Sunrise Blvd	Folsom Blvd	White Rock Rd	6	Arterial M	41,238	0.76	C
24	Sunrise Blvd	White Rock Rd	Douglas Rd	6	Arterial M	30,941	0.57	A
25	Sunrise Blvd	Douglas Rd	Jackson Rd	4	Arterial M	22,635	0.63	B
26	Sunrise Blvd	Jackson Rd	Grant Line Rd	2	Rural S	11,748	0.59	D
27	Grant Line Rd	White Rock Rd	Douglas Rd	2	Rural NS	12,804	**0.75**	**E**
28	Grant Line Rd	Douglas Rd	Jackson Rd	2	Rural S	8,524	0.43	D
29	Grant Line Rd	Jackson Rd	Sunrise Blvd	2	Rural S	7,745	0.39	D

Note: **Bold** represents unacceptable operations.


1
Bradshaw Rd
Jackson Rd/SR-16
294(153) 643(1711) 69(198)
127(86) 319(275) 15(38)
311(168) 249(421) 90(198)
1(11) 190(106) 1644(750) 23(24)
2
Excelsior Rd
Jackson Rd/SR-16
47(67) 75(537) 4(11)
7(5) 372(295) 115(126)
45(71) 217(450) 21(78)
67(29) 625(87) 126(90)
3
Eagles Nest Rd
Jackson Rd/SR-16
12(115) 2(158)
1(2) 449(307) 5(15)
59(19) 321(539) 4(0)
9(4) 142(6) 31(1)
4
Sunrise Blvd
Jackson Rd/SR-16
104(85) 408(815) 126(223)
291(131) 403(250) 21(28)
110(113) 181(453) 3(12)
7(7) 745(285) 16(23)
5
Grant Line Rd
Jackson Rd/SR-16
30(49) 261(378) 22(61)
66(41) 693(338) 66(54)
38(32) 278(657) 0(3)
3(3) 353(324) 25(67)
6
Chrysanthy Blvd
Rancho Cordova Pkwy
7
Sunrise Blvd
Florin Rd
116(141) 322(754)
122(79) 9(29)
28(5) 686(254)
8
Grant Line Rd
Keifer Blvd
0(2) 269(452) 21(176)
126(31) 1(0) 13(14)
0(3) 0(2)
463(384) 18(4)
9
Sunrise Blvd
Grant Line Rd
327(748) 3(31) 3(11)
8(9) 320(443) 0(1)
686(245) 403(352) 8(7)
7(7) 31(9) 5(1)
10
Zinfandel Dr
Douglas Rd
70(362) 28(156) 146(517)
427(200) 370(178) 30(58)
354(67) 187(263) 14(18)
7(5) 179(54) 47(29)
11
Sunrise Blvd
Douglas Rd
66(124) 477(1586) 67(243)
66(104) 477(107) 67(114)
192(63) 95(305) 133(417)
508(158) 1479(543) 102(96)
12
Grant Line Rd
Douglas Rd
98(155) 288(501)
228(174) 21(120)
108(37) 487(403)
13
Mather Field Rd
Folsom Blvd
22(18) 74(54) 6(18)
23(27) 749(659) 478(393)
14(22) 468(907) 194(178)
233(180) 103(167) 464(687)
14
Mather Field Rd
US-50 WB
278(326) 722(562)
300(310) 996(343)
744(1098) 523(1055)
15
Mather Field Rd
US-50 EB
273(215) 1471(658)
250(534) 1094(608)
986(1519) 324(828)
16
Mather Field Rd
International Dr
673(1115) 85(149) 18(7)
1016(693) 745(234)
269(623) 62(102)
17
Zinfandel Dr
International Dr
227(162) 410(843) 142(173)
98(149) 364(468) 101(184) 16(30)
10(14) 91(321) 382(423) 96(253)
19 (14) 291(112) 901(460) 116(75)
18
Zinfandel Dr
White Rock Rd
696(237) 1319(995) 685(337)
233(649) 116(174) 37(71)
222(477) 95(230) 10(22)
56(43) 972(1137) 34(11)
19
Zinfandel Dr
US-50 EB
202(135) 1582(996)
32 (119) 132(870)
345(658) 1(1) 913(120) 1076(622)
1075(1812) 457(411) 11(4)
20
Zinfandel Dr
US-50 WB
346(500) 794(710)
161(293) 1000(398)
0(1) 912(1627) 637(1720)
21
Sunrise Blvd
White Rock Rd
326(132) 925(1199) 224(226) 21(36)
139(213) 301(297) 148(242) 1(11)
45(36) 110(251) 168(565) 78(245)
42(71) 309(218) 1200(867) 105(212)
22
Sunrise Blvd
Folsom Blvd
293(257) 2110(1215) 226(216)
166(247) 284(266) 329(188)
194(422) 143(401) 69(90)
72(52) 1222(1119) 115(154)
23
Sunrise Blvd
US-50 EB
441(403) 2053(1362)
1222(1230) 531(322)
1241(1590) 464(179)
24
Sunrise Blvd
US-50 WB
1520(1217) 2097(1413)
427(453) 407(417)
2173(2431) 262(359)
25
Sunrise Blvd
Zinfandel Dr
79(96) 3279(2314) 36(62)
39(57) 25(23) 34(61)
112(186) 13(36) 243(173)
34(33) 267(151) 2338(2609) 20(23)
26
Grant Line Rd
White Rock Rd
338(46) 408(687) 1(0)
36(690) 3(22)
10(6) 764(586)
27
Prairie City Rd
White Rock Rd
441(464) 43(143)
165(115) 343(208)
567(659) 224(643)
LEGEND
#
Study Intersection
AM(PM)
Peak-hour Turning Movement Volumes

ASSESSMENT OF PROPOSED PROJECT

Proposed Project Trip Generation and Assignment

The number of trips anticipated to be generated by the proposed project are approximated using data included in *Trip Generation, 9th Edition,* published by the Institute of Transportation Engineers (ITE).

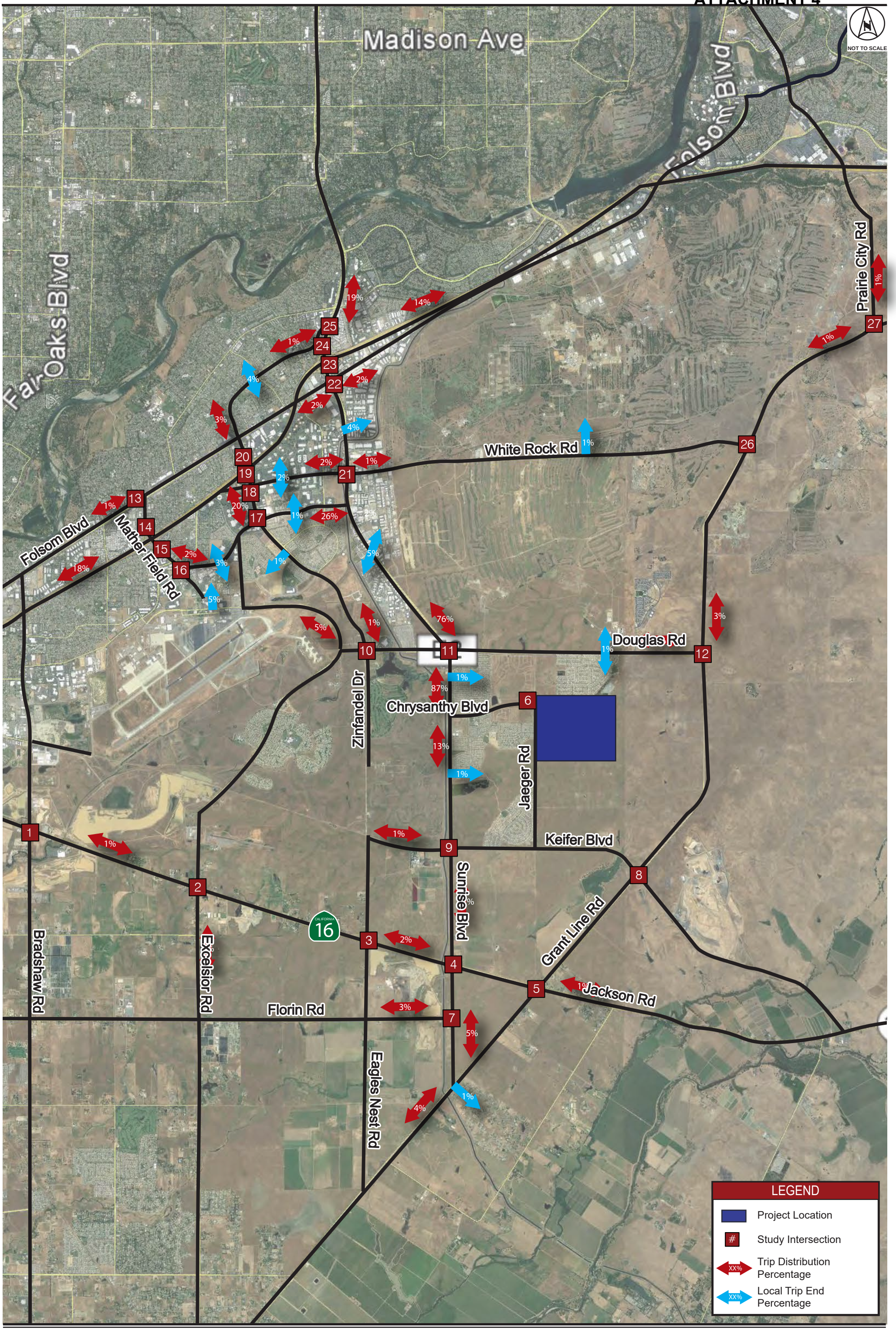
According to the proposed project site plan, 666 market rate single family detached units (SFR), 120 multi-family multifamily housing units and 637 AAR units are proposed for the site. Active Adult Residential (AAR) refers to detached senior housing units. This land use type is understood to have trip characteristics that generate fewer daily trips when compared to non-age restrictive land use types. In fact, as described in *Trip Generation*, the daily trip rate for AAR is 61 percent less than the daily trip rate for SFR. In addition, the AM and PM peak-hour trip rates for AAR are 71 percent and 73 percent less than the AM peak-hour and PM peak-hour trip rates for SFR, respectively.

To represent this development, ITE Land Use Codes 210 (Single Family Detached Housing), 220 (Apartment), 251 (Senior Adult Housing - Detached) and 820 (Shopping Center) were applied. As shown in Table 5, the proposed project is estimated to generate 10,266 new daily trips, with 721 new trips occurring during the AM peak-hour, and 934 new trips occurring during the PM peak-hour. Internal capture rates of 3.23 percent and 10.04 percent were applied to the AM and PM peak-hours, respectively. For the commercial uses, a pass-by reduction of 34% was applied for the PM peak-hour, in accordance with the ITE Trip Generation Handbook, 9th Edition.

Table 5 – Proposed Project Trip Generation

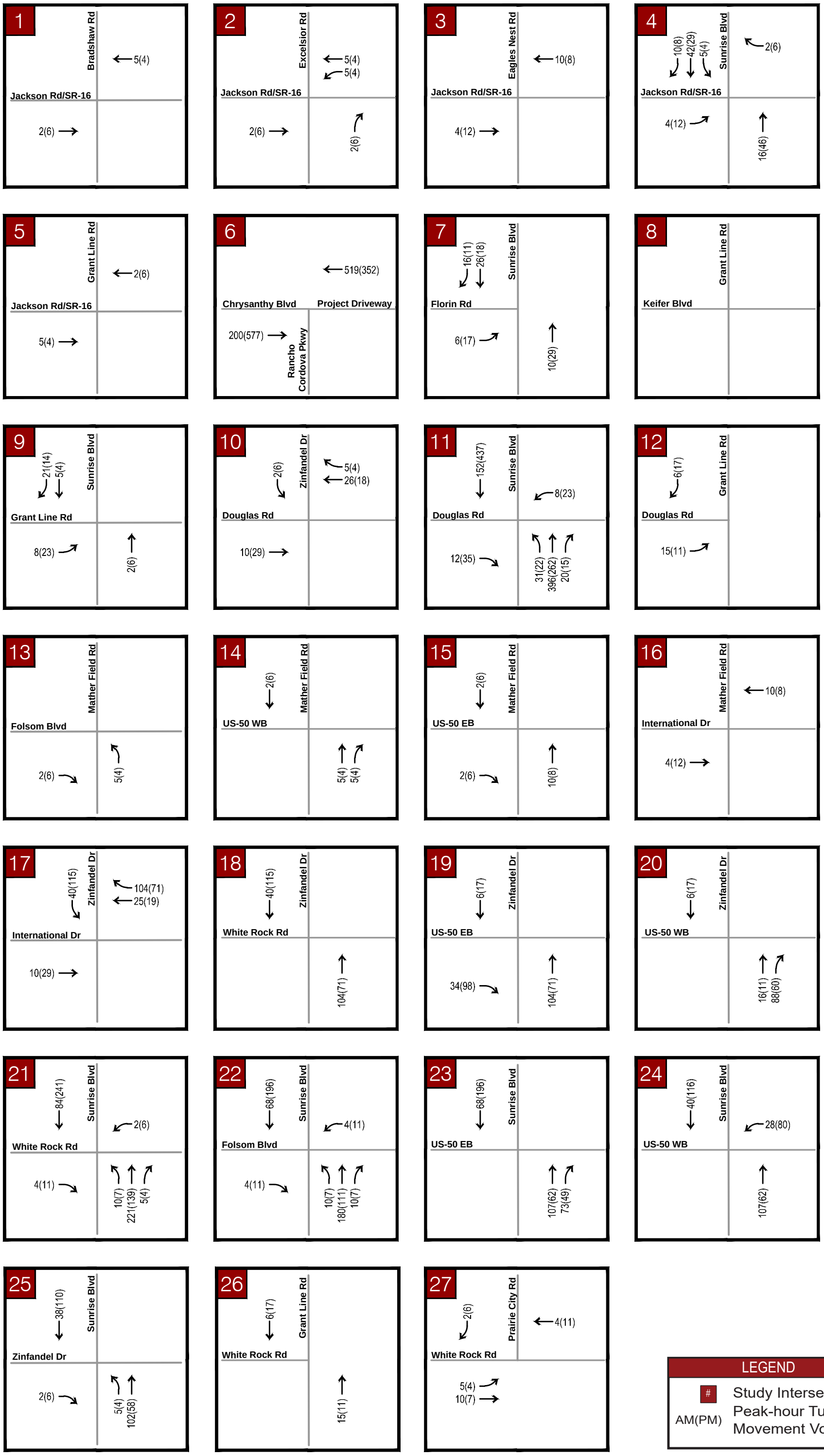
Land Use (ITE Code)	Size (DU/KSF)	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Single Family Detached Housing (210)	666	6,146	496	123	373	648	409	239
Apartment (220)	120	602	57	10	47	56	37	19
Senior Adult Housing - Detached (251)	637	2,150	136	47	89	154	94	60
Shopping Center (820)	45.806	1,368	32	21	11	76	40	36
Total		**10,266**	**721**	**201**	**520**	**934**	**580**	**354**

The project trip distribution percentages are provided in Figure 5. The assignments of project trips are depicted in Figure 6.



Kimley»Horn

Figure 5
Existing (2017) Project Trip Distribution


1
Bradshaw Rd
5(4)
Jackson Rd/SR-16
2(6)
2
Excelsior Rd
5(4)
5(4)
Jackson Rd/SR-16
2(6)
2(6)
3
Eagles Nest Rd
10(8)
Jackson Rd/SR-16
4(12)
4
Sunrise Blvd
10(8)
42(29)
5(4)
2(6)
Jackson Rd/SR-16
4(12)
16(46)
5
Grant Line Rd
2(6)
Jackson Rd/SR-16
5(4)
6
519(352)
Chrysanthy Blvd
Project Driveway
200(577)
Rancho Cordova Pkwy
7
16(11)
26(18)
Sunrise Blvd
Florin Rd
6(17)
10(29)
8
Grant Line Rd
Keifer Blvd
9
21(14)
5(4)
Sunrise Blvd
Grant Line Rd
8(23)
2(6)
10
2(6)
Zinfandel Dr
5(4)
26(18)
Douglas Rd
10(29)
11
152(437)
Sunrise Blvd
8(23)
Douglas Rd
12(35)
31(22)
396(262)
20(15)
12
6(17)
Grant Line Rd
Douglas Rd
15(11)
13
Mather Field Rd
Folsom Blvd
2(6)
5(4)
14
2(6)
Mather Field Rd
US-50 WB
5(4)
5(4)
15
2(6)
Mather Field Rd
US-50 EB
2(6)
10(8)
16
Mather Field Rd
10(8)
International Dr
4(12)
17
40(115)
Zinfandel Dr
104(71)
25(19)
International Dr
10(29)
18
40(115)
Zinfandel Dr
White Rock Rd
104(71)
19
6(17)
Zinfandel Dr
US-50 EB
34(98)
104(71)
20
6(17)
Zinfandel Dr
US-50 WB
16(11)
88(60)
21
84(241)
Sunrise Blvd
2(6)
White Rock Rd
4(11)
10(7)
221(139)
5(4)
22
68(196)
Sunrise Blvd
4(11)
Folsom Blvd
4(11)
10(7)
180(111)
10(7)
23
68(196)
Sunrise Blvd
US-50 EB
107(62)
73(49)
24
40(116)
Sunrise Blvd
28(80)
US-50 WB
107(62)
25
38(110)
Sunrise Blvd
Zinfandel Dr
2(6)
5(4)
102(58)
26
6(17)
Grant Line Rd
White Rock Rd
15(11)
27
2(6)
Prairie City Rd
4(11)
White Rock Rd
5(4)
10(7)
LEGEND
#
Study Intersection
AM(PM)
Peak-hour Turning Movement Volumes

EXISTING (2017) PLUS PROPOSED PROJECT CONDTIONS

As previously discussed, the number of trips anticipated to be generated by the proposed project was derived using the *Trip Generation Manual, 9th Edition,* published by the Institute for Traffic Engineering (ITE). These trips were assigned to the roadway network based on existing traffic volumes, output from the SACSIM travel demand model, and professional judgment. Using these volumes, levels of service were determined at the study facilities. Existing (2017) plus Proposed Project peak-hour turn movement volumes are presented in Figure 7. Levels of service were then determined at the study facilities. Analysis worksheets for this scenario are provided in Appendix C.

Table 6 presents the intersection operating conditions for this analysis scenario. As indicated in Table 6, the study intersections operate from LOS A to LOS F during the AM and PM peak-hours.

Table 7 presents the roadway segment operating conditions for this analysis scenario. As indicated in Table 7, the study roadway segments operate from LOS A to LOS F.

Table 6 – Existing (2017) plus Proposed Project Intersection Levels of Service

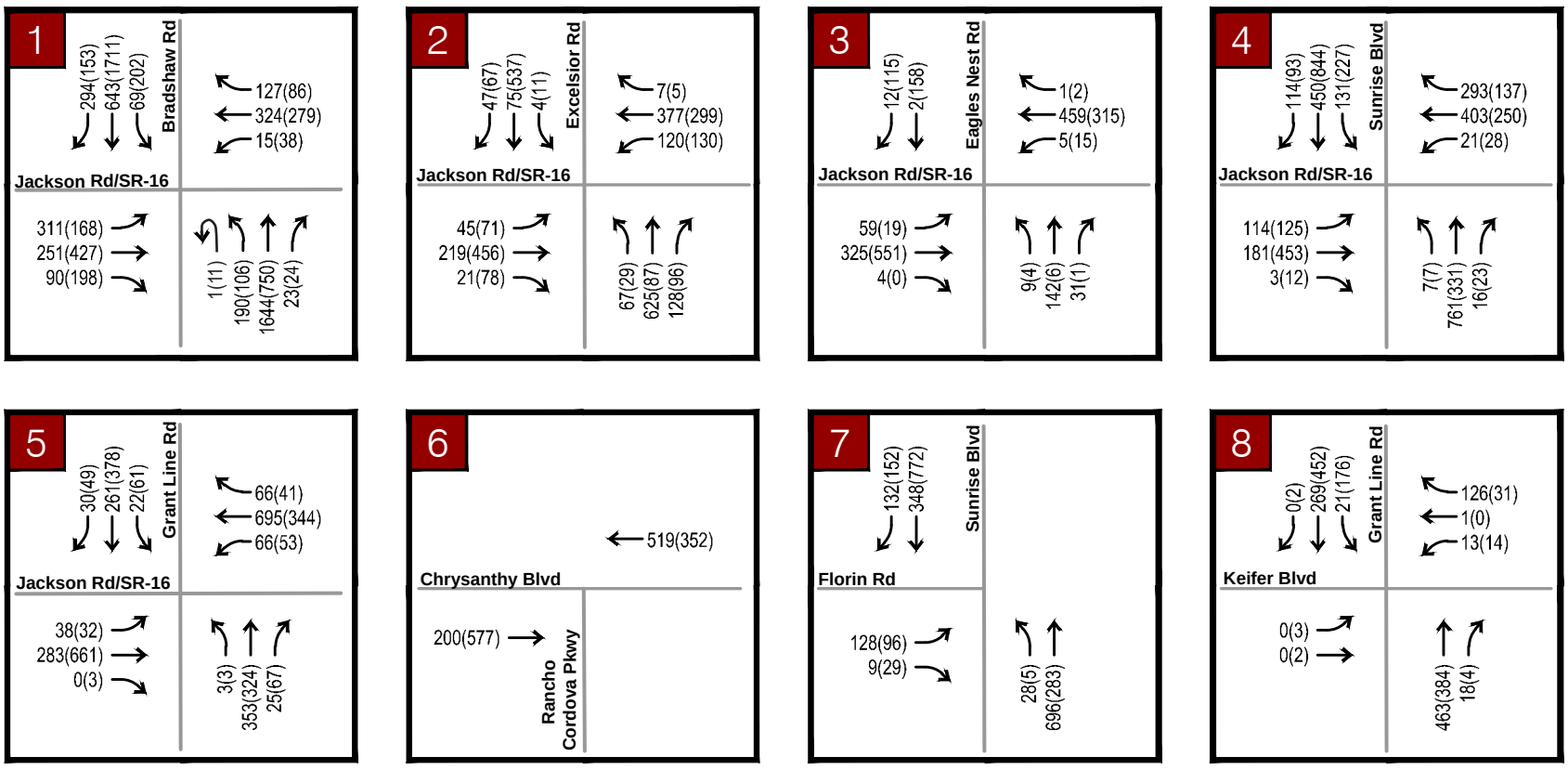
#	Intersection	Traffic Control	Existing				Existing Plus Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS
1	Jackson Rd/SR-16 @ Bradshaw Rd	Signal	**122.2**	**F**	**79.1**	**F**	123.3	F	80.1	F
2	Jackson Rd/SR-16 @ Excelsior Rd	Signal	74.1	E	51.8	D	76.3	E	53	D
3	Jackson Rd/SR-16 @ Eagles Nest Rd	SSSC	**17.2 (89.1 NB)**	**F**	**20.1 (253.1 NB)**	**F**	**18.1 (95.3 NB)**	**F**	**18.9 (*ECL NB)**	**F**
4	Jackson Rd/SR-16 @ Sunrise Rd	Signal	66	E	44.3	D	68.9	E	47.2	D
5	Jackson Rd/SR-16 @ Grant Line Rd	Signal	**113.8**	**F**	**136.4**	**F**	114.1	F	136.9	F
6	Rancho Cordova Pkwy @ Chrysanthy Blvd	Signal	Does Not Exist				1.4	A	1.2	A
7	Florin Rd @ Sunrise Blvd	Signal	9.5	A	10.6	B	9.8	A	11.1	B
8	Grant Line Rd @ Kiefer Blvd	AWSC	15.2	C	27.2	D	15.2	C	27.2	D
9	Grant Line Rd @ Sunrise Blvd	Signal	**113.1**	**F**	52.1	D	**122.2**	**F**	55.0	D
10	Douglas Rd @ Zinfandel Dr	Signal	44.3	D	19.1	B	44.8	D	19.3	B
11	Douglas Rd @ Sunrise Blvd	Signal	28.4	C	41.5	D	34.4	C	**59.3**	**E**
12	Douglas Rd @ Grant Line Rd	Signal	12.0	B	15.6	B	12.4	B	16.4	B
13	Mather Field Rd @ Folsom Blvd	Signal	27.5	C	51.7	D	27.6	C	51.8	D
14	Mather Field Rd @ US-50 Westbound Ramps	Signal	**142.9**	**F**	22.1	C	**142.5**	**F**	22	C
15	Mather Field Rd @ US-50 Eastbound Ramps	Signal	53.5	D	24.3	C	53.6	D	24.4	C
16	Mather Field Rd @ International Dr	Signal	10.9	B	23.9	C	10.8	B	23.9	C
17	Zinfandel Dr @ International Dr	Signal	22.4	C	32.9	C	23.7	C	35.2	D
18	Zinfandel Dr @ White Rock Rd	Signal	33.4	C	39.1	D	33.9	C	40.7	D
19	Zinfandel Dr @ US-50 Eastbound Ramps	Signal	**85.1**	**F**	23.2	C	**87.0**	**F**	24.7	C
20	Zinfandel Dr @ US-50 Westbound Ramps	Signal	29.7	C	18.1	B	29.6	C	18.0	B
21	Sunrise Blvd @ White Rock Rd	Signal	35.7	D	56.5	E	36.4	D	**61.1**	**E**
22	Sunrise Blvd @ Folsom Blvd	Signal	36.6	D	41.5	D	38	D	42.2	D
23	Sunrise Blvd @ US-50 Eastbound Ramps	Signal	23.9	C	23.0	C	23.7	C	22.7	C
24	Sunrise Blvd @ US-50 Westbound Ramps	Signal	15.3	B	17.8	B	15.5	B	18.5	B
25	Sunrise Blvd @ Zinfandel Dr	Signal	**112.8**	**F**	**58.6**	**E**	**117.2**	**F**	**68.0**	**E**
26	White Rock Rd @ Grant Line Rd	Signal	6.1	A	13.4	B	6.1	A	13.5	B
27	White Rock Rd @ Prairie City Rd	Signal	**61.5**	**E**	**59.4**	**E**	63.2	E	61.8	E

Note: **Bold** represents unacceptable operations. Shaded represents a significant impact.* ECL (Exceeds Calculable Limit)

Table 7- Existing (2017) Plus Project Roadway Segment Levels of Service

ID	Roadway	Segment		Existing					Existing + Jaeger Ranch Project					LOS Threshold
		From	To	Travel Lanes	Facility Type	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type	Daily Volume	Volume / Capacity Ratio	Level of Service	
1	Jackson Rd	Bradshaw Rd	Excelsior Rd	2	Arterial M	12,341	0.69	B	2	Arterial M	12,443	0.69	B	E
2	Jackson Rd	Excelsior Rd	Eagles Nest Rd	2	Rural Hwy	11,760	0.51	D	2	Rural Hwy	11,965	0.52	D	E
3	Jackson Rd	Eagles Nest Rd	Sunrise Blvd	2	Rural Hwy	11,806	0.52	D	2	Rural Hwy	12,011	0.52	D	E
4	Jackson Rd	Sunrise Blvd	Grant Line Rd	2	Rural Hwy	14,980	**0.65**	**E**	2	Rural Hwy	15,082	**0.66**	**E**	D
5	Excelsior Rd	Kiefer Blvd	Jackson Rd	2	Arterial M	4,552	0.25	A	2	Arterial M	4,552	0.25	A	E
6	Kiefer Blvd	Grant Line Rd	Jackson Rd/SR-16	2	Rural S	941	0.05	A	2	Rural S	941	0.05	A	E
7	International Dr	Zinfandel Dr	Sunrise Blvd	6	Arterial M	11,246	0.21	A	6	Arterial M	13,909	0.26	A	D
8	Mather Blvd	Femoyer St	Douglas Rd	2	Arterial M	5,540	0.31	A	2	Arterial M	6,052	0.34	A	D
9	Douglas Rd	Mather Blvd	Sunrise Blvd	2	Arterial M	12,404	0.69	B	2	Arterial M	13,019	0.72	C	D
10	Douglas Rd	Sunrise Blvd	Grant Line Rd	2	Arterial M	7,510	0.42	A	2	Arterial M	7,920	0.44	A	D
11	White Rock Rd	Zinfandel Dr	Sunrise Blvd	6	Arterial M	15,943	0.30	A	6	Arterial M	16,148	0.30	A	D
12	White Rock Rd	Sunrise Blvd	Grant Line Rd	2	Rural NS	3,533	0.21	B	2	Rural NS	3,635	0.21	C	D
13	White Rock Rd	Grant Line Rd	Prairie City Rd	4	Arterial M	15,436	0.43	A	4	Arterial M	15,743	0.44	A	E
14	Mather Field Rd	Folsom Blvd	US 50 WB Ramp	4	Arterial M	22,543	0.63	B	4	Arterial M	22,645	0.63	B	D
15	Mather Field Rd	US 50 WB Ramp	US 50 EB Ramp	4	Arterial M	35,028	**0.97**	**E**	4	Arterial M	35,130	**0.98**	**E**	D
16	Mather Field Rd	US 50	International Dr	6	Arterial M	42,228	0.78	C	6	Arterial M	42,433	0.79	C	D
17	Zinfandel Dr	Folsom Blvd	US 50 WB	4	Arterial M	22,380	0.62	B	4	Arterial M	22,687	0.63	B	D
18	Zinfandel Dr	US 50	White Rock Rd	6	Arterial M	50,515	**0.94**	**E**	6	Arterial M	52,563	**0.97**	**E**	D
19	Zinfandel Dr	White Rock Rd	International Rd	6	Arterial M	23,685	0.44	A	6	Arterial M	25,733	0.48	A	D
20	Zinfandel Dr	International Rd	Douglas Rd	4	Arterial M	13,705	0.38	A	4	Arterial M	13,807	0.38	A	D
21	Sunrise Blvd	US 50 WB Ramp	US 50 EB Ramp	6	Arterial M	67,276	**1.25**	**F**	6	Arterial M	70,041	**1.30**	**F**	D
22	Sunrise Blvd	US 50	Folsom Blvd	6	Arterial M	53,504	**0.99**	**E**	**6**	**Arterial M**	**56,986**	**1.06**	**F**	**D**
23	Sunrise Blvd	Folsom Blvd	White Rock Rd	6	Arterial M	41,238	0.76	C	6	Arterial M	45,540	0.84	D	D
24	Sunrise Blvd	White Rock Rd	Douglas Rd	6	Arterial M	30,941	0.57	A	6	Arterial M	38,725	0.72	C	D
25	Sunrise Blvd	Douglas Rd	Jackson Rd	4	Arterial M	22,635	0.63	B	4	Arterial M	31,546	0.88	D	D
26	Sunrise Blvd	Jackson Rd	Grant Line Rd	2	Rural S	11,748	0.59	D	2	Rural S	12,567	0.63	E	E
27	Grant Line Rd	White Rock Rd	Douglas Rd	2	Rural NS	12,804	**0.75**	**E**	2	Rural NS	13,111	**0.77**	**E**	D
28	Grant Line Rd	Douglas Rd	Jackson Rd	2	Rural S	8,524	0.43	D	2	Rural S	8,524	0.43	D	D
29	Grant Line Rd	Jackson Rd	Sunrise Blvd	2	Rural S	7,745	0.39	D	2	Rural S	7,745	0.39	D	E

Note: **Bold** represents unacceptable operations. Shaded represents a significant impact.


1
Bradshaw Rd
Jackson Rd/SR-16
294(153)
643(1711)
69(202)
127(86)
324(279)
15(38)
311(168)
251(427)
90(198)
1(11)
190(106)
1644(750)
23(24)
2
Excelsior Rd
Jackson Rd/SR-16
47(67)
75(537)
4(11)
7(5)
377(299)
120(130)
45(71)
219(456)
21(78)
67(29)
625(87)
128(96)
3
Eagles Nest Rd
Jackson Rd/SR-16
12(115)
2(158)
1(2)
459(315)
5(15)
59(19)
325(551)
4(0)
9(4)
142(6)
31(1)
4
Sunrise Blvd
Jackson Rd/SR-16
114(93)
450(844)
131(227)
293(137)
403(250)
21(28)
114(125)
181(453)
3(12)
7(7)
761(331)
16(23)
5
Grant Line Rd
Jackson Rd/SR-16
30(49)
261(378)
22(61)
66(41)
695(344)
66(53)
38(32)
283(661)
0(3)
3(3)
353(324)
25(67)
6
Chrysanthy Blvd
Rancho Cordova Pkwy
519(352)
200(577)
7
Sunrise Blvd
Florin Rd
132(152)
348(772)
128(96)
9(29)
28(5)
696(283)
8
Grant Line Rd
Keifer Blvd
0(2)
269(452)
21(176)
126(31)
1(0)
13(14)
0(3)
0(2)
463(384)
18(4)
9
Sunrise Blvd
Grant Line Rd
348(762)
8(35)
3(11)
8(9)
320(443)
0(1)
694(268)
403(352)
8(7)
7(7)
33(15)
5(1)
10
Zinfandel Dr
Douglas Rd
70(362)
28(156)
148(523)
432(204)
396(196)
30(58)
354(67)
197(292)
14(18)
7(5)
179(54)
47(29)
11
Sunrise Blvd
Douglas Rd
66(124)
629(2023)
67(246)
66(104)
477(107)
75(137)
192(63)
95(305)
145(452)
539(180)
1875(805)
122(111)
12
Grant Line Rd
Douglas Rd
104(172)
288(501)
243(185)
21(120)
108(37)
487(403)
13
Mather Field Rd
Folsom Blvd
22(18)
74(54)
6(18)
23(27)
749(659)
478(392)
14(22)
468(907)
196(184)
238(184)
103(167)
464(687)
14
Mather Field Rd
US-50 WB
278(326)
724(568)
300(310)
996(343)
749(1102)
528(1059)
15
Mather Field Rd
US-50 EB
273(215)
1473(664)
250(534)
1096(614)
996(1527)
324(828)
16
Mather Field Rd
International Dr
683(1123)
85(142)
18(7)
1020(705)
745(234)
269(623)
62(102)
17
Zinfandel Dr
International Dr
227(162)
410(843)
182(296)
202(220)
389(487)
101(184)
16(30)
10(14)
91(321)
392(452)
96(253)
19 (14)
291(112)
901(460)
116(75)
18
Zinfandel Dr
White Rock Rd
696(237)
1359(1110)
685(337)
233(649)
116(174)
37(71)
222(477)
95(230)
10(22)
53(43)
1076(1208)
34(11)
19
Zinfandel Dr
US-50 EB
202(135)
1588(1013)
32 (119)
132(870)
345(658)
1(1)
913(120)
1110(720)
1179(1883)
457(411)
11(4)
20
Zinfandel Dr
US-50 WB
346(500)
800(727)
161(293)
1000(398)
928(1638)
725(1780)
21
Sunrise Blvd
White Rock Rd
326(132)
1009(1440)
224(226)
21(36)
139(213)
301(297)
149(248)
1(11)
45(36)
110(251)
168(565)
82(256)
42(71)
319(225)
1421(1006)
110(216)
22
Sunrise Blvd
Folsom Blvd
293(257)
2178(1411)
226(216)
166(247)
284(266)
333(198)
194(422)
143(401)
73(101)
82(59)
1402(1230)
125(161)
23
Sunrise Blvd
US-50 EB
441(403)
2121(1558)
1222(1230)
531(322)
1348(1652)
537(228)
24
Sunrise Blvd
US-50 WB
1520(1217)
2137(1529)
427(453)
435(497)
2280(2493)
262(359)
25
Sunrise Blvd
Zinfandel Dr
79(96)
3317(2424)
36(62)
39(57)
25(23)
34(61)
112(186)
13(36)
245(179)
34(33)
272(155)
2440(2667)
20(23)
26
Grant Line Rd
White Rock Rd
338(46)
414(704)
36(689)
3(22)
10(6)
779(597)
27
Prairie City Rd
White Rock Rd
443(470)
43(143)
165(115)
347(219)
572(663)
234(650)
LEGEND
#
Study Intersection
AM(PM)
Peak-hour Turning Movement Volumes

CUMULATIVE CONDITIONS

Future traffic estimates were prepared using the modified SACSIM travel demand model developed by the City of Rancho Cordova for the 2040 General Plan. The difference between the resulting traffic estimate and the 2012 baseline model results (the growth) was then added to Existing (2017) traffic volumes to establish Cumulative (2040) traffic estimates for this study. Using these volumes and network changes, levels of service were determined at the study facilities. Analysis worksheets for this scenario are provided in Appendix D. The future roadway network and additional study facilities for the Cumulative (2040) scenario are shown in Figure 8. Figure 9 depicts the assumed lane geometries for the Cumulative (2040) scenario. Cumulative peak-hour turning movement volumes are presented in Figure 10.

Table 8 presents the peak-hour intersection operating conditions for this analysis scenario. As indicated in Table 8, the study intersections operate from LOS A to LOS F during the AM and PM peak-hours.

Table 9 presents the roadway segment operating conditions for this analysis scenario. As indicated in Table 9, the study roadway segments operate from LOS A to LOS F.

Table 8 – Cumulative (2040) Intersection Levels of Service

#	Intersection	Traffic Control	Cummulative No Project			
			AM Peak Hour		PM Peak Hour	
			Delay (Seconds)	LOS	Delay (Seconds)	LOS
1	Jackson Rd/SR-16 @ Bradshaw Rd	Signal	**146.9**	**F**	**194.9**	**F**
2	Jackson Rd/SR-16 @ Excelsior Rd	Signal	66.4	E	53.8	D
3	Jackson Rd/SR-16 @ Eagles Nest Rd	Signal	11.0	B	14.1	B
4	Jackson Rd/SR-16 @ Sunrise Rd	Signal	**104.6**	**F**	53.9	D
5	Jackson Rd/SR-16 @ Grant Line Rd	Signal	**114.7**	**F**	**62.7**	**E**
6	Rancho Cordova Pkwy @ Chrysanthy Blvd	Signal	11.8	B	10.6	B
7	Florin Rd @ Sunrise Blvd	Signal	9.8	A	12.6	B
8	Grant Line Rd @ Kiefer Blvd	Signal	20.8	C	18.5	B
9	Grant Line Rd @ Sunrise Blvd	Signal	**150.1**	**F**	**109.2**	**F**
10	Douglas Rd @ Zinfandel Dr	Signal	**145.2**	**F**	35.3	D
11	Douglas Rd @ Sunrise Blvd	Signal	**97.1**	**F**	**107.6**	**F**
12	Douglas Rd @ Grant Line Rd	Signal	14.3	B	22.1	C
13	Mather Field Rd @ Folsom Blvd	Signal	46.3	D	**142.2**	**F**
14	Mather Field Rd @ US-50 Westbound Ramps	Signal	30.1	C	12.4	B
15	Mather Field Rd @ US-50 Eastbound Ramps	Signal	28.5	C	6.1	A
16	Mather Field Rd @ International Dr	Signal	6.8	A	9.6	A
17	Zinfandel Dr @ International Dr	Signal	45.3	D	**68.2**	**E**
18	Zinfandel Dr @ White Rock Rd	Signal	41.7	D	**71.2**	**E**
19	Zinfandel Dr @ US-50 Eastbound Ramps	Signal	**79.4**	**E**	**166.4**	**F**
20	Zinfandel Dr @ US-50 Westbound Ramps	Signal	13.2	B	9.8	A
21	Sunrise Blvd @ White Rock Rd	Signal	**65.5**	**E**	**120.1**	**F**
22	Sunrise Blvd @ Folsom Blvd	Signal	41.2	D	**56.5**	**E**
23	Sunrise Blvd @ US-50 Eastbound Ramps	Signal	14.0	B	11.4	B
24	Sunrise Blvd @ US-50 Westbound Ramps	Signal	11.3	B	15.4	B
25	Sunrise Blvd @ Zinfandel	Signal	**209.8**	**F**	**93.9**	**F**
26	White Rock Rd @ Grant Line Rd	Signal	11.4	B	41.6	D
27	White Rock Rd @ Prairie City Rd	Signal	**140.3**	**F**	**157.0**	**F**
28	Rancho Cordova Pkwy @ Folsom Blvd	Signal	15.4	B	42.1	D
29	Rancho Cordova Pkwy @ White Rock Rd	Signal	32.6	C	27.0	C
30	Rancho Cordova Pkwy @ Rio Del Oro Pkwy	Signal	22.1	C	20.7	C
31	Rancho Cordova Pkwy @ Douglas Rd	Signal	16.9	B	16.4	B
32	Rancho Cordova Pkwy @ Kiefer Blvd	Signal	21.9	C	19.7	B
33	Rancho Cordova Pkwy @ Grant Line Rd	Signal	8.0	A	8.0	A
34	Americanos Blvd @ International Dr	Signal	6.7	A	5.8	A
35	Americanos Blvd @ Centennial Dr	Signal	18.7	B	16.5	B
36	Americanos Blvd @ Douglas Rd	Signal	22.2	C	19.6	B
37	Americanos Blvd @ Chrysanthy Blvd	Signal	19.2	B	19.3	B
38	Americanos Blvd @ Kiefer Blvd	Signal	8.0	A	8.0	A
39	Chrysanthy Blvd @ Sunrise Blvd	Signal	12.4	B	4.4	A
40	Chrysanthy Blvd @ Grant Line Rd	Signal	7.0	A	3.2	A

Note: **Bold** represents unacceptable operations.

Table 9 – Cumulative (2040) Roadway Segment Level of Service

ID	Roadway	Segment		Cumulative No Project				
		From	To	Travel Lanes	Facility Type	Daily Volume	Volume / Capacity Ratio	Level of Service
1	Jackson Rd	Bradshaw Rd	Excelsior Rd	4	Arterial M	22,600	0.63	B
2	Jackson Rd	Excelsior Rd	Eagles Nest Rd	4	Arterial M	22,740	0.63	B
3	Jackson Rd	Eagles Nest Rd	Sunrise Blvd	2	Rural Hwy	21,500	0.94	E
4	Jackson Rd	Sunrise Blvd	Grant Line Rd	4	Arterial H	23,690	0.59	A
5	Excelsior Rd	Kiefer Blvd	Jackson Rd	2	Arterial M	8,950	0.50	A
6	Kiefer Blvd	Grant Line Rd	Jackson Rd/SR-16	2	Rural S	2,180	0.11	A
7	International Dr	Zinfandel Dr	Sunrise Blvd	6	Arterial M	25,690	0.48	A
8	Mather Blvd	Femoyer St	Douglas Rd	4	Arterial M	20,870	0.58	A
9	Douglas Rd	Mather Blvd	Sunrise Blvd	4	Arterial M	37,150	**1.03**	**F**
10	Douglas Rd	Sunrise Blvd	Grant Line Rd	6	Arterial M	24,290	0.45	A
11	White Rock Rd	Zinfandel Dr	Sunrise Blvd	6	Arterial M	27,540	0.51	A
12	White Rock Rd	Sunrise Blvd	Grant Line Rd	6	Arterial M	16,960	0.31	A
13	White Rock Rd	Grant Line Rd	Prairie City Rd	4	Expressway	41,330	0.57	A
14	Mather Field Rd	Folsom Blvd	US 50 WB Ramp	6	Arterial M	30,420	0.56	A
15	Mather Field Rd	US 50 WB Ramp	US 50 EB Ramp	6	Arterial M	43,380	0.80	D
16	Mather Field Rd	US 50	International Dr	6	Arterial M	56,560	**1.05**	**F**
17	Zinfandel Dr	Folsom Blvd	US 50 WB	6	Arterial M	23,730	0.44	A
18	Zinfandel Dr	US 50	White Rock Rd	6	Arterial M	72,230	**1.34**	**F**
19	Zinfandel Dr	White Rock Rd	International Rd	6	Arterial M	37,080	0.69	B
20	Zinfandel Dr	International Rd	Douglas Rd	4	Arterial M	21,600	0.60	A
21	Sunrise Blvd	US 50 WB Ramp	US 50 EB Ramp	6	Arterial M	71,160	**1.32**	**F**
22	Sunrise Blvd	US 50	Folsom Blvd	6	Arterial M	58,150	**1.08**	**F**
23	Sunrise Blvd	Folsom Blvd	White Rock Rd	6	Arterial M	41,350	0.77	C
24	Sunrise Blvd	White Rock Rd	Douglas Rd	6	Arterial M	49,190	**0.91**	**E**
25	Sunrise Blvd	Douglas Rd	Jackson Rd	4	Arterial M	45,470	**1.26**	**F**
26	Sunrise Blvd	Jackson Rd	Grant Line Rd	4	Arterial H	20,170	0.50	A
27	Grant Line Rd	White Rock Rd	Douglas Rd	4	Expressway	30,330	0.42	A
28	Grant Line Rd	Douglas Rd	Jackson Rd	4	Arterial H	29,380	0.73	C
29	Grant Line Rd	Jackson Rd	Sunrise Blvd	4	Arterial H	13,480	0.34	A
30	Kiefer Blvd	Eagles Nest Rd	Sunrise Blvd	2	Arterial M	2,080	0.12	A
31	Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	4	Arterial M	15,140	0.42	A
32	Kiefer Blvd	Rancho Cordova Pkwy	Americanos Blvd	2	Arterial M	7,790	0.43	A
33	Kiefer Blvd	Americanos Blvd	Grant Line Rd	2	Arterial M	4,170	0.23	A
34	Chrysanthy Blvd	Sunrise Blvd	Rancho Cordova Pkwy	2	Arterial M	5,740	0.32	A
35	Chrysanthy Blvd	Rancho Cordova Pkwy	Americanos Blvd (within project)	2	Arterial M	6,150	0.34	A
36	Chrysanthy Blvd	Americanos Blvd	Grant Line Rd	2	Arterial M	7,070	0.39	A
37	Rancho Cordova Pkwy	Folsom Blvd	White Rock Rd	6	Arterial M	46,310	0.86	D
38	Rancho Cordova Pkwy	White Rock Rd	Rio Del Oro Pkwy	4	Arterial M	42,680	**1.19**	**F**
39	Rancho Cordova Pkwy	Rio Del Oro Pkwy	Douglas Rd	4	Arterial M	17,310	0.48	A
40	Rancho Cordova Pkwy	Douglas Rd	Chrysanthy Blvd	4	Arterial M	15,790	0.44	A
41	Rancho Cordova Pkwy	Chrysanthy Blvd	Keifer Blvd	2	Arterial M	8,350	0.46	A
42	Rancho Cordova Pkwy	Keifer Blvd	Grant Line Rd	2	Arterial M	7,190	0.40	A
43	Americanos Blvd	International Rd	Centennial Rd	2	Arterial M	4,850	0.27	A
44	Americanos Blvd	Centennial Rd	Douglas Rd	2	Arterial M	1,970	0.11	A
45	Americanos Blvd	Douglas Rd	Chrysanthy Blvd	2	Arterial M	4,850	0.27	A
46	Americanos Blvd	Chrysanthy Rd	Keifer Blvd	2	Arterial M	2,800	0.16	A

Note: **Bold** represents unacceptable operations.

ATTACHMENT 4

NOT TO SCALE

Madison Ave
Fair Oaks Blvd
Folsom Blvd
Prairie City Rd
White Rock Rd
International Dr
Rio Del Oro Pkwy
Centennial Dr
Douglas Rd
Mather Field Rd
Zinfandel Dr
Chrysanthy Blvd
Rancho Cordova Pkwy
Americanos Blvd
Keifer Blvd
Sunrise Blvd
Bradshaw Rd
Excelsior Rd
Florin Rd
Jackson Rd
Eagles Nest Rd
Grant Line Rd
CALIFORNIA 16

LEGEND

- Project Location
- # Existing (2017) Study Intersection
- # Existing (2017) Study Segment
- # Cumulative (2040) Study Intersection
- # Cumulative (2040) Study Segment

Kimley»Horn

Figure 8

Cumulative (2040) Study Intersections, Interchanges, and Count Locations

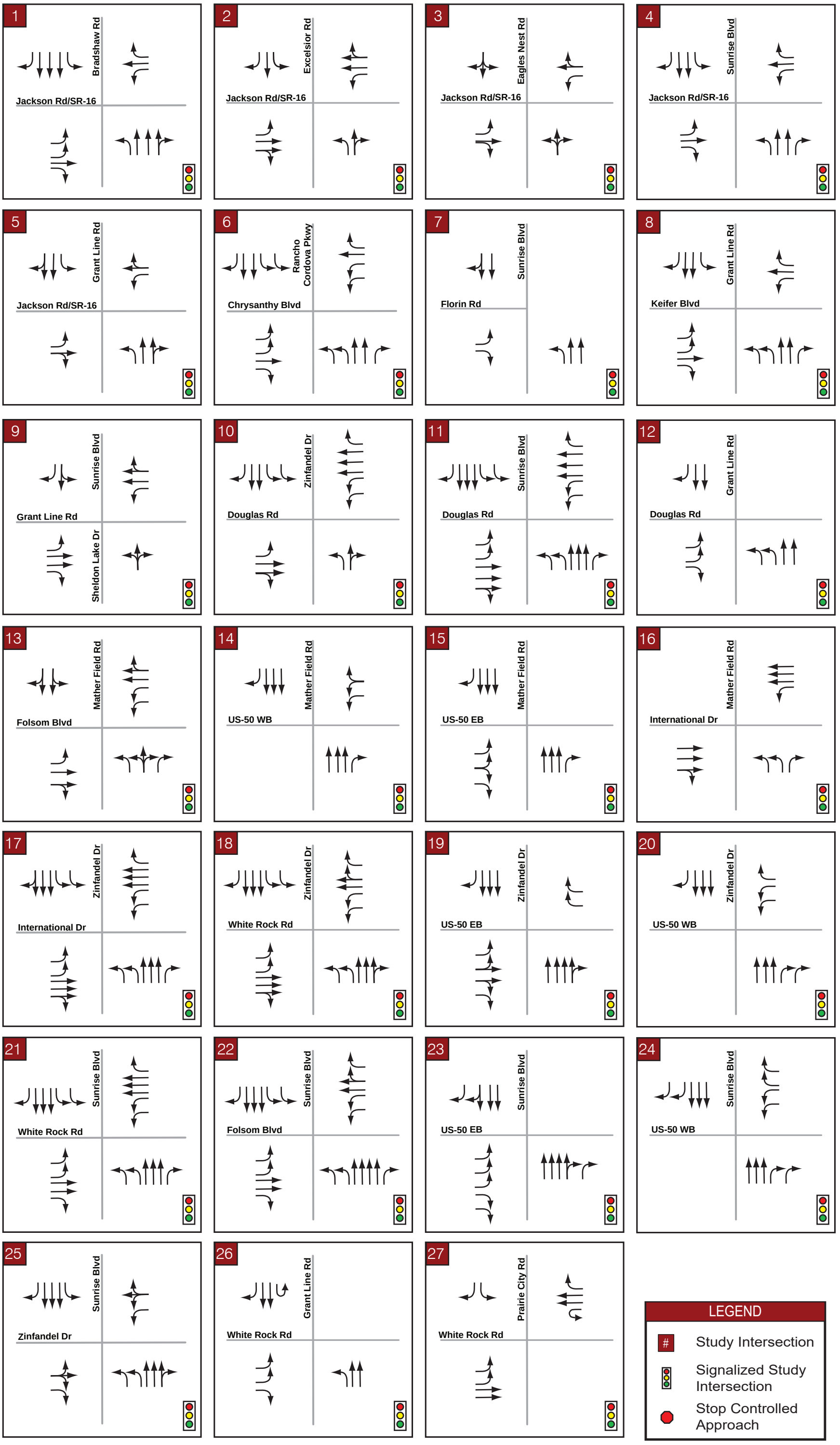
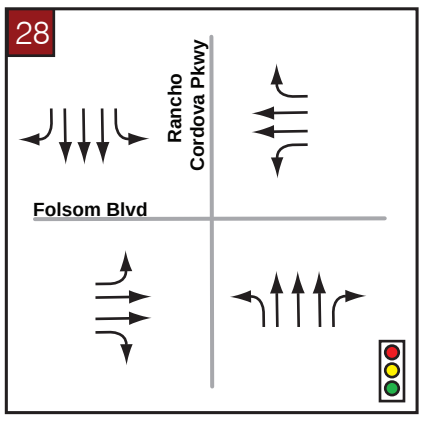
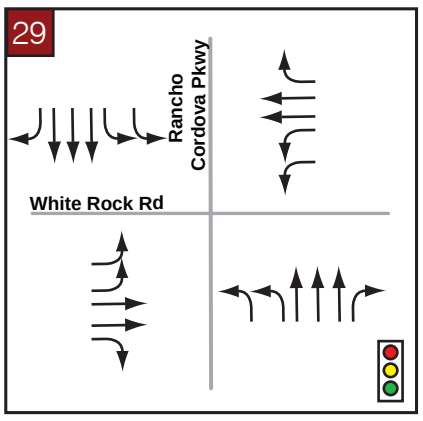
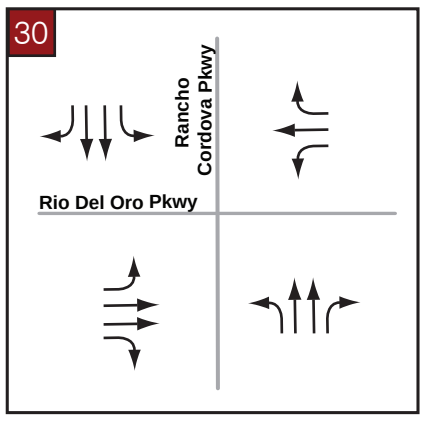


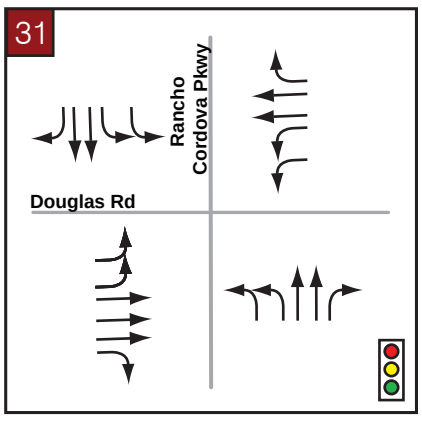
Figure 9

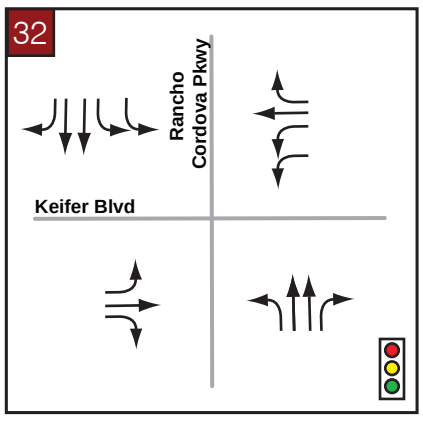
Cumulative (2040) Study Intersections, Traffic Control, and Lane Geometries

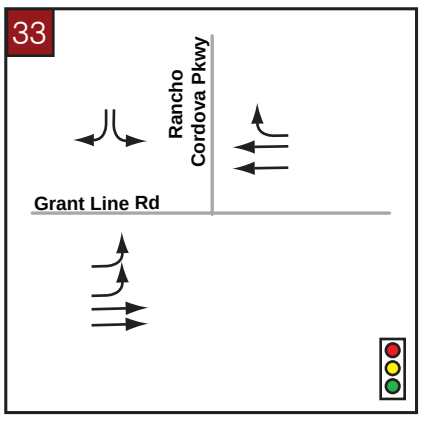

28
Rancho Cordova Pkwy
Folsom Blvd

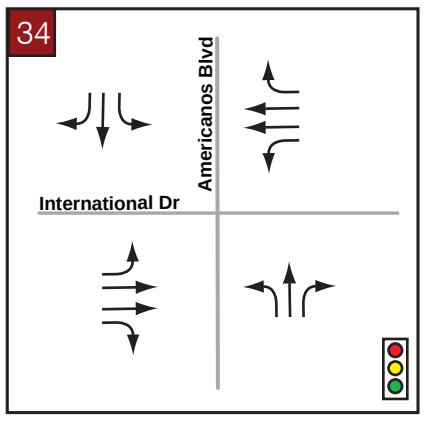

29
Rancho Cordova Pkwy
White Rock Rd

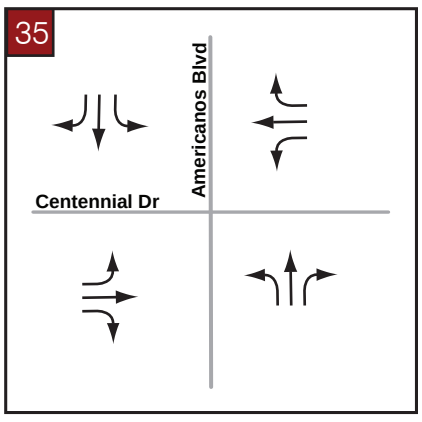

30
Rancho Cordova Pkwy
Rio Del Oro Pkwy

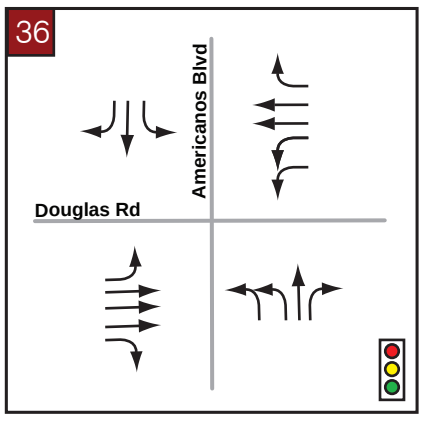

31
Rancho Cordova Pkwy
Douglas Rd

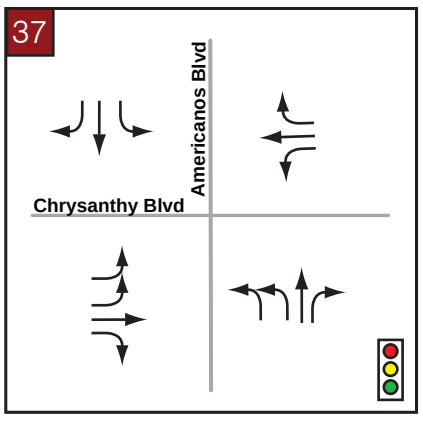

32
Rancho Cordova Pkwy
Keifer Blvd

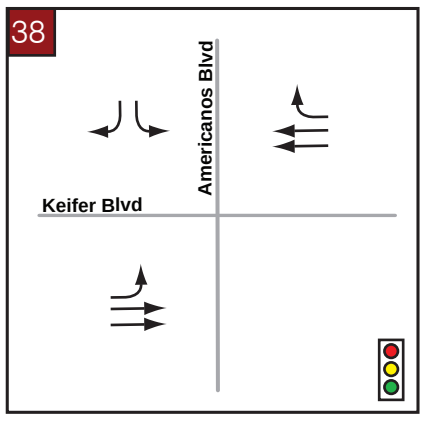

33
Rancho Cordova Pkwy
Grant Line Rd

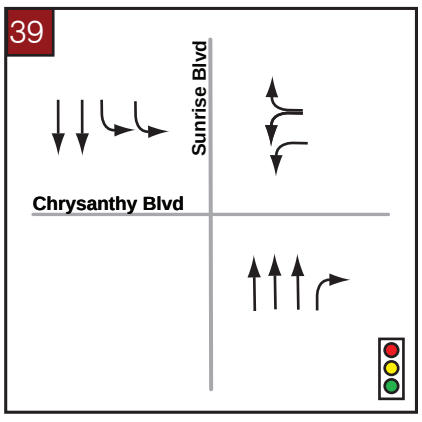

34
Americanos Blvd
International Dr

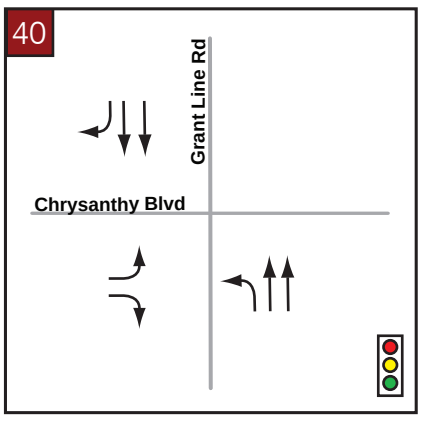

35
Americanos Blvd
Centennial Dr

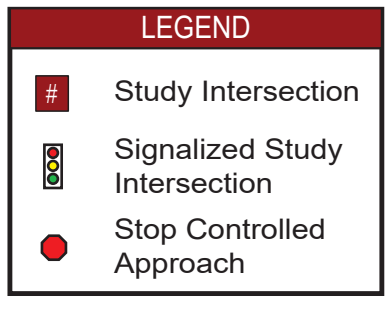

36
Americanos Blvd
Douglas Rd

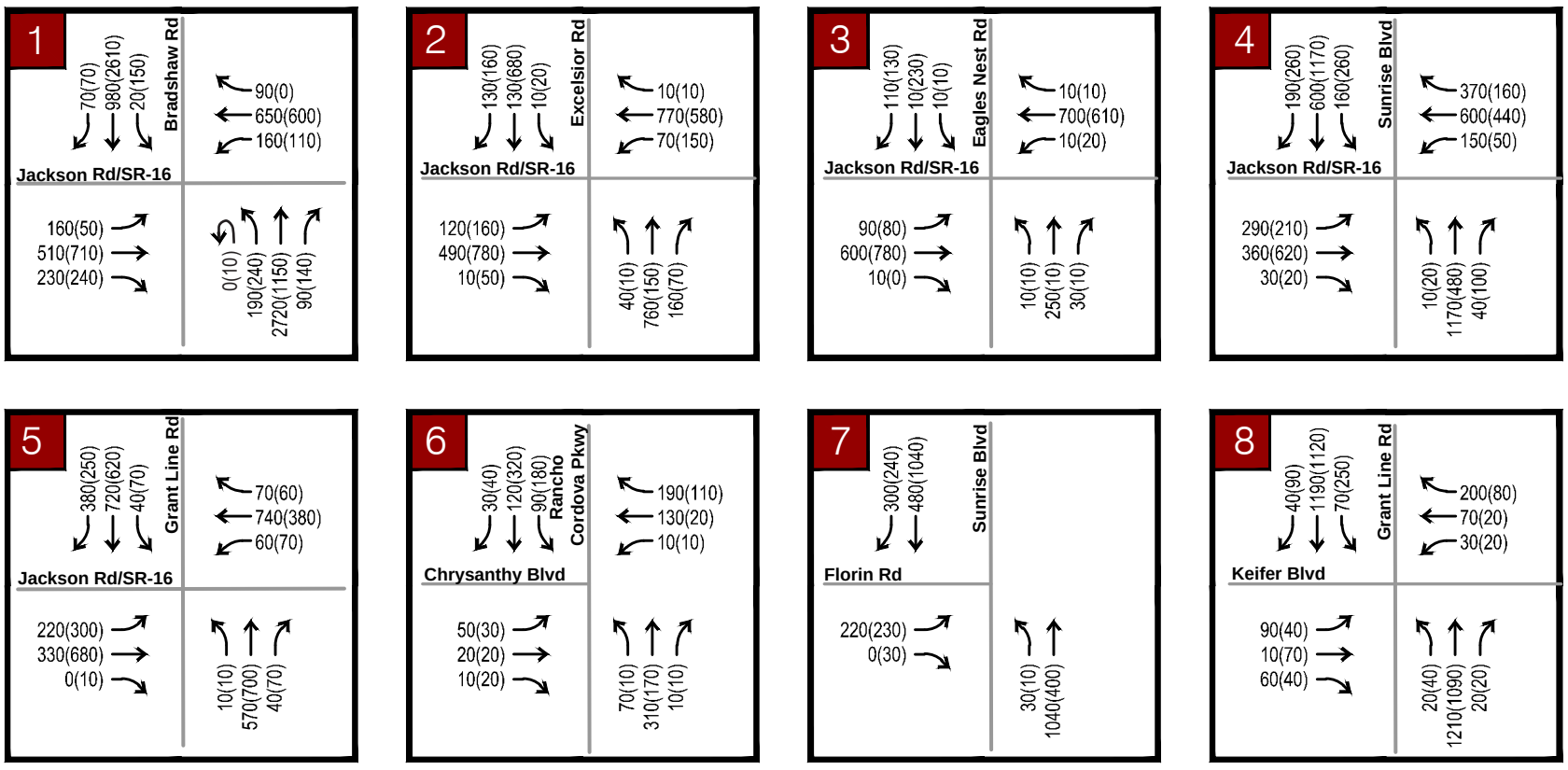

37
Americanos Blvd
Chrysanthy Blvd

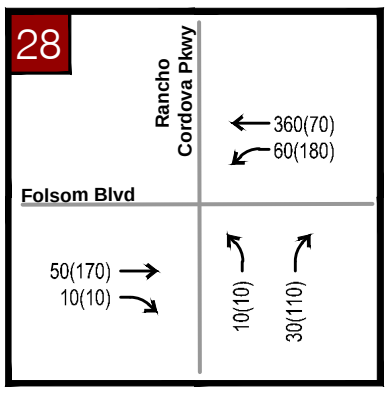

38
Americanos Blvd
Keifer Blvd

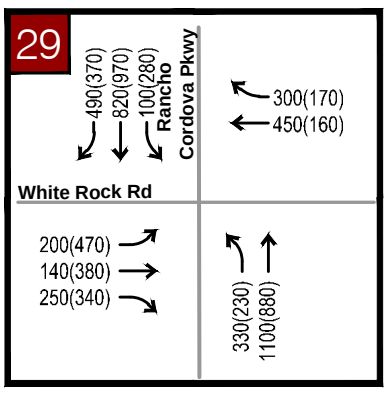

39
Sunrise Blvd
Chrysanthy Blvd

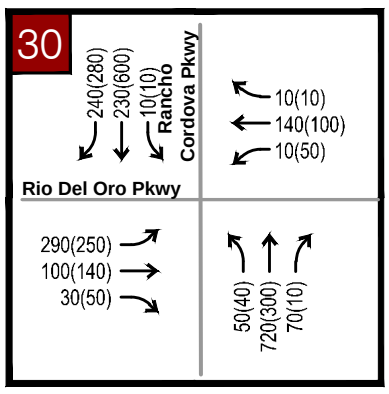

40
Grant Line Rd
Chrysanthy Blvd

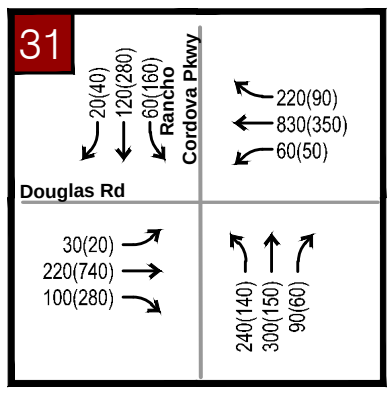

LEGEND
#
Study Intersection
Signalized Study Intersection
Stop Controlled Approach

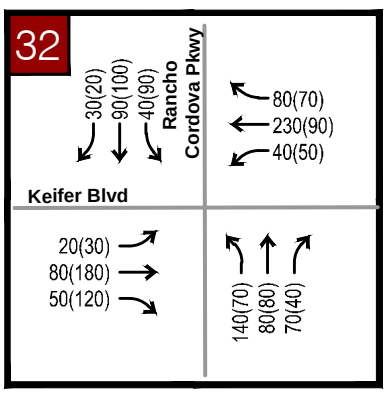

1
Bradshaw Rd
Jackson Rd/SR-16
70(70) 980(2610) 20(150)
90(0) 650(600) 160(110)
160(50) 510(710) 230(240)
0(10) 190(240) 2720(1150) 90(140)
2
Excelsior Rd
Jackson Rd/SR-16
130(160) 130(680) 10(20)
10(10) 770(580) 70(150)
120(160) 490(780) 10(50)
40(10) 760(150) 160(70)
3
Eagles Nest Rd
Jackson Rd/SR-16
110(130) 10(230) 10(10)
10(10) 700(610) 10(20)
90(80) 600(780) 10(0)
10(10) 250(10) 30(10)
4
Sunrise Blvd
Jackson Rd/SR-16
190(260) 600(1170) 160(260)
370(160) 600(440) 150(50)
290(210) 360(620) 30(20)
10(20) 1170(480) 40(100)
5
Grant Line Rd
Jackson Rd/SR-16
380(250) 720(620) 40(70)
70(60) 740(380) 60(70)
220(300) 330(680) 0(10)
10(10) 570(700) 40(70)
6
Rancho Cordova Pkwy
Chrysanthy Blvd
30(40) 120(320) 90(180)
190(110) 130(20) 10(10)
50(30) 20(20) 10(20)
70(10) 310(170) 10(10)
7
Sunrise Blvd
Florin Rd
300(240) 480(1040)
220(230) 0(30)
30(10) 1040(400)
8
Grant Line Rd
Keifer Blvd
40(90) 1190(1120) 70(250)
200(80) 70(20) 30(20)
90(40) 10(70) 60(40)
20(40) 1210(1090) 20(20)
9
Sunrise Blvd
Grant Line Rd
460(1010) 10(50) 10(10)
10(10) 730(670) 40(30)
1030(370) 620(690) 10(10)
10(10) 50(20) 20(40)
10
Zinfandel Dr
Douglas Rd
90(490) 10(140) 260(960)
1020(380) 1200(730) 30(50)
490(110) 590(940) 30(160)
80(20) 130(20) 50(30)
11
Sunrise Blvd
Douglas Rd
170(210) 800(2140) 20(370)
180(120) 1220(410) 130(170)
270(160) 280(1000) 280(650)
1020(380) 2250(930) 160(160)
12
Grant Line Rd
Douglas Rd
160(240) 800(1130) 10(0)
0(10) 10(10) 0(10)
380(260) 120(380)
410(200) 1170(860) 10(0)
13
Mather Field Rd
Folsom Blvd
70(20) 180(120) 60(70)
60(70) 740(690) 400(400)
10(80) 630(870) 350(350)
380(360) 160(330) 580(710)
14
Mather Field Rd
US-50 WB
150(310) 1120(970)
350(450) 1180(460)
1020(1240) 670(1280)
15
Mather Field Rd
US-50 EB
420(120) 1720(80)
280(270) 1220(0)
1300(820) 490(390)
16
Mather Field Rd
International Dr
180(370)
350(240) 670(1120) 10(10) 20(10)
1020(690) 750(230)
270(620) 10(20)
17
Zinfandel Dr
International Dr
450(330) 480(1180) 230(90)
70(220) 840(920) 200(320) 20(30)
10(10) 220(440) 750(900) 220(520)
20(10) 440(230) 1360(560) 220(170)
18
Zinfandel Dr
White Rock Rd
750(170) 1780(1450) 720(690)
620(420) 140(170) 130(220)
30(540) 110(260) 10(20)
50(40) 1600(1490) 140(130)
19
Zinfandel Dr
US-50 EB
220(170) 1890(1270)
50(140) 170(910)
450(690) 10(10) 910(120) 1310(1090)
1390(1900) 710(490) 10(10)
20
Zinfandel Dr
US-50 WB
480(670) 1150(1100)
170(340) 1210(660)
850(1460) 830(2050)
21
Sunrise Blvd
White Rock Rd
600(170) 900(1390) 30(220) 20(40)
180(40) 1090(690) 250(350) 0(10)
50(40) 240(530) 340(1340) 200(410)
40(70) 290(450) 1530(1070) 140(340)
22
Sunrise Blvd
Folsom Blvd
450(250) 2000(1340) 170(190)
140(210) 430(300) 140(180)
400(510) 170(340) 20(30)
30(90) 1600(1020) 120(60)
23
Sunrise Blvd
US-50 EB
440(400) 1900(1430)
1330(1260) 670(350)
1770(1610) 500(110)
24
Sunrise Blvd
US-50 WB
1670(1350) 2180(1570)
400(640) 190(270)
2780(2450) 370(390)
25
Sunrise Blvd
Zinfandel Dr
40(120) 3340(2480) 40(60)
40(60) 30(20) 30(60)
120(130) 10(40) 410(310)
30(30) 460(360) 2730(2610) 20(20)
26
Grant Line Rd
White Rock Rd
920(340) 950(1470)
330(1160) 20(20)
10(20) 1730(1130)
27
Prairie City Rd
White Rock Rd
610(760) 50(50)
110(120) 1300(990)
850(880) 1190(1430)
LEGEND
Study Intersection
AM(PM) Peak-hour Turning Movement Volumes

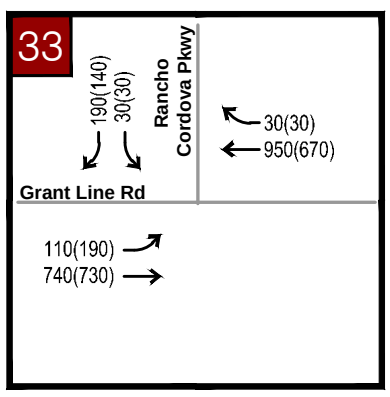


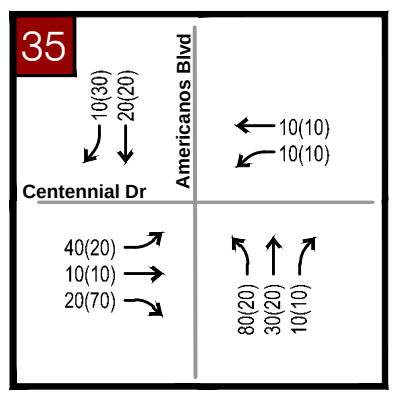


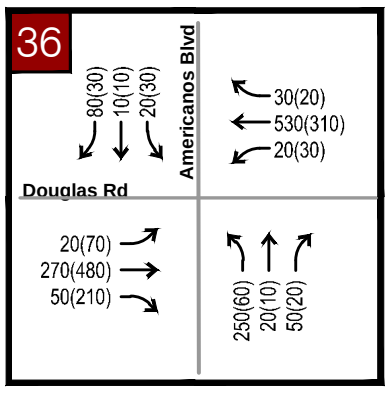


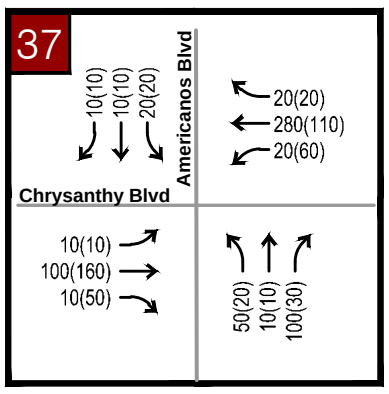


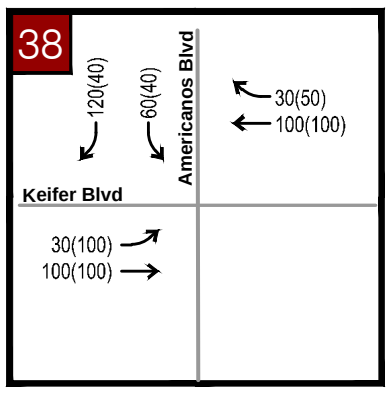


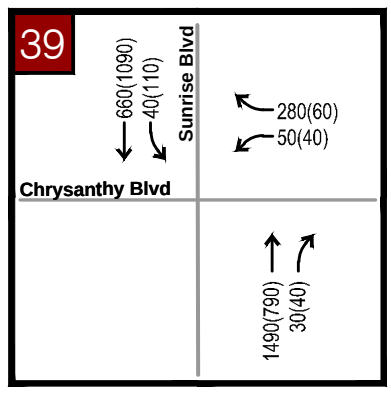


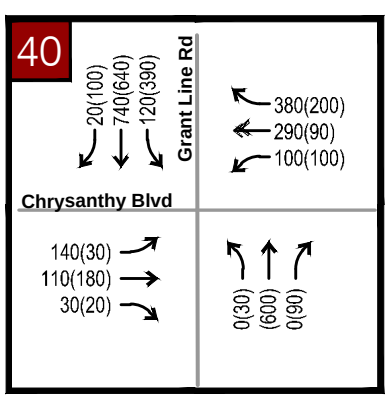












LEGEND

#	Study Intersection
AM(PM)	Peak-hour Turning Movement Volumes

CUMULATIVE PLUS PROPOSED PROJECT CONDITIONS

As previously discussed, the number of trips anticipated to be generated by the proposed project was derived using the *Trip Generation Manual, 9th Edition,* published by the Institute for Traffic Engineering (ITE). The project trips were assigned to the future roadway network based on modified SACSIM travel demand model, as provided by the City of Rancho Cordova. Using these volumes, levels of service were determined at the study facilities.

The Cumulative Scenario Project Trip distribution and trip assignment are shown in Figure 11 and Figure 12, respectively. Cumulative plus Proposed Project peak-hour turning movement volumes are presented in Figure 13. Analysis worksheets for this scenario are provided in Appendix E.

Table 10 presents the peak-hour intersection operating conditions for this analysis scenario. As indicated in Table 10, the study intersections operate from LOS A to LOS F during the AM and PM peak-hours.

Table 11 presents the roadway segment operating conditions for this analysis scenario. As indicated in Table 11, the study roadway segments operate from LOS A to LOS F.

Table 10 – Cumulative plus Proposed Project Intersection Levels of Service

#	Intersection	Traffic Control	Cummulative No Project				Cummulative Plus Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS
1	Jackson Rd/SR-16 @ Bradshaw Rd	Signal	**146.9**	**F**	**194.9**	**F**	**147.5**	**F**	**195.7**	**F**
2	Jackson Rd/SR-16 @ Excelsior Rd	Signal	66.4	E	53.8	D	67.2	E	54.8	D
3	Jackson Rd/SR-16 @ Eagles Nest Rd	Signal	11.0	B	14.1	B	11.2	B	14.4	B
4	Jackson Rd/SR-16 @ Sunrise Rd	Signal	**104.6**	**F**	53.9	D	**105.4**	**F**	55	E
5	Jackson Rd/SR-16 @ Grant Line Rd	Signal	**114.7**	**F**	**62.7**	**E**	**118.1**	**F**	65.6	E
6	Rancho Cordova Pkwy @ Chrysanthy Blvd	Signal	11.8	B	10.6	B	19.3	B	14.8	B
7	Florin Rd @ Sunrise Blvd	Signal	9.8	A	12.6	B	9.8	A	12.9	B
8	Grant Line Rd @ Kiefer Blvd	Signal	20.8	C	18.5	B	21.2	C	18.9	B
9	Grant Line Rd @ Sunrise Blvd	Signal	**150.1**	**F**	**109.2**	**F**	**151.5**	**F**	**110.6**	**F**
10	Douglas Rd @ Zinfandel Dr	Signal	**145.2**	**F**	35.3	D	**159.4**	**F**	43.8	D
11	Douglas Rd @ Sunrise Blvd	Signal	**97.1**	**F**	**107.6**	**F**	**112.3**	**F**	**109.3**	**F**
12	Douglas Rd @ Grant Line Rd	Signal	14.3	B	22.1	C	14.5	B	23.9	C
13	Mather Field Rd @ Folsom Blvd	Signal	46.3	D	**142.2**	**F**	46.5	D	143	F
14	Mather Field Rd @ US-50 Westbound Ramps	Signal	30.1	C	12.4	B	30.1	C	12.5	B
15	Mather Field Rd @ US-50 Eastbound Ramps	Signal	28.5	C	6.1	A	29.3	C	6.2	A
16	Mather Field Rd @ International Dr	Signal	6.8	A	9.6	A	6.8	A	9.7	A
17	Zinfandel Dr @ International Dr	Signal	45.3	D	**68.2**	**E**	46.1	D	**71.9**	**E**
18	Zinfandel Dr @ White Rock Rd	Signal	41.7	D	**71.2**	**E**	43.2	D	**72.9**	**E**
19	Zinfandel Dr @ US-50 Eastbound Ramps	Signal	**79.4**	**E**	**166.4**	**F**	**83.1**	**F**	**170.2**	**F**
20	Zinfandel Dr @ US-50 Westbound Ramps	Signal	13.2	B	9.8	A	13.2	B	9.8	A
21	Sunrise Blvd @ White Rock Rd	Signal	**65.5**	**E**	**120.1**	**F**	66.6	E	125.2	F
22	Sunrise Blvd @ Folsom Blvd	Signal	41.2	D	**56.5**	**E**	41.6	D	56.6	E
23	Sunrise Blvd @ US-50 Eastbound Ramps	Signal	14.0	B	11.4	B	14.0	B	11.5	B
24	Sunrise Blvd @ US-50 Westbound Ramps	Signal	11.3	B	15.4	B	11.5	B	15.6	B
25	Sunrise Blvd @ Zinfandel	Signal	**209.8**	**F**	**93.9**	**F**	**214.3**	**F**	100.6	F
26	White Rock Rd @ Grant Line Rd	Signal	11.4	B	41.6	D	**11.7**	**B**	45.8	D
27	White Rock Rd @ Prairie City Rd	Signal	**140.3**	**F**	**157.0**	**F**	**144.1**	**F**	**169.7**	**F**
28	Rancho Cordova Pkwy @ Folsom Blvd	Signal	15.4	B	42.1	D	15.4	B	42.1	D
29	Rancho Cordova Pkwy @ White Rock Rd	Signal	32.6	C	27.0	C	32.5	C	27.3	C
30	Rancho Cordova Pkwy @ Rio Del Oro Pkwy	Signal	22.1	C	20.7	C	22.3	C	20.9	C
31	Rancho Cordova Pkwy @ Douglas Rd	Signal	16.9	B	16.4	B	20.3	C	37.5	D
32	Rancho Cordova Pkwy @ Kiefer Blvd	Signal	21.9	C	19.7	B	21.6	C	19.4	B
33	Rancho Cordova Pkwy @ Grant Line Rd	Signal	8.0	A	8.0	A	8.0	A	8.0	A
34	Americanos Blvd @ International Dr	Signal	6.7	A	5.8	A	6.7	A	5.8	A
35	Americanos Blvd @ Centennial Dr	Signal	18.7	B	16.5	B	18.7	B	16.5	B
36	Americanos Blvd @ Douglas Rd	Signal	22.2	C	19.6	B	22.2	C	19.6	B
37	Americanos Blvd @ Chrysanthy Blvd	Signal	19.2	B	19.3	B	19.9	B	19.4	B
38	Americanos Blvd @ Kiefer Blvd	Signal	8.0	A	8.0	A	8	A	8.0	A
39	Chrysanthy Blvd @ Sunrise Blvd	Signal	12.4	B	4.4	A	14	B	5.0	A
40	Chrysanthy Blvd @ Grant Line Rd	Signal	7.0	A	3.2	A	8.7	A	3.9	A

Note: **Bold** represents unacceptable operations. Shaded represents a significant impact.

Table 11 – Cumulative plus Proposed Project Roadway Segment Levels of Service

ID	Roadway	Segment		Cumulative No Project					Cumulative + Jaeger Ranch Project					LOS Threshold
		From	To	Travel Lanes	Facility Type	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type	Daily Volume	Volume / Capacity Ratio	Level of Service	
1	Jackson Rd	Bradshaw Rd	Excelsior Rd	4	Arterial M	22,600	0.63	B	4	Arterial M	22,702	0.63	B	E
2	Jackson Rd	Excelsior Rd	Eagles Nest Rd	4	Arterial M	22,740	0.63	B	4	Arterial M	22,945	0.64	B	E
3	Jackson Rd	Eagles Nest Rd	Sunrise Blvd	2	Rural Hwy	21,500	0.94	E	2	Rural Hwy	21,705	0.95	E	E
4	Jackson Rd	Sunrise Blvd	Grant Line Rd	4	Arterial H	23,690	0.59	A	4	Arterial H	23,690	0.59	A	D
5	Excelsior Rd	Kiefer Blvd	Jackson Rd	2	Arterial M	8,950	0.50	A	2	Arterial M	8,950	0.50	A	E
6	Kiefer Blvd	Grant Line Rd	Jackson Rd/SR-16	2	Rural S	2,180	0.11	A	2	Rural S	2,282	0.11	B	E
7	International Dr	Zinfandel Dr	Sunrise Blvd	6	Arterial M	25,690	0.48	A	6	Arterial M	25,997	0.48	A	D
8	Mather Blvd	Femoyer St	Douglas Rd	4	Arterial M	20,870	0.58	A	4	Arterial M	22,406	0.62	B	D
9	Douglas Rd	Mather Blvd	Sunrise Blvd	4	Arterial M	37,150	**1.03**	**F**	4	Arterial M	39,915	**1.11**	**F**	D
10	Douglas Rd	Sunrise Blvd	Grant Line Rd	6	Arterial M	24,290	0.45	A	6	Arterial M	28,694	0.53	A	D
11	White Rock Rd	Zinfandel Dr	Sunrise Blvd	6	Arterial M	27,540	0.51	A	6	Arterial M	27,847	0.52	A	D
12	White Rock Rd	Sunrise Blvd	Grant Line Rd	6	Arterial M	16,960	0.31	A	6	Arterial M	16,960	0.31	A	D
13	White Rock Rd	Grant Line Rd	Prairie City Rd	4	Expressway	41,330	0.57	A	4	Expressway	42,559	0.59	A	E
14	Mather Field Rd	Folsom Blvd	US 50 WB Ramp	6	Arterial M	30,420	0.56	A	6	Arterial M	30,522	0.57	A	D
15	Mather Field Rd	US 50 WB Ramp	US 50 EB Ramp	6	Arterial M	43,380	0.80	D	6	Arterial M	44,199	0.82	D	D
16	Mather Field Rd	US 50	International Dr	6	Arterial M	56,560	**1.05**	**F**	6	Arterial M	57,379	**1.06**	**F**	D
17	Zinfandel Dr	Folsom Blvd	US 50 WB	6	Arterial M	23,730	0.44	A	6	Arterial M	23,935	0.44	A	D
18	Zinfandel Dr	US 50	White Rock Rd	6	Arterial M	72,230	**1.34**	**F**	6	Arterial M	73,152	**1.35**	**F**	D
19	Zinfandel Dr	White Rock Rd	International Rd	6	Arterial M	37,080	0.69	B	6	Arterial M	38,002	0.70	C	D
20	Zinfandel Dr	International Rd	Douglas Rd	4	Arterial M	21,600	0.60	A	4	Arterial M	22,829	0.63	B	D
21	Sunrise Blvd	US 50 WB Ramp	US 50 EB Ramp	6	Arterial M	71,160	**1.32**	**F**	6	Arterial M	71,979	**1.33**	**F**	D
22	Sunrise Blvd	US 50	Folsom Blvd	6	Arterial M	58,150	**1.08**	**F**	6	Arterial M	58,969	**1.09**	**F**	D
23	Sunrise Blvd	Folsom Blvd	White Rock Rd	6	Arterial M	41,350	0.77	C	6	Arterial M	42,374	0.78	C	D
24	Sunrise Blvd	White Rock Rd	Douglas Rd	6	Arterial M	49,190	**0.91**	**E**	6	Arterial M	51,955	**0.96**	**E**	D
25	Sunrise Blvd	Douglas Rd	Jackson Rd	4	Arterial M	45,470	**1.26**	**F**	4	Arterial M	46,085	**1.28**	**F**	D
26	Sunrise Blvd	Jackson Rd	Grant Line Rd	4	Arterial H	20,170	0.50	A	4	Arterial H	20,272	0.51	A	E
27	Grant Line Rd	White Rock Rd	Douglas Rd	4	Expressway	30,330	0.42	A	4	Expressway	31,559	0.44	A	D
28	Grant Line Rd	Douglas Rd	Jackson Rd	4	Arterial H	29,380	0.73	C	4	Arterial H	30,814	0.77	C	D
29	Grant Line Rd	Jackson Rd	Sunrise Blvd	4	Arterial H	13,480	0.34	A	4	Arterial H	13,890	0.35	A	E

Table 11b – Cumulative plus Proposed Project Intersection Levels of Service (Continued)

ID	Roadway	Segment		Cumulative No Project					Cumulative + Jaeger Ranch Project					LOS Threshold
		From	To	Travel Lanes	Facility Type	Daily Volume	Volume / Capacity Ratio	Level of Service	Travel Lanes	Facility Type	Daily Volume	Volume / Capacity Ratio	Level of Service	
30	Kiefer Blvd	Eagles Nest Rd	Sunrise Blvd	2	Arterial M	2,080	0.12	A	2	Arterial M	2,080	0.12	A	E
31	Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	4	Arterial M	15,140	0.42	A	4	Arterial M	15,140	0.42	A	D
32	Kiefer Blvd	Rancho Cordova Pkwy	Americanos Blvd	2	Arterial M	7,790	0.43	A	2	Arterial M	7,790	0.43	A	D
33	Kiefer Blvd	Americanos Blvd	Grant Line Rd	2	Arterial M	4,170	0.23	A	2	Arterial M	4,170	0.23	A	D
34	Chrysanthy Blvd	Sunrise Blvd	Rancho Cordova Pkwy	2	Arterial M	5,740	0.32	A	2	Arterial M	7,276	0.40	A	D
35	Chrysanthy Blvd	Rancho Cordova Pkwy	Americanos Blvd (within project)	2	Arterial M	6,150	0.34	A	2	Arterial M	14,651	0.81	D	D
36	Chrysanthy Blvd	Americanos Blvd	Grant Line Rd	2	Arterial M	7,070	0.39	A	2	Arterial M	8,606	0.48	A	D
37	Rancho Cordova Pkwy	Folsom Blvd	White Rock Rd	6	Arterial M	46,310	0.86	D	6	Arterial M	47,437	0.88	D	D
38	Rancho Cordova Pkwy	White Rock Rd	Rio Del Oro Pkwy	4	Arterial M	42,680	**1.19**	**F**	4	Arterial M	44,114	**1.23**	**F**	D
39	Rancho Cordova Pkwy	Rio Del Oro Pkwy	Douglas Rd	4	Arterial M	17,310	0.48	A	4	Arterial M	19,154	0.53	A	D
40	Rancho Cordova Pkwy	Douglas Rd	Chrysanthy Blvd	4	Arterial M	15,790	0.44	A	4	Arterial M	22,140	0.62	B	D
41	Rancho Cordova Pkwy	Chrysanthy Blvd	Keifer Blvd	2	Arterial M	8,350	0.46	A	4	Arterial M	8,965	0.25	A	D
42	Rancho Cordova Pkwy	Keifer Blvd	Grant Line Rd	2	Arterial M	7,190	0.40	A	2	Arterial M	7,600	0.42	A	D
43	Americanos Blvd	International Rd	Centennial Rd	2	Arterial M	4,850	0.27	A	2	Arterial M	4,850	0.27	A	D
44	Americanos Blvd	Centennial Rd	Douglas Rd	2	Arterial M	1,970	0.11	A	2	Arterial M	1,970	0.11	A	D
45	Americanos Blvd	Douglas Rd	Chrysanthy Blvd	2	Arterial M	4,850	0.27	A	2	Arterial M	5,055	0.28	A	D
46	Americanos Blvd	Chrysanthy Rd	Keifer Blvd	2	Arterial M	2,800	0.16	A	2	Arterial M	2,800	0.16	A	D

Note: **Bold** represents unacceptable operations.

NOT TO SCALE

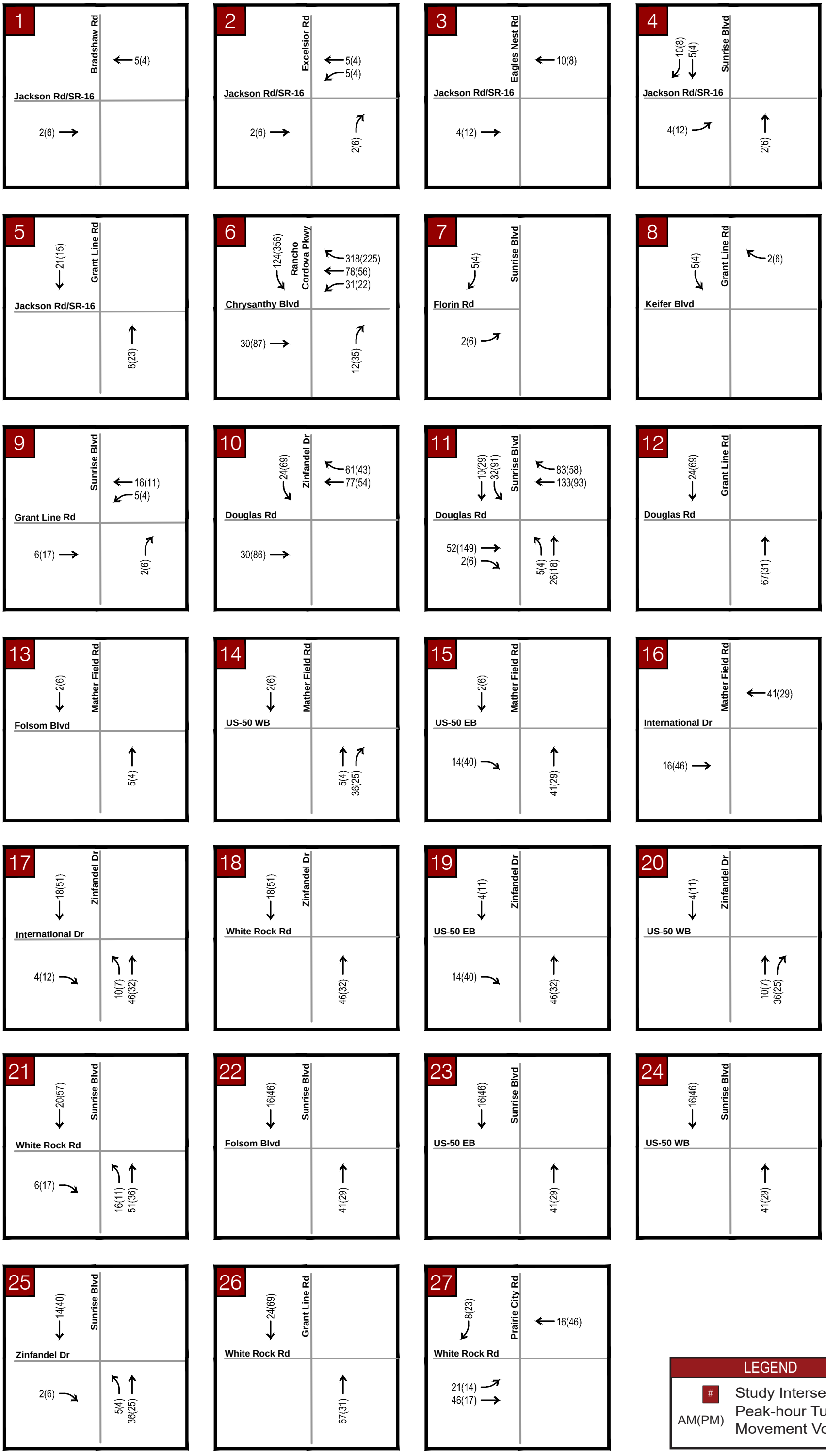
Madison Ave
Fair Oaks Blvd
Folsom Blvd
Prairie City Rd
White Rock Rd
International Dr
Rio Del Oro Pkwy
Centennial Dr
Douglas Rd
Mather Field Rd
Zinfandel Dr
Rancho Cordova Pkwy
Americanos Blvd
Chrysanthy Blvd
Keifer Blvd
Sunrise Blvd
Jackson Rd
Florin Rd
Excelsior Rd
Eagles Nest Rd
Grant Line Rd
Bradshaw Rd
CALIFORNIA 16

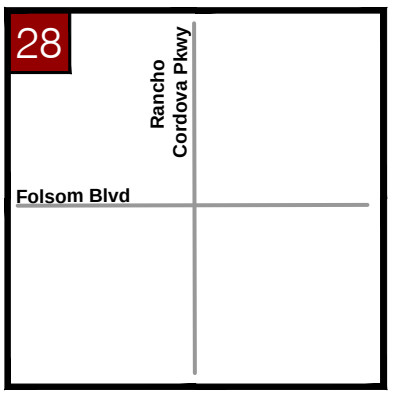
LEGEND

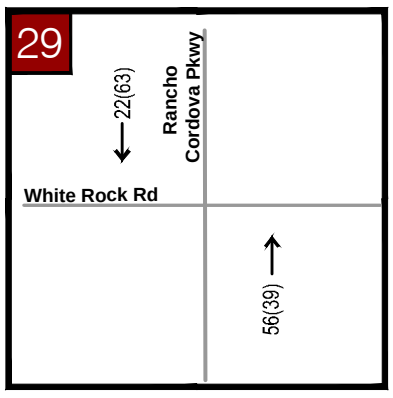
- Project Location
- # Existing (2017) Study Intersection
- # Cumulative (2040) Study Intersection
- XX% Trip Distribution Percentage
- XX% Local Trip End Percentage

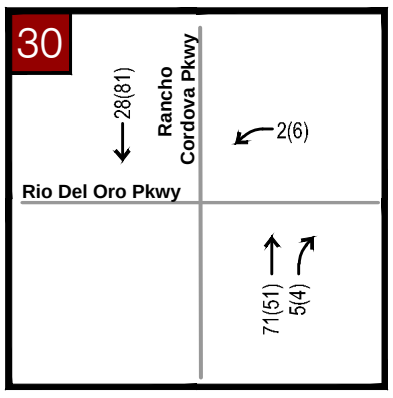
Kimley»Horn

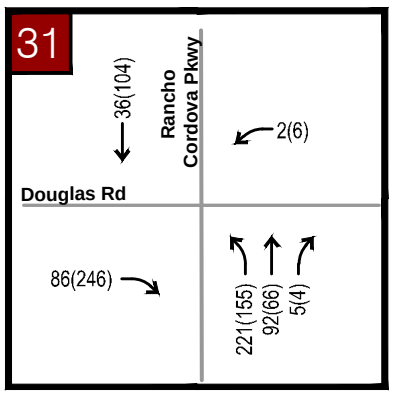
Figure 11
Cumulative (2040) Project Trip Distribution

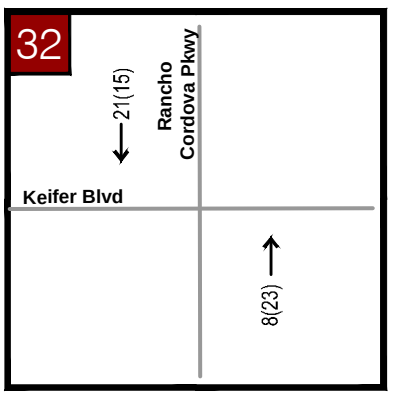

1
Bradshaw Rd
5(4)
Jackson Rd/SR-16
2(6)
2
Excelsior Rd
5(4)
5(4)
Jackson Rd/SR-16
2(6)
2(6)
3
Eagles Nest Rd
10(8)
Jackson Rd/SR-16
4(12)
4
Sunrise Blvd
10(8)
5(4)
Jackson Rd/SR-16
4(12)
2(6)
5
21(15)
Grant Line Rd
Jackson Rd/SR-16
8(23)
6
124(356)
Rancho Cordova Pkwy
318(225)
78(56)
31(22)
Chrysanthy Blvd
30(87)
12(35)
7
5(4)
Sunrise Blvd
Florin Rd
2(6)
8
5(4)
Grant Line Rd
2(6)
Keifer Blvd
9
Sunrise Blvd
16(11)
5(4)
Grant Line Rd
6(17)
2(6)
10
24(69)
Zinfandel Dr
61(43)
77(54)
Douglas Rd
30(86)
11
10(29)
32(91)
Sunrise Blvd
83(58)
133(93)
Douglas Rd
52(149)
2(6)
5(4)
26(18)
12
24(69)
Grant Line Rd
Douglas Rd
67(31)
13
2(6)
Mather Field Rd
Folsom Blvd
5(4)
14
2(6)
Mather Field Rd
US-50 WB
5(4)
36(25)
15
2(6)
Mather Field Rd
US-50 EB
14(40)
41(29)
16
Mather Field Rd
41(29)
International Dr
16(46)
17
18(51)
Zinfandel Dr
International Dr
4(12)
10(7)
46(32)
18
18(51)
Zinfandel Dr
White Rock Rd
46(32)
19
4(11)
Zinfandel Dr
US-50 EB
14(40)
46(32)
20
4(11)
Zinfandel Dr
US-50 WB
10(7)
36(25)
21
20(57)
Sunrise Blvd
White Rock Rd
6(17)
16(11)
51(36)
22
16(46)
Sunrise Blvd
Folsom Blvd
41(29)
23
16(46)
Sunrise Blvd
US-50 EB
41(29)
24
16(46)
Sunrise Blvd
US-50 WB
41(29)
25
14(40)
Sunrise Blvd
Zinfandel Dr
2(6)
5(4)
36(25)
26
24(69)
Grant Line Rd
White Rock Rd
67(31)
27
8(23)
Prairie City Rd
16(46)
White Rock Rd
21(14)
46(17)
LEGEND
#
Study Intersection
AM(PM)
Peak-hour Turning Movement Volumes

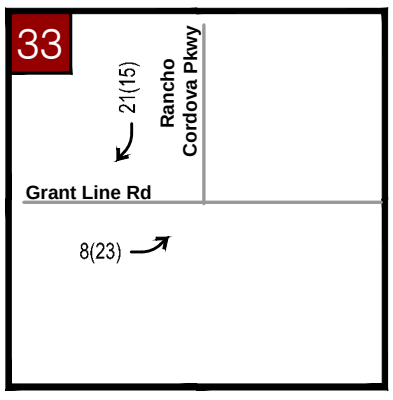

28
Rancho Cordova Pkwy
Folsom Blvd


29
22(63)
Rancho Cordova Pkwy
White Rock Rd
56(39)

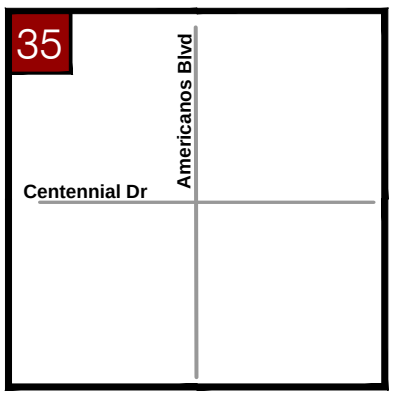

30
28(81)
Rancho Cordova Pkwy
2(6)
Rio Del Oro Pkwy
71(51)
5(4)

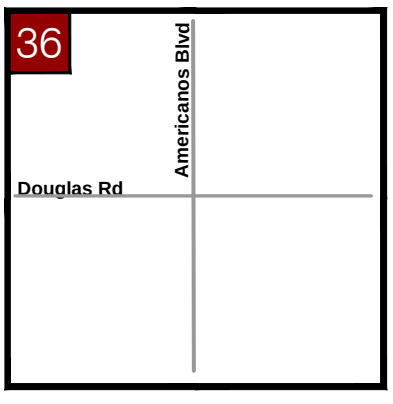

31
36(104)
Rancho Cordova Pkwy
2(6)
Douglas Rd
86(246)
221(155)
92(66)
5(4)

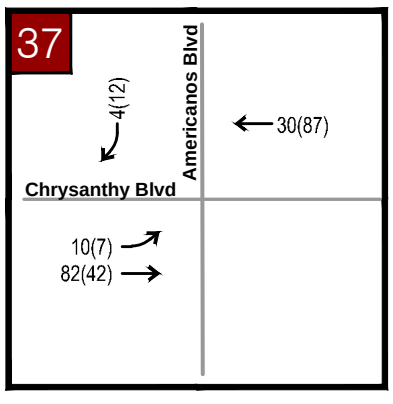

32
21(15)
Rancho Cordova Pkwy
Keifer Blvd
8(23)

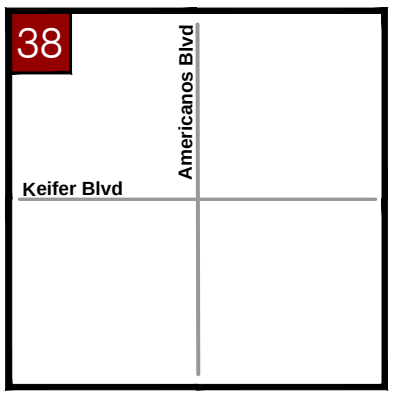

33
21(15)
Rancho Cordova Pkwy
Grant Line Rd
8(23)

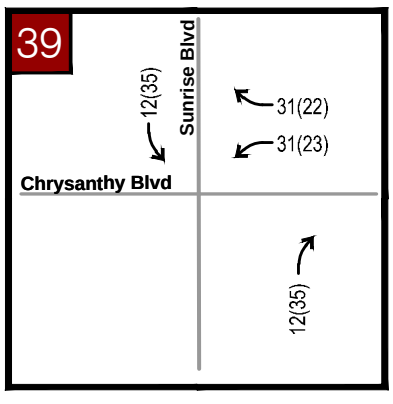
34
Americanos Blvd
International Dr

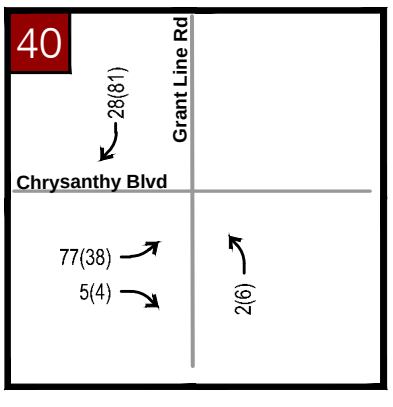

35
Americanos Blvd
Centennial Dr

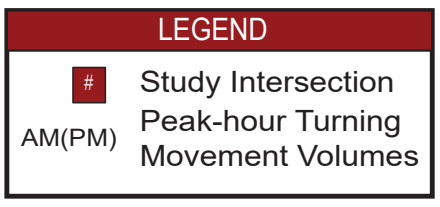

36
Americanos Blvd
Douglas Rd

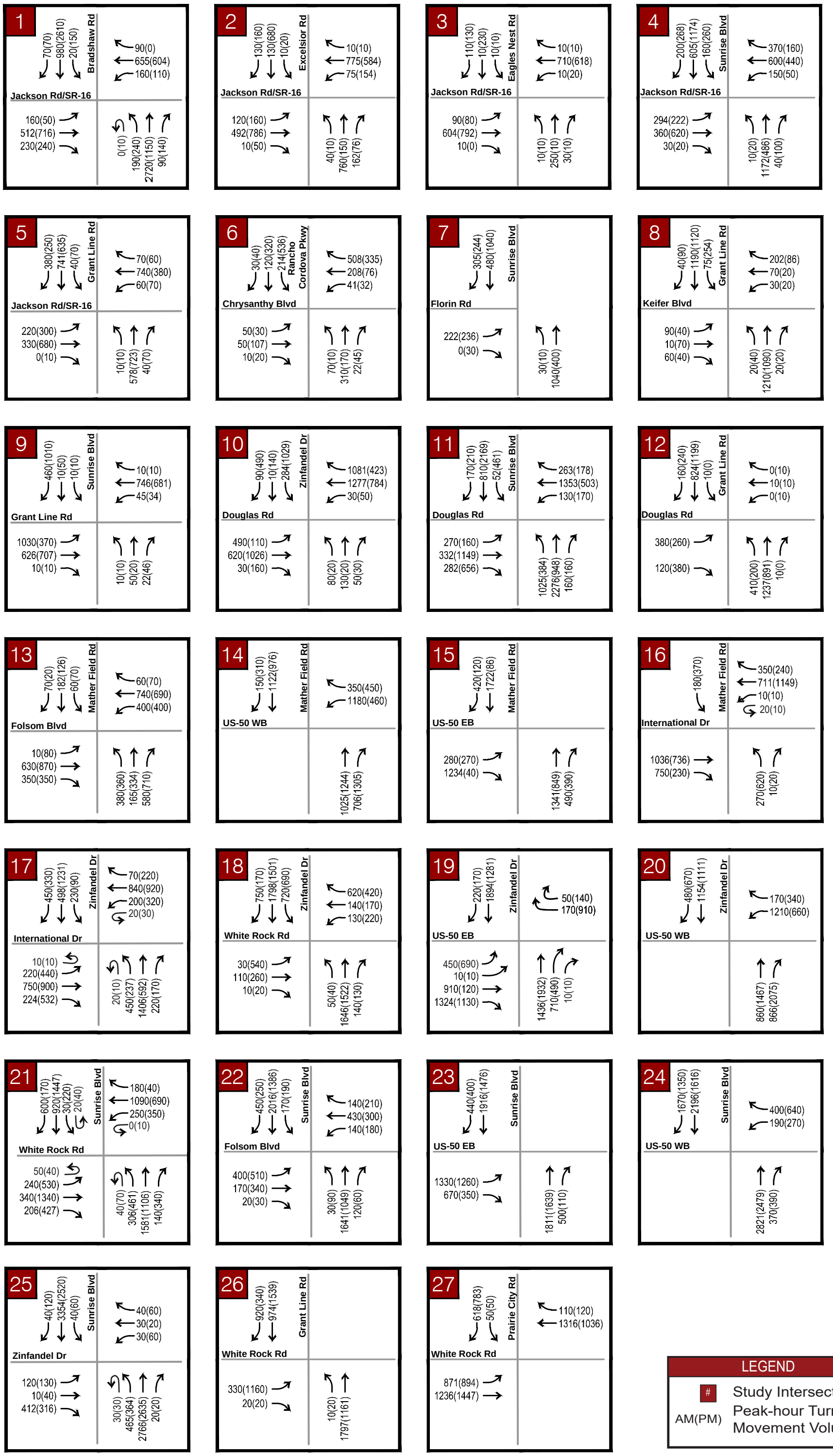

37
4(12)
Americanos Blvd
30(87)
Chrysanthy Blvd
10(7)
82(42)

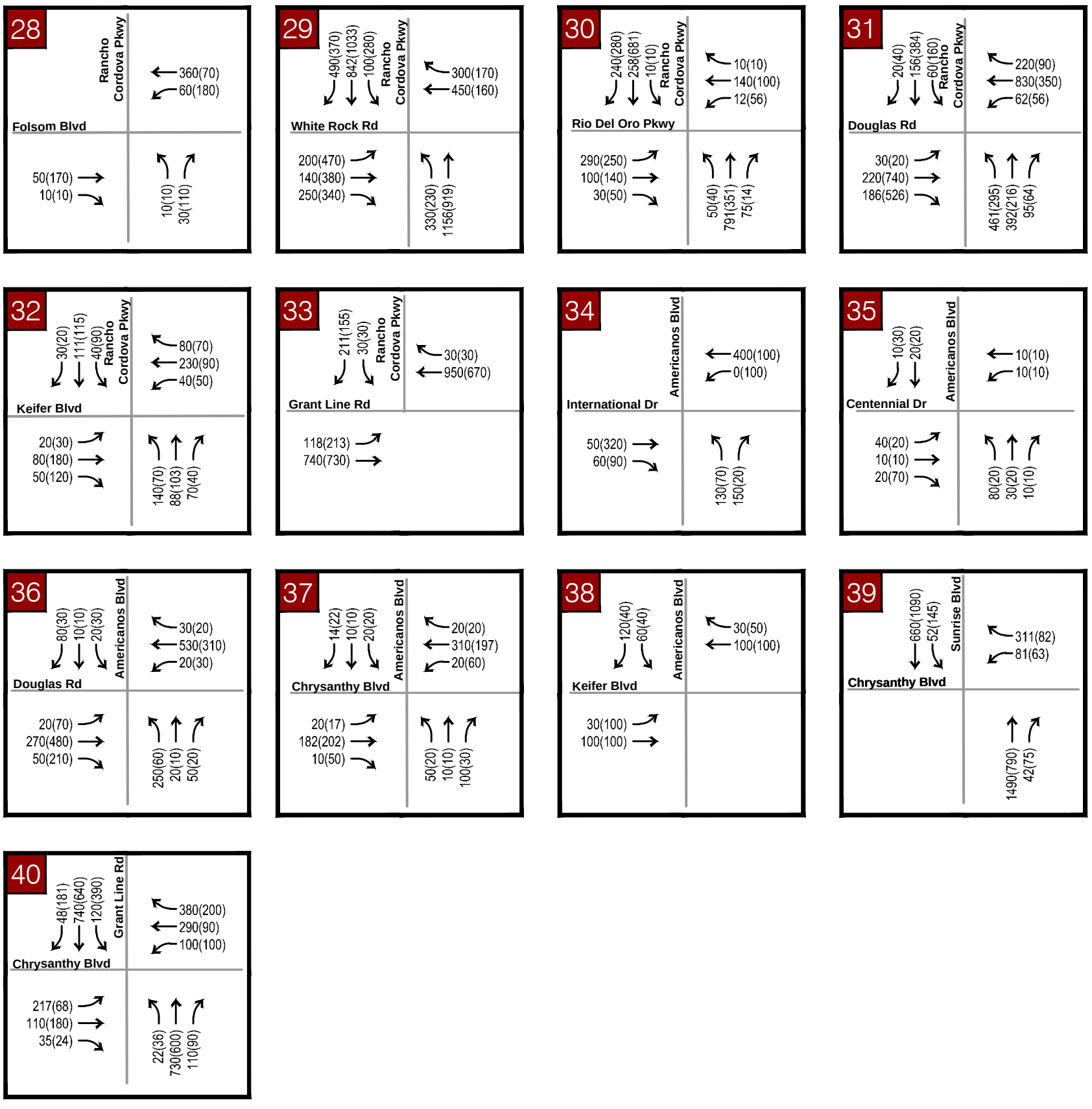

38
Americanos Blvd
Keifer Blvd


39
12(35)
Sunrise Blvd
31(22)
31(23)
Chrysanthy Blvd
12(35)


40
28(81)
Grant Line Rd
Chrysanthy Blvd
77(38)
5(4)
2(6)


LEGEND
#
Study Intersection
AM(PM)
Peak-hour Turning Movement Volumes


1
Bradshaw Rd
Jackson Rd/SR-16
70(70) 980(2610) 20(150)
90(0) 655(604) 160(110)
160(50) 512(716) 230(240)
0(10) 190(240) 2720(1150) 90(140)
2
Excelsior Rd
Jackson Rd/SR-16
130(160) 130(680) 10(20)
10(10) 775(584) 75(154)
120(160) 492(786) 10(50)
40(10) 760(150) 162(76)
3
Eagles Nest Rd
Jackson Rd/SR-16
110(130) 10(230) 10(10)
10(10) 710(618) 10(20)
90(80) 604(792) 10(0)
10(10) 250(10) 30(10)
4
Sunrise Blvd
Jackson Rd/SR-16
200(268) 605(1174) 160(260)
370(160) 600(440) 150(50)
294(222) 360(620) 30(20)
10(20) 1172(486) 40(100)
5
Grant Line Rd
Jackson Rd/SR-16
380(250) 741(635) 40(70)
70(60) 740(380) 60(70)
220(300) 330(680) 0(10)
10(10) 578(723) 40(70)
6
Rancho Cordova Pkwy
Chrysanthy Blvd
30(40) 120(320) 214(536)
508(335) 208(76) 41(32)
50(30) 50(107) 10(20)
70(10) 310(170) 22(45)
7
Sunrise Blvd
Florin Rd
305(244) 480(1040)
222(236) 0(30)
30(10) 1040(400)
8
Grant Line Rd
Keifer Blvd
40(90) 1190(1120) 75(254)
202(86) 70(20) 30(20)
90(40) 10(70) 60(40)
20(40) 1210(1090) 20(20)
9
Sunrise Blvd
Grant Line Rd
460(1010) 10(50) 10(10)
10(10) 746(681) 45(34)
1030(370) 626(707) 10(10)
10(10) 50(20) 22(46)
10
Zinfandel Dr
Douglas Rd
90(490) 10(140) 284(1029)
1081(423) 1277(784) 30(50)
490(110) 620(1026) 30(160)
80(20) 130(20) 50(30)
11
Sunrise Blvd
Douglas Rd
170(210) 810(2169) 52(461)
263(178) 1353(503) 130(170)
270(160) 332(1149) 282(656)
1025(384) 2276(948) 160(160)
12
Grant Line Rd
Douglas Rd
160(240) 824(1199) 10(0)
0(10) 10(10) 0(10)
380(260) 120(380)
410(200) 1237(891) 10(0)
13
Mather Field Rd
Folsom Blvd
70(20) 182(126) 60(70)
60(70) 740(690) 400(400)
10(80) 630(870) 350(350)
380(360) 165(334) 580(710)
14
Mather Field Rd
US-50 WB
150(310) 1122(976)
350(450) 1180(460)
1025(1244) 706(1305)
15
Mather Field Rd
US-50 EB
420(120) 1722(86)
280(270) 1234(40)
1341(849) 490(390)
16
Mather Field Rd
International Dr
180(370)
350(240) 711(1149) 10(10) 20(10)
1036(736) 750(230)
270(620) 10(20)
17
Zinfandel Dr
International Dr
450(330) 498(1231) 230(90)
70(220) 840(920) 200(320) 20(30)
10(10) 220(440) 750(900) 224(532)
20(10) 450(237) 1406(592) 220(170)
18
Zinfandel Dr
White Rock Rd
750(170) 1798(1501) 720(690)
620(420) 140(170) 130(220)
30(540) 110(260) 10(20)
50(40) 1646(1522) 140(130)
19
Zinfandel Dr
US-50 EB
220(170) 1894(1281)
50(140) 170(910)
450(690) 10(10) 910(120) 1324(1130)
1436(1932) 710(490) 10(10)
20
Zinfandel Dr
US-50 WB
480(670) 1154(1111)
170(340) 1210(660)
860(1467) 866(2075)
21
Sunrise Blvd
White Rock Rd
600(170) 920(1447) 30(220) 20(40)
180(40) 1090(690) 250(350) 0(10)
50(40) 240(530) 340(1340) 206(427)
40(70) 306(461) 1581(1106) 140(340)
22
Sunrise Blvd
Folsom Blvd
450(250) 2016(1386) 170(190)
140(210) 430(300) 140(180)
400(510) 170(340) 20(30)
30(90) 1641(1049) 120(60)
23
Sunrise Blvd
US-50 EB
440(400) 1916(1476)
1330(1260) 670(350)
1811(1639) 500(110)
24
Sunrise Blvd
US-50 WB
1670(1350) 2196(1616)
400(640) 190(270)
2821(2479) 370(390)
25
Sunrise Blvd
Zinfandel Dr
40(120) 3354(2520) 40(60)
40(60) 30(20) 30(60)
120(130) 10(40) 412(316)
30(30) 465(364) 2766(2635) 20(20)
26
Grant Line Rd
White Rock Rd
920(340) 974(1539)
330(1160) 20(20)
10(20) 1797(1161)
27
Prairie City Rd
White Rock Rd
618(783) 50(50)
110(120) 1316(1036)
871(894) 1236(1447)
LEGEND
#
Study Intersection
AM(PM)
Peak-hour Turning Movement Volumes



LEGEND

#	Study Intersection
AM(PM)	Peak-hour Turning Movement Volumes

IMPACTS AND MITIGATION

Regulatory Setting and Thresholds of Significance

Sacramento County

The Circulation Element of the latest County of Sacramento General Plan[6] includes the following relevant provisions:

> *CI-9. Plan and design the roadway system in a manner that meets Level of Service (LOS) D on rural roadways and LOS E on urban roadways, unless it is infeasible to implement project alternatives or mitigation measures that would achieve LOS D on rural roadways or LOS E on urban roadways. The urban areas are those areas within the Urban Service Boundary as shown in the Land Use Element of the Sacramento County General Plan. The areas outside the Urban Service Boundary are considered rural.*
>
> *CI-35. The applicant/developer of land development projects shall be responsible to install bicycle and pedestrian facilities in accordance with Sacramento County Improvement Standards and may be responsible to participate in the fair share funding of regional multi-use trails identified in the Sacramento County Bicycle Master Plan.*

Sacramento County's traffic study guidelines[1] provide guidelines for the implementation of the General Plan provisions: "The County defines the minimum acceptable operation level for its roadways and intersections to be LOS D for rural areas and LOS E for urban areas. The urban areas are those areas within the Urban Service Boundary as shown in the Land Use Element of the Sacramento County General Plan. The areas outside the Urban Service Boundary are considered rural."

All of the Sacramento County study facilities are within the Urban Services Boundary. Therefore, LOS E is the minimum acceptable LOS for all County facilities.

Thresholds of Significance

Roadways/Signalized Intersections: A project is considered to have a significant effect if it would:

- result in a roadway or a signalized intersection operating at an acceptable LOS to deteriorate to an unacceptable LOS; or
- increase the V/C ratio by more than 0.05 at a roadway or at a signalized intersection that is operating at an unacceptable LOS without the project.

Unsignalized Intersections: A project is considered to have a significant effect if it would:

- result in an unsignalized intersection movement/approach operating at an acceptable LOS to deteriorate to an unacceptable LOS, and also cause the intersection to meet a traffic signal warrant; or
- for an unsignalized intersection that meets a signal warrant, increase the delay by more than 5 seconds at a movement/approach that is operating at an unacceptable LOS without the project.

[6] *Sacramento County General Plan of 2005-2030,* Sacramento County Community Planning & Development Department, November 9, 2011.

City of Rancho Cordova

The Circulation Element of the City of Rancho Cordova's General Plan 2030 includes the following relevant provisions:

> *Policy C.1.2 - Seek to maintain operations on all roadways and intersections at Level of Service D or better at all times, including peak travel times, unless maintaining this Level of Service would, in the City's judgment, be infeasible and/or conflict with the achievement of other goals. Congestion in excess of Level of Service D may be accepted in these cases, provided that provisions are made to improve traffic flow and/or promote non-vehicular transportation as part of a development project or a City-initiated project. Please see Policy C.1.3 for additional policy guidance related to this issue.*
>
> *Examples of system improvements which may be accepted when Level of Service D cannot be maintained include the following, where the improvement or funding is in excess of standard City requirements:*
> *• Development of on- or off-street bicycle or pedestrian circulation (not including sidewalks that are constructed as part of roadway improvements);*
> *• Providing or funding public transportation facilities or services;*
> *• Other features as determined appropriate by the City.*
>
> *Policy C.1.3 - Recognize that regional traffic beyond the City's control, as well as circulation system decisions made prior to incorporation or by other agencies, will make it infeasible to achieve the City's desired Level of Service on all roadways. Subject development projects which affect these roadways to the provisions of Policy C.1.2 to provide offsetting improvements to the vehicular and/or non-vehicular transportation system.*

Impacts and Mitigation

Existing (2017) plus Proposed Project Conditions

As reflected in Table 6 and Table 7, the addition of the proposed project results in five (5) significant impacts. Analysis worksheets for the mitigations for this scenario are provided in Appendix F. The following is a discussion of each impact and its associated mitigation.

Intersection Impacts:

I1. *Intersection #3, Jackson Road @Eagles Nest Road*
As shown in Table 6, this intersection operates at unacceptable LOS F during the AM and PM peak-hours without the project, and the project adds more than 5 seconds of delay to the northbound left turn movement during the AM and PM peak-hours. ***This is a significant impact***.

I2. *Intersection #9, Grant Line Road @ Sunrise Boulevard*
As shown in Table 6, this intersection operates at unacceptable LOS F during the AM peak-hour without the project, and the project adds more than 5 seconds of delay to the intersection. ***This is a significant impact***.

I3. *Intersection #11, Douglas Road @ Sunrise Boulevard*
As shown in Table 6, this intersection operates at LOS D during the PM peak-hour without the project, and the project results in LOS E. ***This is a significant impact***.

I4. Intersection #25, Sunrise Boulevard @ Zinfandel Drive
As shown in Table 6, this intersection operates at unacceptable LOS E during the PM peak-hour without the project, and the project adds more than 5 seconds of delay to the intersection. ***This is a significant impact***.

Roadway Segment Impacts:

I5. Roadway Segment #22, Sunrise Boulevard between US-50 and Folsom Boulevard
As shown in Table 7, this roadway segment operates at unacceptable LOS E without the project and the project increases the volume-to-capacity ratio by more than 0.05. ***This is a significant impact.***

Mitigations:

M1. Intersection #3, Jackson Road and Eagles Nest Road
The significant impact at this intersection during the AM and PM peak-hours can be mitigated by converting the intersection from side street stop controlled to signalized. As shown in Table 12, with this mitigation the intersection operates at LOS B during the AM and PM peak-hours. Therefore, ***this impact is less than significant***. However, the identified improvement falls under the jurisdiction of the County; therefore, neither the City nor the project applicant would have control over their timing or implementation. Thus, this impact would remain ***significant and unavoidable***. If the County allows the improvement to move forward, the impact would be classified as significant in the short term but eventually would be reduced to a less-than-significant level in the long term.

M2. Intersection #9, Grant Line Road @ Sunrise Boulevard
The significant impact at this intersection during the AM peak-hour can be mitigated by changing the southbound approach to include a right turn lane and an all-purpose lane. This mitigation includes restriping the southbound approach to move the bicycle lane from its existing location between the two travel lanes to the right shoulder and add hatching for the right turns, consistent with the Optional Through Right and Right-Turn-Only lane configuration included in Figure 9C-4a (CA) of the CaMUTCD[7]. As shown in Table 12, this mitigation measure results in the intersection operating at LOS D or better during the AM and PM peak-hours. Therefore, ***this impact is less than significant***. However, the identified improvement falls under the jurisdiction of the County; therefore, neither the City nor the project applicant would have control over their timing or implementation. Thus, this impact would remain ***significant and unavoidable***. If the County allows the improvement to move forward, the impact would be classified as significant in the short term but eventually would be reduced to a less-than-significant level in the long term.

M3. Intersection #11, Douglas Road @ Sunrise Boulevard
The significant impact at this intersection during the PM peak-hour can be mitigated through signal timing optimization and the addition of a right-turn overlap signal phase for the eastbound right-turn, overlapping with the northbound left-turn movement. As shown in Table 12, this mitigation measure results in the intersection operating at LOS D or better during the AM and PM peak-hours. Therefore, ***this impact is less than significant***.

[7] California MUTCD 2014 Edition. Chapter 9C-Markings: Part 9 Traffic Control for Bicycle Facilities. November 2014

M4. Intersection #25, Sunrise Boulevard @ Zinfandel Drive

The significant impact at this intersection during the PM peak-hour can be mitigated by restriping the eastbound and westbound approaches to include a left turn lane and through-right lane. As shown in Table 12, this mitigation measure results in the intersection operating at LOS D or better during the AM and PM peak-hours. Therefore, ***this impact is less than significant***

M5. Roadway Segment #22, Sunrise Boulevard between US-50 and Folsom Boulevard

This roadway segment is an existing deficiency and is currently has the maximum number of lanes for the General Plan designation. Therefore, there is no feasible construction mitigation and until an alternative mitigation is identified, ***this impact is significant and unavoidable.***

Table 12 – Intersection Levels of Service – Existing (2017) plus Proposed Project Mitigated Conditions

#	Intersection	Existing Plus Project				Existing Plus Project Mitigated			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS
3	Jackson Rd/SR-16 @ Eagles Nest Rd	**18.1 (95.3 NB)**	**F**	**18.9 (*ECL NB)**	**F**	19.5	B	15.7	B
9	Grant Line Rd @ Sunrise Blvd	**122.2**	**F**	55	D	37.6	D	25.4	C
11	Douglas Rd @ Sunrise Blvd	34.4	C	**59.3**	**E**	34.0	C	48.9	D
25	Sunrise Blvd @ Zinfandel Dr	117.2	F	**68**	**E**	88.7	F	50.9	D

Cumulative plus Proposed Project Conditions

As reflected in Table 10 and Table 11, the addition of the proposed project results in five (5) significant impacts. Analysis worksheets for the mitigations for this scenario are provided in Appendix F. The following is a discussion of each impact and its associated mitigation.

Intersection Impacts:

I6. Intersection #10, Douglas Road @ Zinfandel Drive

As shown in Table 10, this intersection operates at unacceptable LOS F during the AM peak-hour without the project, and the project adds more than 5 seconds of delay to the intersection during the AM peak-hour. ***This is a significant impact***.

I7. Intersection #11, Douglas Road @ Sunrise Boulevard

As shown in Table 10, this intersection operates at unacceptable LOS F during the AM peak-hour without the project, and the project adds more than 5 seconds of delay to the intersection during the AM peak-hour. ***This is a significant impact***.

I8. Intersection #27, White Rock Road @Prairie City Road

As shown in Table 10, this intersection operates at unacceptable LOS F during the AM and PM peak-hour without the project, and the project adds more than 5 seconds of delay to the intersection during the PM peak-hour. ***This is a significant impact***.

Roadway Segment Impacts:

I9. Roadway Segment #24, Sunrise Boulevard between White Rock Road and Douglas Road

As shown in Table 11, this roadway segment operates at unacceptable LOS E during without the project, and the project increases the volume to capacity ration by more than 0.05. ***This is a significant impact***.

Mitigations:

M6. Intersection #10, Douglas Road @ Zinfandel Drive

The significant impact at this intersection during the AM peak-hour can mitigated by the conversion of the westbound right turn from permitted to a free right turn with a receiving lane. As shown in Table 13, this mitigation measure results in the intersection operating at LOS D during the AM and PM peak-hours. Therefore, ***this impact is less than significant***. However, the identified improvement falls under the jurisdiction of the County; therefore, neither the City nor the project applicant would have control over their timing or implementation. Thus, this impact would remain ***significant and unavoidable***. If the County allows the improvement to move forward, the impact would be classified as significant in the short term but eventually would be reduced to a less-than-significant level in the long term.

M7. Intersection #11, Douglas Road @ Sunrise Boulevard

The significant impact at this intersection during the AM peak-hour cannot be feasibly mitigated. The intersection of Douglas Road and Sunrise Boulevard is fully built out according to the City's General Plan. As shown in Table 13, signal timing optimization is not enough to mitigate the project impacts to acceptable conditions. Therefore, ***this impact is significant and unavoidable***. However, as described in the Rio Del Oro Specific Plan DEIR/DEIS[8], there is potential to improve conditions through additional connectivity along Sunrise Boulevard and further build out of the City's General Plan network.

M8. Intersection #27, White Rock Road @ Prairie City Road

The significant impact at this intersection during the PM peak-hour can be mitigated with the addition of a second southbound right-turn lane and the addition of a right-turn overlap signal phase for the southbound right-turn. As shown in Table 13, this mitigation measure results in the intersection operating at LOS D during the AM and PM peak-hours. Therefore, ***this impact is less than significant***.

M9.Roadway Segment #24, Sunrise Boulevard between White Rock Road and Douglas Road

This roadway segment operates unacceptably without the project and is currently has the maximum number of lanes for the General Plan designation. Therefore, there is no feasible construction mitigation and the City will need to designate an alternative mitigation. Until that alternative mitigation is identified, ***this impact is significant and unavoidable.*** However, as described in the Rio Del Oro Specific Plan DEIR/DEIS[8], there is potential to improve conditions through additional connectivity along Sunrise Boulevard and further build out of the City's General Plan network.

Table 13 – Intersection Levels of Service – Cumulative plus Proposed Project Mitigated Conditions

#	Intersection	Cummulative Plus Project				Cummulative Plus Project Mitigated			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS
10	Douglas Rd @ Zinfandel Dr	**159.4**	**F**	43.8	D	50.0	D	43.0	D
11	Douglas Rd @ Sunrise Blvd	**112.3**	**F**	**109.3**	**F**	**93.4**	**F**	**108.2**	**F**
27	White Rock Rd @ Prairie City Rd	**144.1**	**F**	**169.7**	**F**	36.3	D	36.2	D

[8] Rio del Oro Specific Plan Project DEIR/DEIS. City of Rancho Cordova and USACE. April, 2008

CONCLUSIONS

Significant findings of this study include:

- The proposed project is estimated to generate 10,266 new daily trips, with 721 new trips occurring during the AM peak-hour, and 934 new trips occurring during the PM peak-hour.
- The addition of the proposed project to the Existing (2017) Conditions results in a significant impact at four (4) study intersections and one (1) roadway segment. With the application of mitigation measures recommended herein, the impacts to intersections can be mitigated to be *less than significant*. The proposed project results in one significant impact to the roadway segments for Existing (2017) Conditions, as defined by the applicable jurisdictions.
- The addition of the proposed project to Cumulative (2040) Conditions results in a significant impact at three (3) intersections and two (2) roadway segments. Two of the impacts to intersections would be mitigated to less than significant. One location does not have a feasible mitigation. One of the impacts to the roadway segments would be mitigated to less than significant and the proposed project results in one significant impact to the roadway segments for Cumulative (2040) Conditions, as defined by the applicable jurisdictions.

Appendix A

Traffic Count Data Sheets

Prepared by National Data & Surveying Services

Bradshaw Rd & Jackson Rd/SR-16

Peak Hour Turning Movement Count

ID: 17-07693-001
City: Sacramento

Day: Thursday
Date: 09/28/2017

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	04:00 PM - 06:00 PM

Bradshaw Rd — SOUTHBOUND

AM	294	643	61	8	2090	AM
NOON	0	0	0	0	0	NOON
PM	153	1711	198	4	1008	PM

Jackson Rd/SR-16 — EASTBOUND

AM	NOON	PM	
803	0	534	⇦
0	0	0	↶ 0
311	0	168	↱ 0
249	0	421	→ 0
90	0	198	↴ 0
AM	NOON	PM	

Jackson Rd/SR-16 — WESTBOUND

PM	NOON	AM	
86	0	127	0 ↰
275	0	319	0 ←
38	0	15	0 ↙
0	0	0	0 ↲
643	0	333	⇨
PM	NOON	AM	

CONTROL

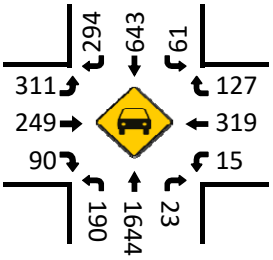
0

TEV	3975 AM	0 NOON	4143 PM
PHF	0.98		0.98

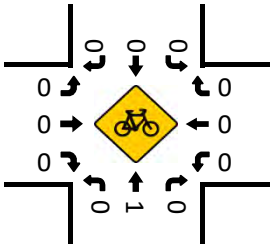
Bradshaw Rd — NORTHBOUND

PM	1958	11	106	750	24	PM
NOON	0	0	0	0	0	NOON
AM	749	1	190	1644	23	AM

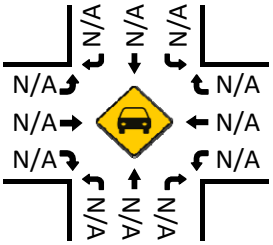
Total Vehicles (AM)



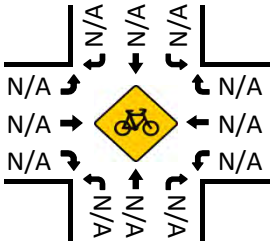
Bikes (AM)



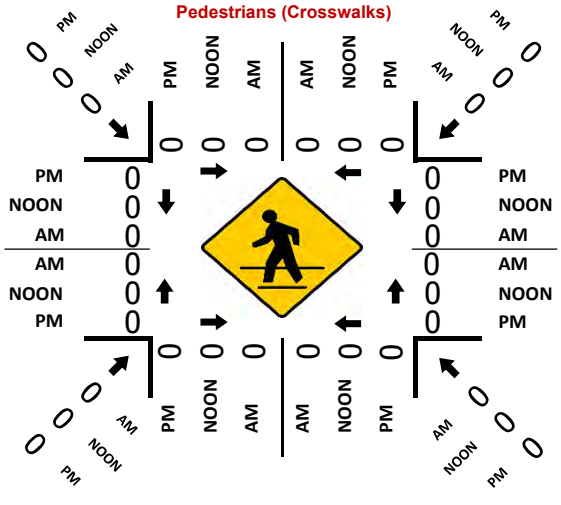
Total Vehicles (Noon)



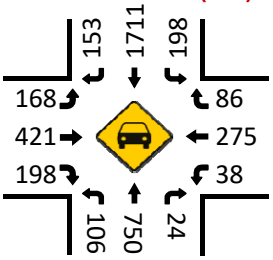
Bikes (NOON)



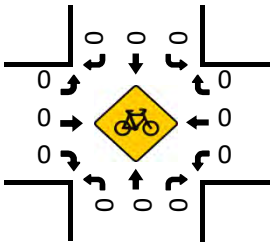
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Excelsior Rd & Jackson Rd/SR-16

Peak Hour Turning Movement Count

ID: 17-07693-002
City: Sacramento

Day: Thursday
Date: 09/28/2017

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
04:45 PM - 05:45 PM	04:00 PM - 06:00 PM

Excelsior Rd — SOUTHBOUND

AM	47	75	4	0	677	AM
NOON	0	0	0	0	0	NOON
PM	67	537	11	0	163	PM

Jackson Rd/SR-16 — EASTBOUND

AM	NOON	PM	
486	0	391	
0	0	0	0
45	0	71	0
217	0	450	0
21	0	78	0

CONTROL

0

	1721	0	1846
TEV	AM	NOON	PM
PHF	0.95		0.94

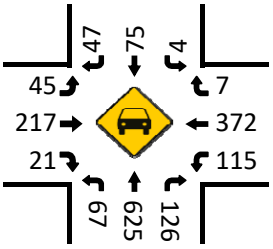
Jackson Rd/SR-16 — WESTBOUND

PM	NOON	AM	
5	0	7	0
295	0	372	0
126	0	115	0
0	0	0	0
551	0	347	

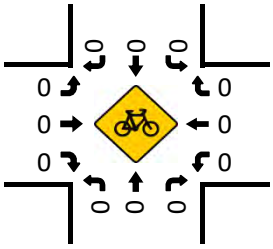
Excelsior Rd — NORTHBOUND

PM	741	0	29	87	90	PM
NOON	0	0	0	0	0	NOON
AM	211	0	67	625	126	AM

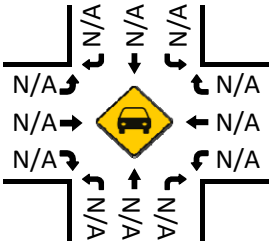
Total Vehicles (AM)



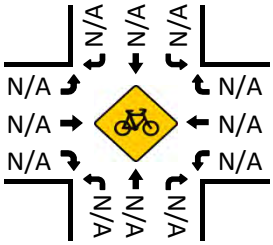
Bikes (AM)



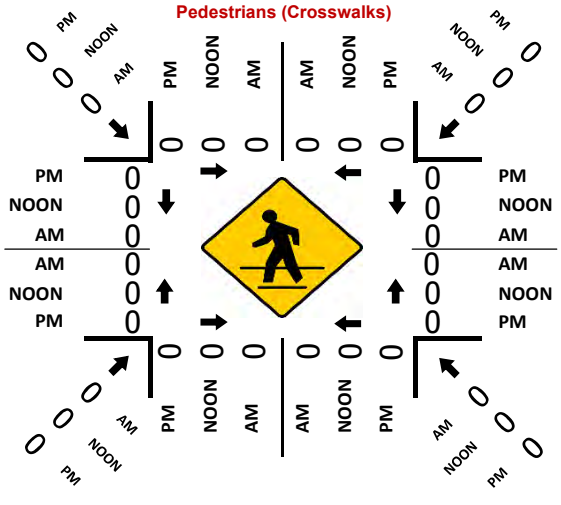
Total Vehicles (Noon)



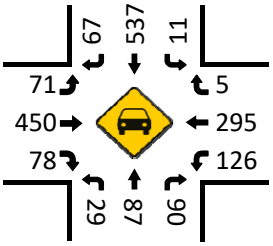
Bikes (NOON)



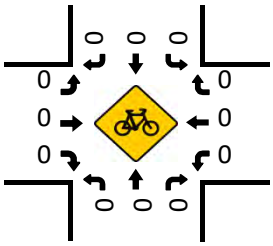
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Eagles Nest Rd & Jackson Rd/SR-16

Peak Hour Turning Movement Count

ID: 17-07693-003
City: Sacramento

Day: Thursday
Date: 09/28/2017

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

Eagles Nest Rd — SOUTHBOUND

AM	12	2	0	0	202	AM
NOON	0	0	0	0	0	NOON
PM	115	158	0	0	27	PM

Jackson Rd/SR-16 — EASTBOUND

AM	NOON	PM	
470	0	426	⇦
0	0	0	↶ 0
59	0	19	↱ 0
321	0	539	→ 0
4	0	0	↳ 0
AM	NOON	PM	

Jackson Rd/SR-16 — WESTBOUND

PM	NOON	AM	
2	0	1	0 ↰
307	0	449	0 ←
15	0	5	0 ↰
0	0	0	0 ↶
540	0	352	⇨
PM	NOON	AM	

CONTROL

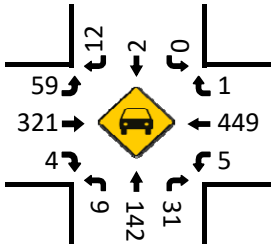
0

TEV	1035 AM	0 NOON	1166 PM
PHF	0.92		0.96

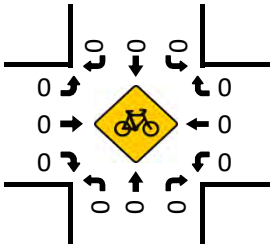
Eagles Nest Rd — NORTHBOUND

PM	173	0	4	6	1	PM
NOON	0	0	0	0	0	NOON
AM	11	0	9	142	31	AM

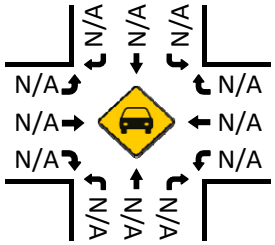
Total Vehicles (AM)



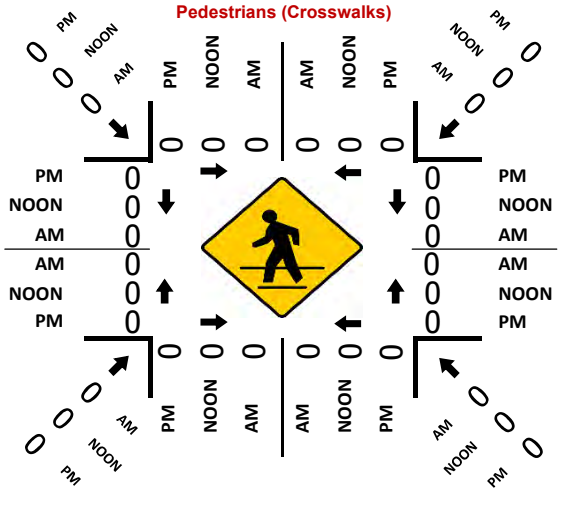
Bikes (AM)



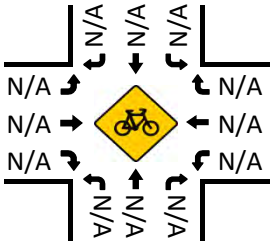
Total Vehicles (Noon)



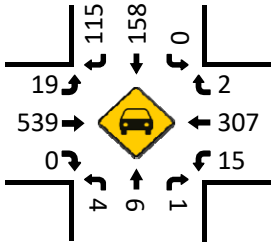
Pedestrians (Crosswalks)



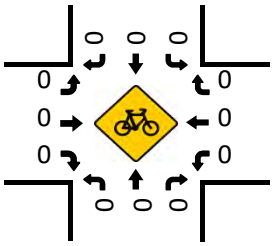
Bikes (NOON)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Sunrise Blvd & Jackson Rd/SR-16

Peak Hour Turning Movement Count

ID: 17-07693-004
City: Sacramento

Day: Thursday
Date: 09/28/2017

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	04:00 PM - 06:00 PM

Sunrise Blvd — SOUTHBOUND

AM	104	408	126	0	1146	AM
NOON	0	0	0	0	0	NOON
PM	85	815	223	0	529	PM

EASTBOUND — Jackson Rd/SR-16

AM	NOON	PM	
514	0	342	⇦
0	0	0	↶ 0
110	0	113	↱ 0
181	0	453	→ 0
3	0	12	↴ 0
AM	NOON	PM	

WESTBOUND — Jackson Rd/SR-16

PM	NOON	AM	
131	0	291	↰ 0
250	0	403	← 0
28	0	21	↰ 0
0	0	0	↰ 0
699	0	323	⇨
PM	NOON	AM	

CONTROL

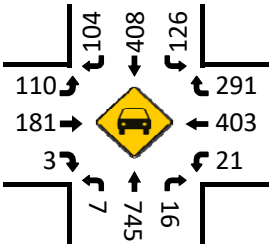
0

TEV	2415 AM	0 NOON	2425 PM
PHF	0.99		0.98

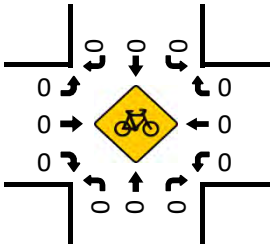
NORTHBOUND — Sunrise Blvd

PM	855	0	7	285	23	PM
NOON	0	0	0	0	0	NOON
AM	432	0	7	745	16	AM

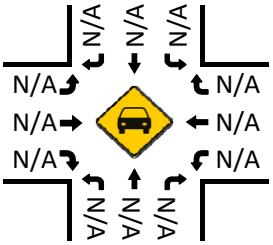
Total Vehicles (AM)



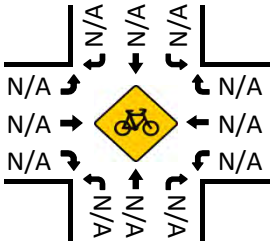
Bikes (AM)



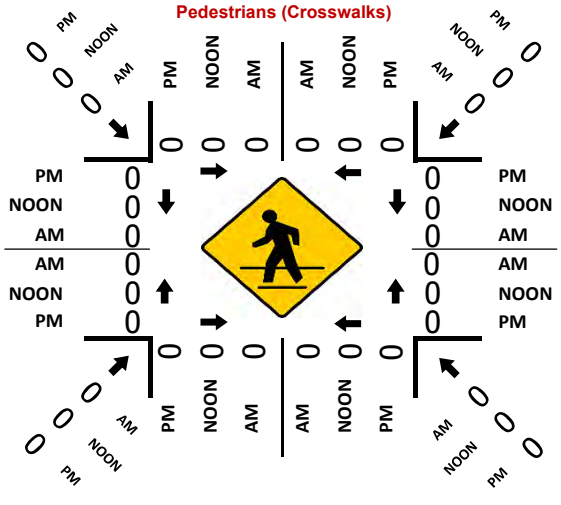
Total Vehicles (Noon)



Bikes (NOON)



Pedestrians (Crosswalks)


PM
NOON
AM
0
0
0
0
0
0
0
0
0
0
0

Prepared by National Data & Surveying Services

Grant Line Rd & Jackson Rd/SR-16

Peak Hour Turning Movement Count

ID: 17-07693-005
City: Sacramento

Day: Thursday
Date: 09/28/2017

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

Grant Line Rd — SOUTHBOUND

AM	30	261	22	0	457	AM
NOON	0	0	0	0	0	NOON
PM	49	378	61	0	397	PM

Jackson Rd/SR-16 — EASTBOUND

AM	NOON	PM	
726	0	390	⇦
0	0	0	↶ 0
38	0	32	↱ 0
278	0	657	→ 0
0	0	3	↴ 0
AM	NOON	PM	

Jackson Rd/SR-16 — WESTBOUND

PM	NOON	AM	
41	0	66	0 ↰
338	0	693	0 ←
53	0	66	0 ↰
1	0	0	0 ↰
786	0	325	⇨
PM	NOON	AM	

CONTROL

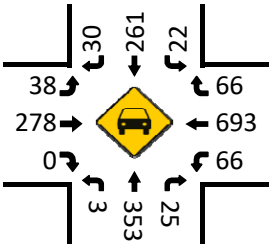
0

TEV	1835 AM	0 NOON	2007 PM
PHF	0.96		0.94

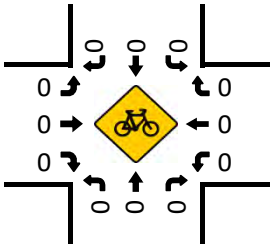
Grant Line Rd — NORTHBOUND

PM	434	0	3	324	67	PM
NOON	0	0	0	0	0	NOON
AM	327	0	3	353	25	AM

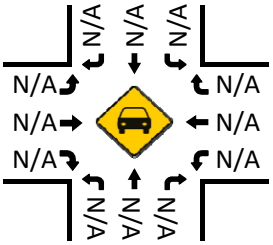
Total Vehicles (AM)



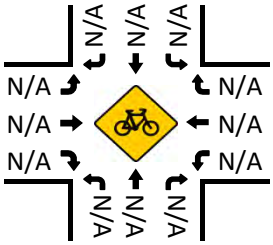
Bikes (AM)



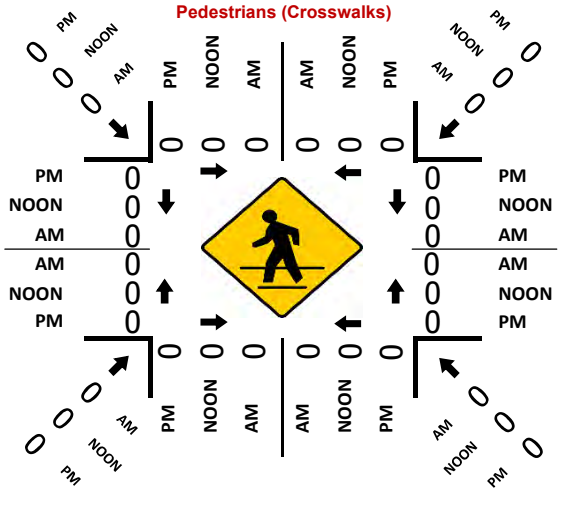
Total Vehicles (Noon)



Bikes (NOON)



Pedestrians (Crosswalks)


PM
NOON
AM
0
0
0
0
0
0
0
0
0
0
0

Prepared by National Data & Surveying Services

Sunrise Blvd & Florin Rd

Peak Hour Turning Movement Count

ID: 17-07693-007
City: Rancho Cordova

Day: Thursday
Date: 09/28/2017

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:45 PM - 05:45 PM	04:00 PM - 06:00 PM

Sunrise Blvd — SOUTHBOUND

AM	116	322	0	0	808	AM
NOON	0	0	0	0	0	NOON
PM	141	754	0	0	333	PM

EASTBOUND — Florin Rd

AM	NOON	PM	
144	0	146	⇦
0	0	0	↶ 0
122	0	79	↱ 0
0	0	0	→ 0
9	0	20	↴ 0

WESTBOUND — Florin Rd

PM	NOON	AM	
0	0	0	↰ 0
0	0	0	← 0
0	0	0	↶ 0
0	0	0	↰ 0
0	0	0	⇨

CONTROL

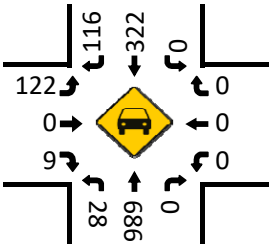
0

TEV	1283	0	1253
	AM	NOON	PM
PHF	0.93		0.96

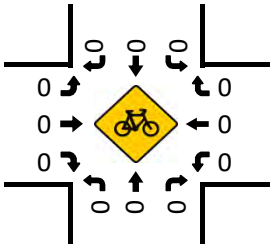
Sunrise Blvd — NORTHBOUND

PM	774	0	5	254	0	PM
NOON	0	0	0	0	0	NOON
AM	331	0	28	686	0	AM

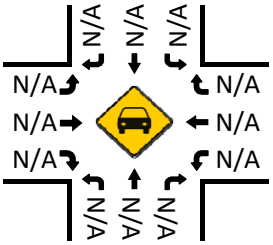
Total Vehicles (AM)



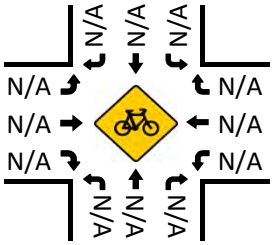
Bikes (AM)



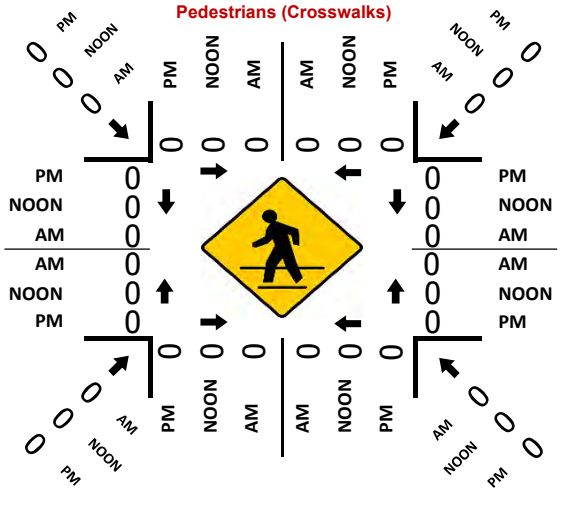
Total Vehicles (Noon)



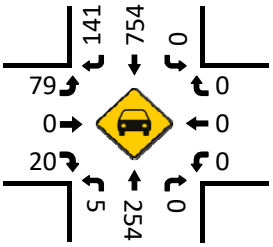
Bikes (NOON)



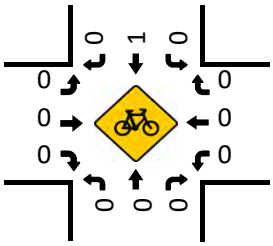
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Grant Line Rd & Kiefer Blvd

Peak Hour Turning Movement Count

ID: 17-07693-008
City: Rancho Cordova

Day: Thursday
Date: 09/28/2017

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:45 PM - 05:45 PM	04:00 PM - 06:00 PM

Grant Line Rd — SOUTHBOUND

AM	0	269	21	0	589	AM
NOON	0	0	0	0	0	NOON
PM	2	452	176	0	418	PM

Kiefer Blvd — EASTBOUND

AM	NOON	PM	
1	0	2	⇦
0	0	0	↶ 0
0	0	3	↱ 0
0	0	2	→ 0
0	0	0	↴ 0
AM	NOON	PM	

CONTROL

0

TEV	911 AM	0 NOON	1068 PM
PHF	0.97		0.90

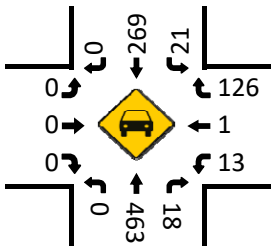
Kiefer Blvd — WESTBOUND

PM	NOON	AM	
31	0	126	↰ 0
0	0	1	← 0
14	0	13	↰ 0
0	0	0	↶ 0
182	0	39	⇨
PM	NOON	AM	

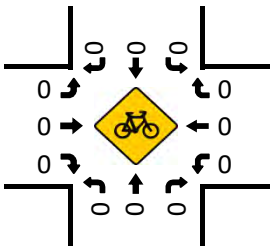
Grant Line Rd — NORTHBOUND

PM	466	0	0	384	4	PM
NOON	0	0	0	0	0	NOON
AM	282	0	0	463	18	AM

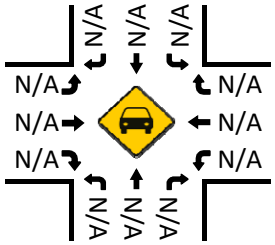
Total Vehicles (AM)



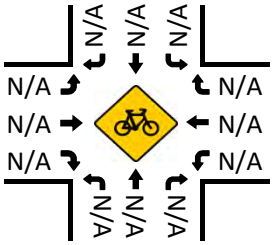
Bikes (AM)



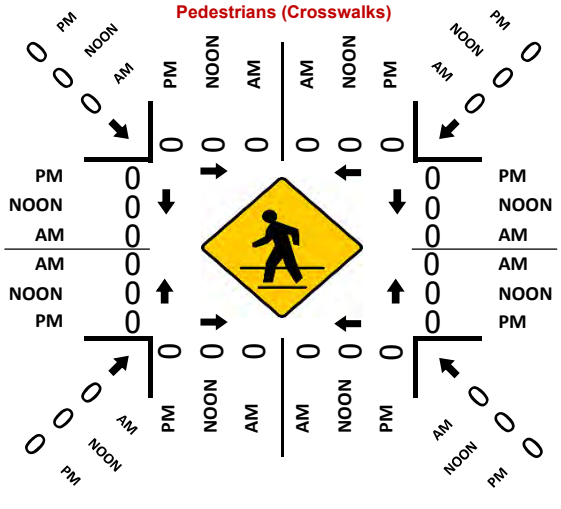
Total Vehicles (Noon)



Bikes (NOON)



Pedestrians (Crosswalks)


PM
NOON
AM
0
0
0
0
0
0
0
0
0
0
0

Prepared by National Data & Surveying Services

Sunrise Blvd & Grant Line Rd

Peak Hour Turning Movement Count

ID: 17-07693-009
City: Rancho Cordova

Day: Thursday
Date: 09/28/2017

PEAK HOURS		COUNT PERIODS
AM	07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:45 PM - 05:45 PM	04:00 PM - 06:00 PM

SOUTHBOUND (Sunrise Blvd)

	U-Turn	Left	Thru	Right	Total	
AM	327	3	3	0	725	AM
NOON	0	0	0	0	0	NOON
PM	748	31	11	0	263	PM

EASTBOUND (Grant Line Rd)

	AM	NOON	PM
Thru	654	0	1198
U-Turn	0	0	0
Left	686	0	245
Right	403	0	352
Total	8	0	7

WESTBOUND (Grant Line Rd)

	AM	NOON	PM
U-Turn	8	0	9
Thru	320	0	443
Left	0	0	1
Right	411	0	364
Total	0	0	0

CONTROL

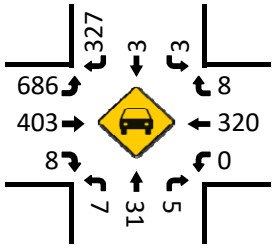
0

	AM	NOON	PM
TEV	1801	0	1864
PHF	0.92		0.97

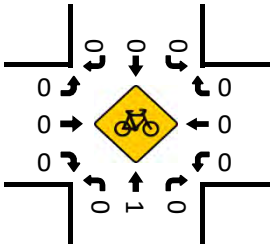
NORTHBOUND (Sunrise Blvd)

	U-Turn	Left	Thru	Right	Total	
PM	39	0	7	9	1	PM
NOON	0	0	0	0	0	NOON
AM	11	0	7	31	5	AM

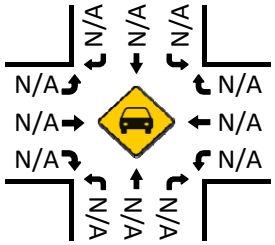
Total Vehicles (AM)



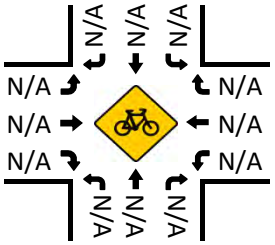
Bikes (AM)



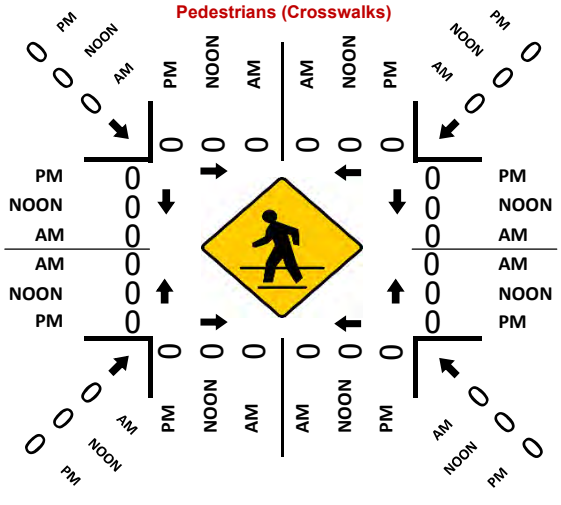
Total Vehicles (Noon)



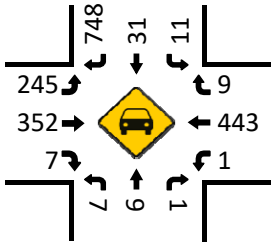
Bikes (NOON)



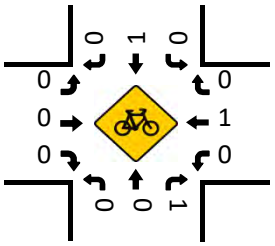
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Zinfandel Dr & Douglas Rd

Peak Hour Turning Movement Count

ID: 17-07693-010
City: Rancho Cordova

Day: Thursday
Date: 09/28/2017

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

SOUTHBOUND (Zinfandel Dr)

AM	70	28	146	0	960	AM
NOON	0	0	0	0	0	NOON
PM	362	156	517	0	321	PM

EASTBOUND (Douglas Rd)

AM	NOON	PM	
447	0	545	⇦
0	0	0	↶ 0
354	0	67	↱ 0
187	0	263	→ 0
14	0	18	↴ 0

WESTBOUND (Douglas Rd)

PM	NOON	AM	
200	0	427	0 ↰
178	0	370	0 ←
58	0	29	0 ↙
0	0	1	0 ↶
809	0	381	⇨

CONTROL

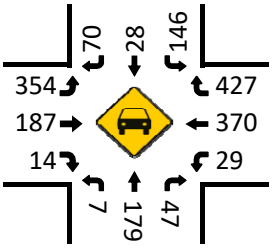
0

TEV	1859 AM	0 NOON	1907 PM
PHF	0.94		0.93

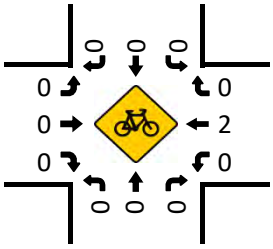
NORTHBOUND (Zinfandel Dr)

PM	232	0	5	54	29	PM
NOON	0	0	0	0	0	NOON
AM	71	0	7	179	47	AM

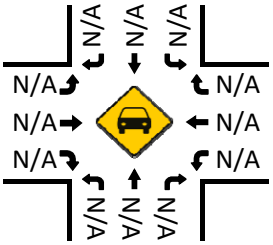
Total Vehicles (AM)



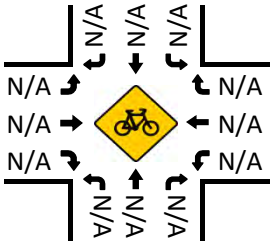
Bikes (AM)



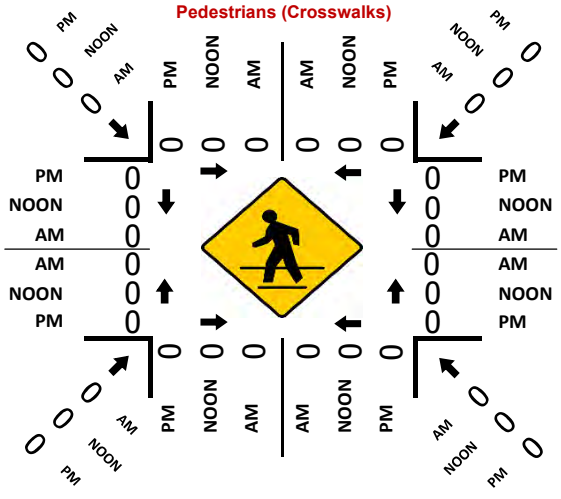
Total Vehicles (Noon)



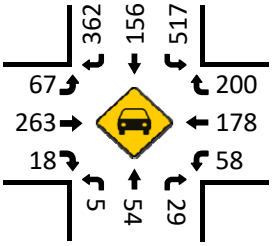
Bikes (NOON)



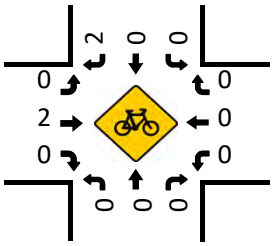
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Sunrise Blvd & Douglas Rd

Peak Hour Turning Movement Count

ID: 17-07693-011
City: Rancho Cordova

Day: Thursday
Date: 09/28/2017

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:45 PM - 05:45 PM	04:00 PM - 06:00 PM

SOUTHBOUND — Sunrise Blvd

AM	66	477	64	3	1903	AM
NOON	0	0	0	0	0	NOON
PM	124	1586	243	3	708	PM

EASTBOUND — Douglas Rd

AM	NOON	PM	
814	0	391	
5	0	5	0
187	0	58	0
95	0	305	0
133	0	417	0

WESTBOUND — Douglas Rd

PM	NOON	AM	
104	0	234	0
107	0	241	0
114	0	91	0
0	0	0	0
644	0	261	

NORTHBOUND — Sunrise Blvd

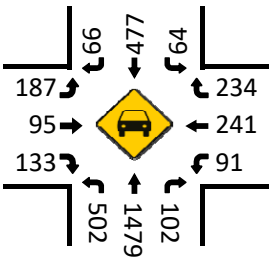
PM	2120	3	155	543	96	PM
NOON	0	0	0	0	0	NOON
AM	707	6	502	1479	102	AM

CONTROL

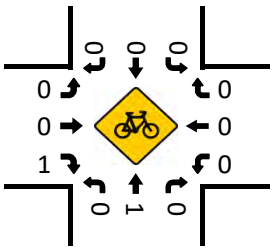
0

TEV	3685 AM	0 NOON	3863 PM
PHF	0.97		0.96

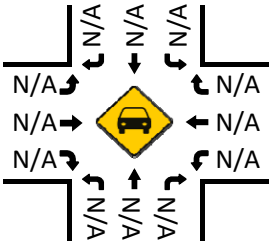
Total Vehicles (AM)



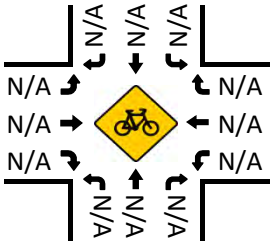
Bikes (AM)



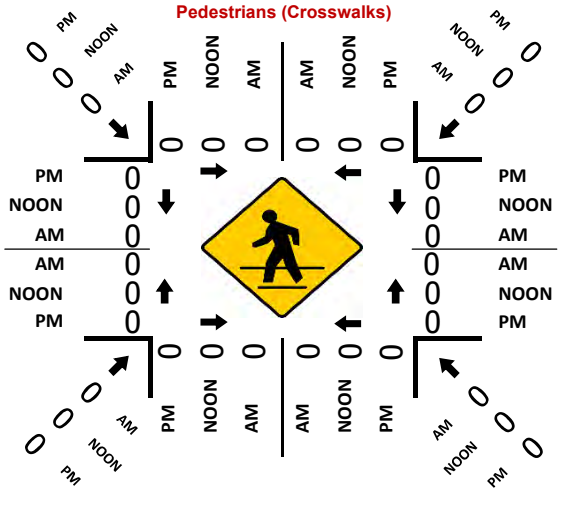
Total Vehicles (Noon)



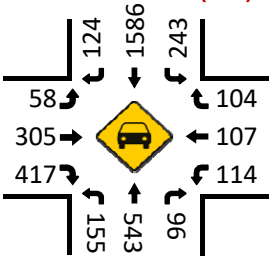
Bikes (NOON)



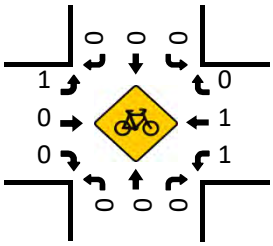
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Grant Line Rd & Douglas Rd

Peak Hour Turning Movement Count

ID: 17-07693-012
City: Rancho Cordova

Day: Thursday
Date: 09/28/2017

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

SOUTHBOUND — Grant Line Rd

AM	98	288	0	0	715	AM
NOON	0	0	0	0	0	NOON
PM	155	501	0	0	577	PM

EASTBOUND — Douglas Rd

AM	NOON	PM	
206	0	192	⇦
0	0	0	↶ 0
228	0	174	↱ 0
0	0	0	→ 0
21	0	120	↴ 0

WESTBOUND — Douglas Rd

PM	NOON	AM	
0	0	0	↰ 0
0	0	0	← 0
0	0	0	↶ 0
0	0	0	↱ 0
0	0	0	⇨

NORTHBOUND — Grant Line Rd

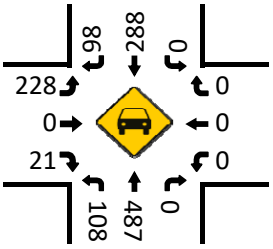
PM	621	0	37	403	0	PM
NOON	0	0	0	0	0	NOON
AM	309	0	108	487	0	AM

CONTROL

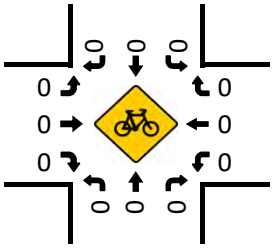
0

TEV	1230 AM	0 NOON	1390 PM
PHF	0.96		0.88

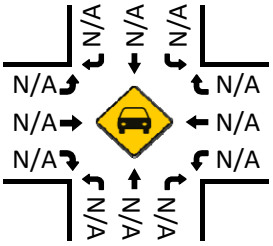
Total Vehicles (AM)



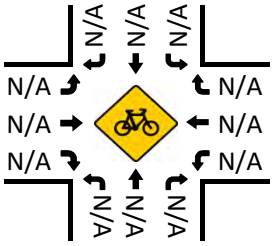
Bikes (AM)



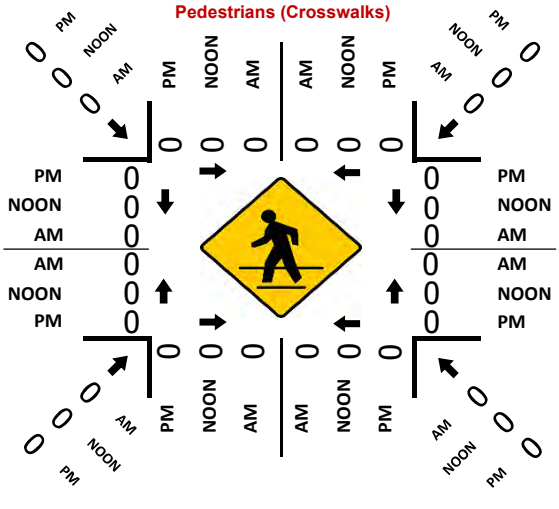
Total Vehicles (Noon)



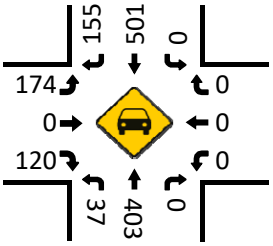
Bikes (NOON)



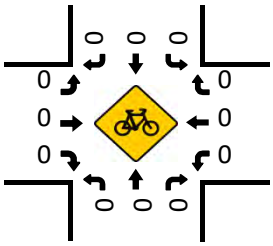
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Mather Field Rd & Folsom Blvd

Peak Hour Turning Movement Count

ID: 17-07693-013
City: Sacramento

Day: Thursday
Date: 09/28/2017

PEAK HOURS		COUNT PERIODS
AM	07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:45 PM - 05:45 PM	04:00 PM - 06:00 PM

SOUTHBOUND — Mather Field Rd

	Left	Thru	Right	U-Turn	Total
AM	22	74	6	0	138
NOON	0	0	0	0	0
PM	18	54	18	0	214

EASTBOUND — Folsom Blvd

	Left	Thru	Right	U-Turn
AM	194	468	12	2
NOON	0	0	0	0
PM	178	907	20	2

WESTBOUND — Folsom Blvd

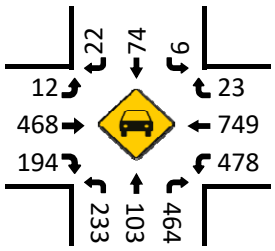
	Left	Thru	Right	U-Turn
AM	392	659	27	1
NOON	0	0	0	0
PM	478	749	23	0

NORTHBOUND — Mather Field Rd

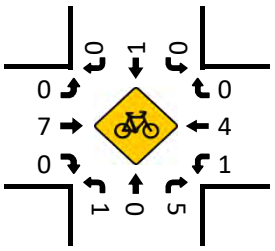
	Left	Thru	Right	U-Turn	Total
AM	464	103	233	0	746
NOON	0	0	0	0	0
PM	687	167	180	0	624

CONTROL			
	0		
TEV	2828	0	3310
	AM	NOON	PM
PHF	0.93		0.98

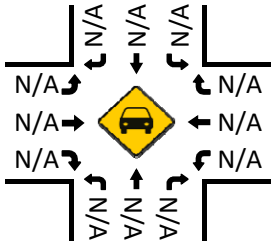
Total Vehicles (AM)



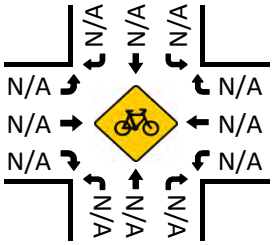
Bikes (AM)



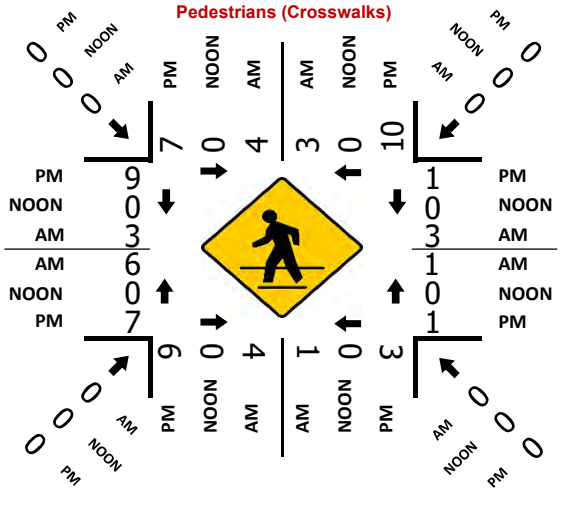
Total Vehicles (Noon)



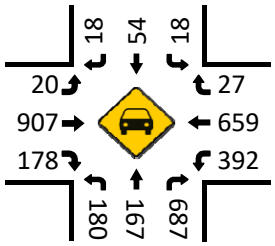
Bikes (NOON)



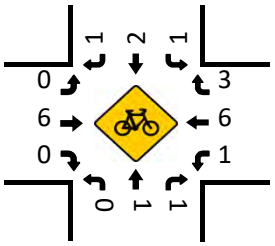
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Mather Field Rd & US-50 WB Ramps

Peak Hour Turning Movement Count

ID: 17-07693-014
City: Sacramento

Day: Thursday
Date: 09/28/2017

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

Mather Field Rd — SOUTHBOUND

AM	278	722	0	0	1044	AM
NOON	0	0	0	0	0	NOON
PM	326	562	0	0	1408	PM

US-50 WB Ramps — EASTBOUND

AM	NOON	PM	
278	0	326	⇦
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
AM	NOON	PM	

CONTROL

0

	AM	NOON	PM
TEV	3565	0	3694
PHF	0.90		0.96

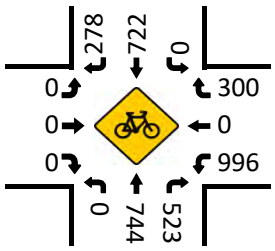
WESTBOUND — US-50 WB Ramps

PM	NOON	AM	
310	0	300	0
0	0	0	0
343	0	996	0
0	0	0	0
1055	0	523	⇨
PM	NOON	AM	

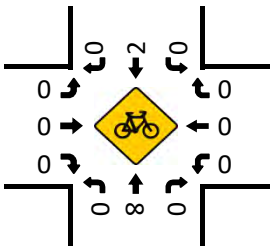
Mather Field Rd — NORTHBOUND

PM	905	0	0	1098	1055	PM
NOON	0	0	0	0	0	NOON
AM	1720	2	0	744	523	AM

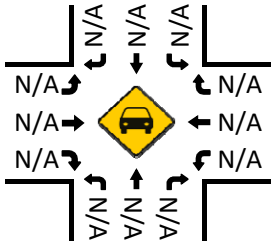
Total Vehicles (AM)



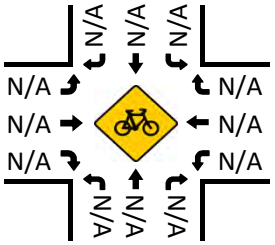
Bikes (AM)



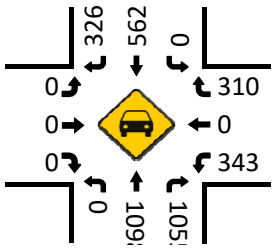
Total Vehicles (Noon)



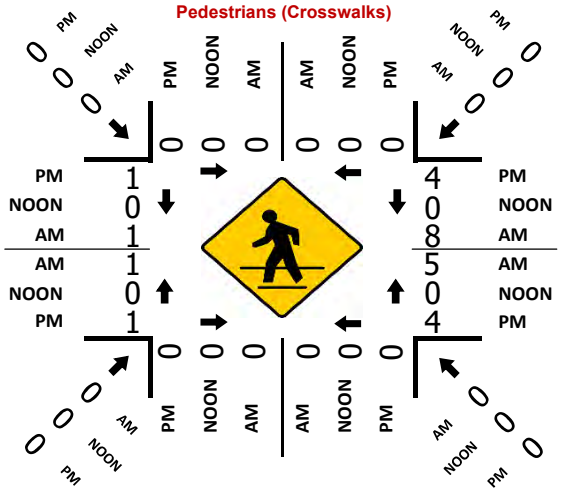
Bikes (NOON)



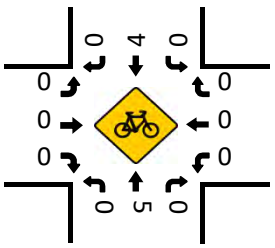
Total Vehicles (PM)



Pedestrians (Crosswalks)



Bikes (PM)



Prepared by National Data & Surveying Services

Mather Field Rd & US-50 EB Ramps

Peak Hour Turning Movement Count

ID: 17-07693-015
City: Sacramento

Day: Thursday
Date: 09/28/2017

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	04:00 PM - 06:00 PM

SOUTHBOUND — Mather Field Rd

AM	273	1471	0	1	1237	AM
NOON	0	0	0	0	0	NOON
PM	215	658	0	1	2054	PM

EASTBOUND — US-50 EB Ramps

AM	NOON	PM	
273	0	215	
0	0	0	0
250	0	534	0
0	0	0	0
1094	0	608	0
AM	NOON	PM	

WESTBOUND — US-50 EB Ramps

PM	NOON	AM	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
828	0	324	
PM	NOON	AM	

CONTROL

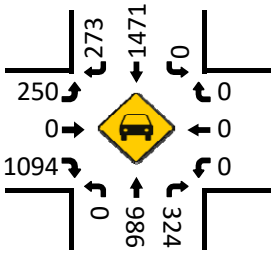
0

TEV	4399 AM	0 NOON	4363 PM
PHF	0.92		0.95

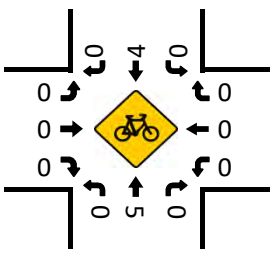
NORTHBOUND — Mather Field Rd

PM	1266	0	0	1519	828 PM
NOON	0	0	0	0	0 NOON
AM	2565	0	0	986	324 AM

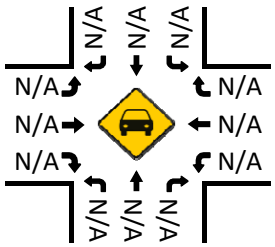
Total Vehicles (AM)



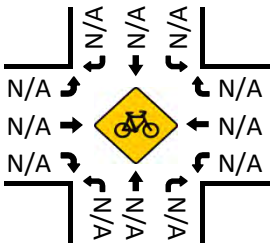
Bikes (AM)



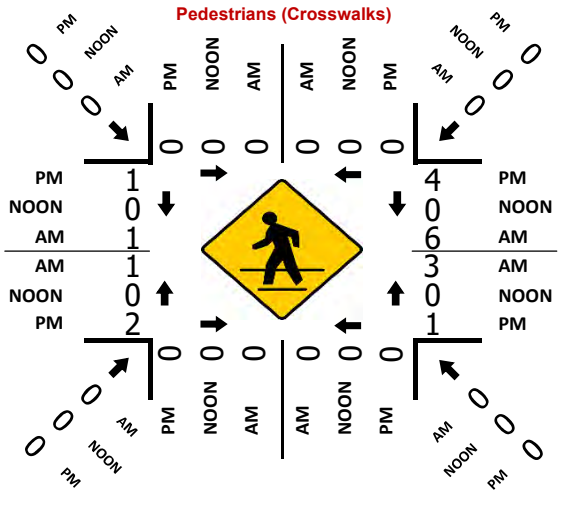
Total Vehicles (Noon)



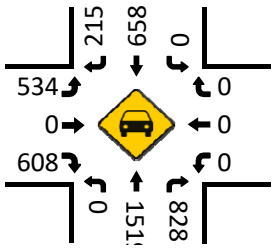
Bikes (NOON)



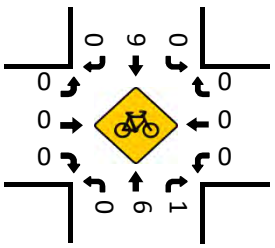
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Mather Field Rd & International Dr

Peak Hour Turning Movement Count

ID: 17-07693-016
City: Sacramento

Day: Thursday
Date: 09/28/2017

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

Mather Field Rd — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

International Dr — EASTBOUND

AM	NOON	PM	
942	0	1738	⇦
0	0	0	↶ 0
0	0	0	↱ 0
1016	0	693	→ 0
745	0	234	↴ 0
AM	NOON	PM	

CONTROL

0

TEV	2868 AM	0 NOON	2916 PM
PHF	0.94		0.89

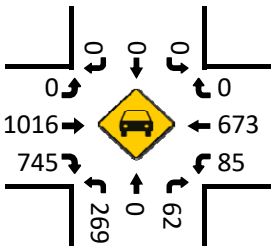
WESTBOUND — International Dr

PM	NOON	AM	
0	0	0	↰ 0
1115	0	673	← 0
142	0	85	↰ 0
7	0	18	↰ 0
802	0	1096	⇨
PM	NOON	AM	

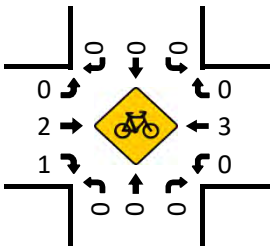
Mather Field Rd — NORTHBOUND

PM	376	0	623	0	102	PM
NOON	0	0	0	0	0	NOON
AM	830	0	269	0	62	AM

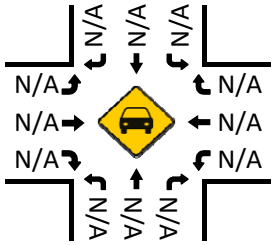
Total Vehicles (AM)



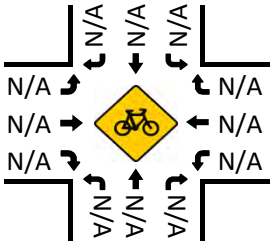
Bikes (AM)



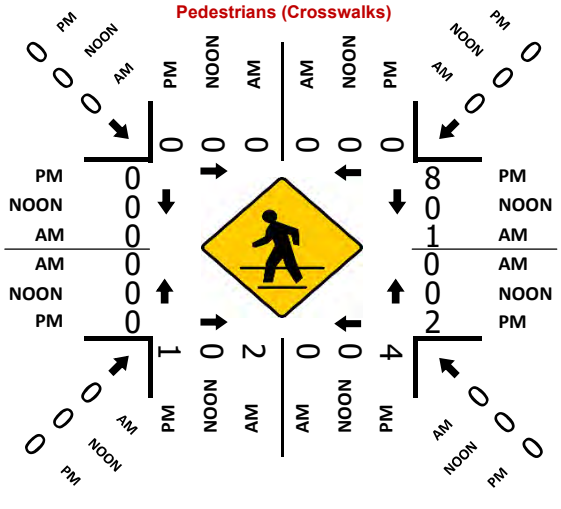
Total Vehicles (Noon)



Bikes (NOON)



Pedestrians (Crosswalks)


PM NOON AM
0 0 0
0 0 0
0 0 0

Prepared by National Data & Surveying Services

Zinfandel Dr & International Dr

Peak Hour Turning Movement Count

ID: 17-07693-017
City: Sacramento

Day: Thursday
Date: 09/28/2017

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

SOUTHBOUND — Zinfandel Dr

AM	227	410	137	5	1095	AM
NOON	0	0	0	0	0	NOON
PM	162	843	173	8	938	PM

EASTBOUND — International Dr

AM	NOON	PM	
892	0	756	⇦
10	0	14	↶ 0
91	0	321	↱ 0
382	0	423	→ 0
96	0	253	↴ 0
AM	NOON	PM	

WESTBOUND — International Dr

PM	NOON	AM	
149	0	98	0 ↰
468	0	364	0 ←
184	0	101	0 ↙
30	0	16	0 ↶
701	0	651	⇨
PM	NOON	AM	

CONTROL

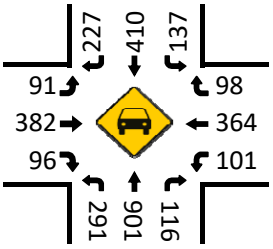
0

TEV	3264	0	3689
	AM	NOON	PM
PHF	0.95		0.96

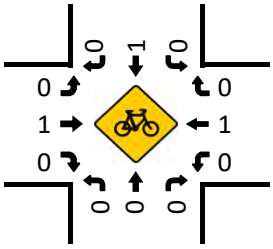
NORTHBOUND — Zinfandel Dr

PM	1294	14	112	460	75	PM
NOON	0	0	0	0	0	NOON
AM	626	19	291	901	116	AM

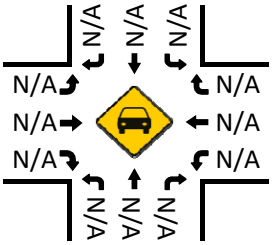
Total Vehicles (AM)



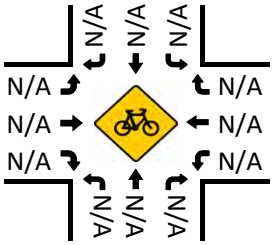
Bikes (AM)



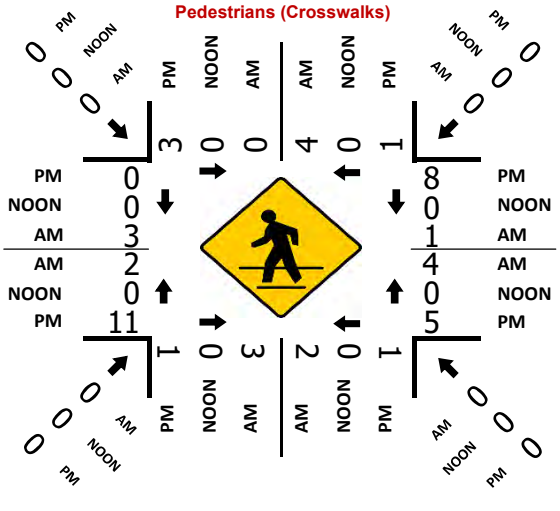
Total Vehicles (Noon)



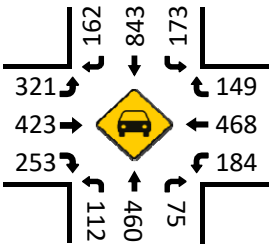
Bikes (NOON)



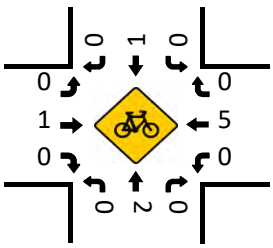
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Zinfandel Dr & White Rock Rd

Peak Hour Turning Movement Count

ID: 17-07693-018
City: Sacramento

Day: Thursday
Date: 09/28/2017

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

Zinfandel Dr — SOUTHBOUND

AM	696	1319	685	0	1424	AM
NOON	0	0	0	0	0	NOON
PM	237	995	337	0	2262	PM

WESTBOUND — White Rock Rd

PM	NOON	AM
649	0	233
174	0	116
68	0	36
3	0	1
581	0	815

EASTBOUND — White Rock Rd

AM	NOON	PM
868	0	455
3	0	1
219	0	476
95	0	230
10	0	22

CONTROL

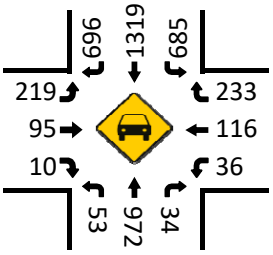
0

TEV	4475 AM	0 NOON	4383 PM
PHF	0.96		0.94

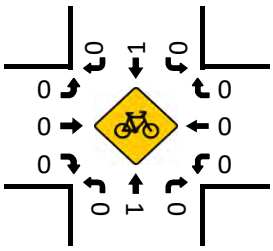
NORTHBOUND — Zinfandel Dr

PM	1085	0	43	1137	11	PM
NOON	0	0	0	0	0	NOON
AM	1368	3	53	972	34	AM

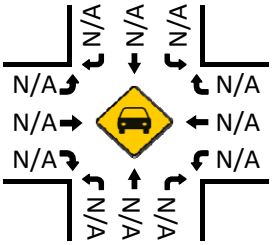
Total Vehicles (AM)



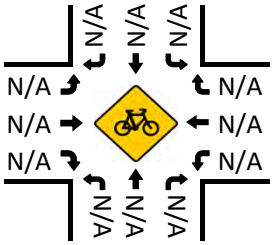
Bikes (AM)



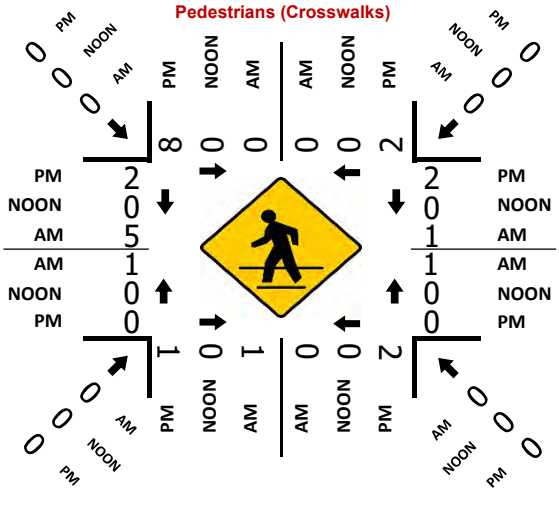
Total Vehicles (Noon)



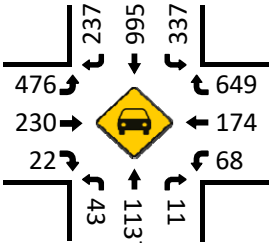
Bikes (NOON)



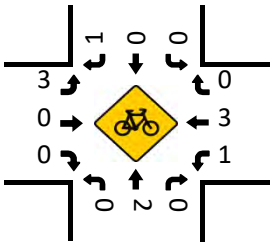
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Zinfandel Dr & US-50 EB Ramps

Peak Hour Turning Movement Count

ID: 17-07693-019
City: Sacramento

Day: Thursday
Date: 09/28/2017

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

Zinfandel Dr — SOUTHBOUND

AM	202	1582	0	0	1552	AM
NOON	0	0	0	0	0	NOON
PM	135	966	0	0	3340	PM

US-50 EB Ramps — EASTBOUND

AM	NOON	PM	
202	0	135	⇦
0	0	0	↶ 0
345	0	658	↱ 0
913	0	120	→ 0
1076	0	622	↴ 0
AM	NOON	PM	

US-50 EB Ramps — WESTBOUND

PM	NOON	AM	
870	0	132	0 ↰
0	0	0	0 ←
0	0	0	0 ↶
0	0	0	0 ↩
124	0	924	⇨
PM	NOON	AM	

CONTROL

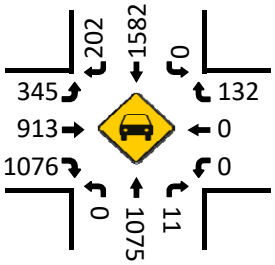
0

TEV	5336 AM	0 NOON	5187 PM
PHF	0.95		0.97

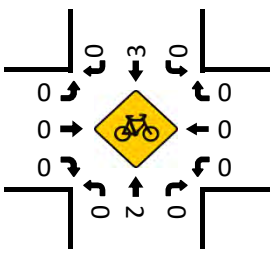
Zinfandel Dr — NORTHBOUND

PM	1588	0	0	1812	4	PM
NOON	0	0	0	0	0	NOON
AM	2658	0	0	1075	11	AM

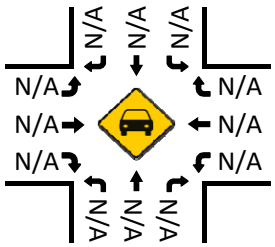
Total Vehicles (AM)



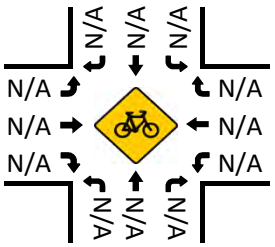
Bikes (AM)



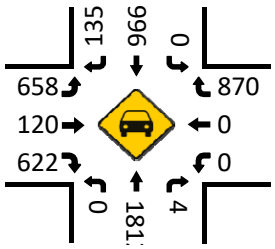
Total Vehicles (Noon)



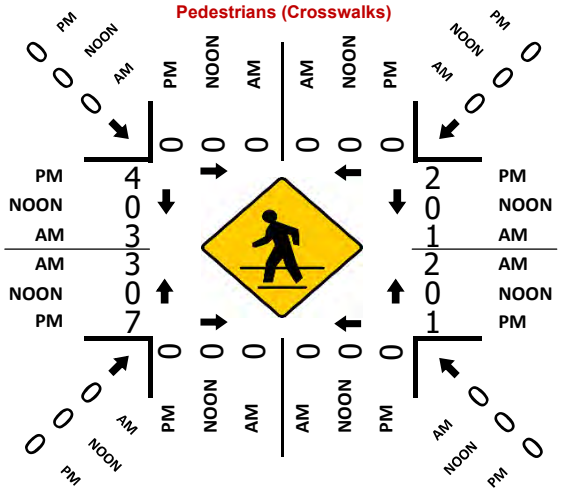
Bikes (NOON)



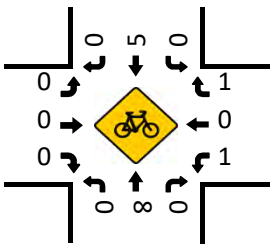
Total Vehicles (PM)



Pedestrians (Crosswalks)



Bikes (PM)



Prepared by National Data & Surveying Services

Zinfandel Dr & US-50 WB Ramps

Peak Hour Turning Movement Count

ID: 17-07693-020
City: Sacramento

Day: Thursday
Date: 09/28/2017

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

SOUTHBOUND (Zinfandel Dr)

AM	346	794	0	0	1073	AM
NOON	0	0	0	0	0	NOON
PM	500	710	0	0	1920	PM

EASTBOUND (US-50 WB Ramps)

AM	NOON	PM	
346	0	500	⇦
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
AM	NOON	PM	

WESTBOUND (US-50 WB Ramps)

PM	NOON	AM	
293	0	161	0
0	0	0	0
398	0	1000	0
0	0	0	0
1720	0	637	⇨
PM	NOON	AM	

CONTROL

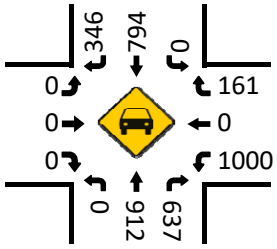
0

TEV	3850 AM	0 NOON	5249 PM
PHF	0.97		0.98

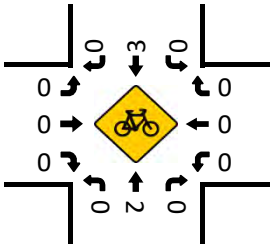
NORTHBOUND (Zinfandel Dr)

PM	1109	1	0	1627	1720	PM
NOON	0	0	0	0	0	NOON
AM	1794	0	0	912	637	AM

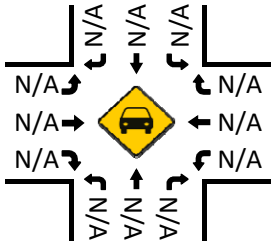
Total Vehicles (AM)



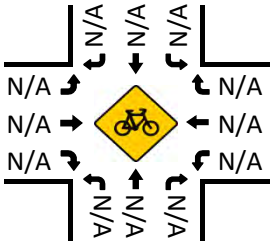
Bikes (AM)



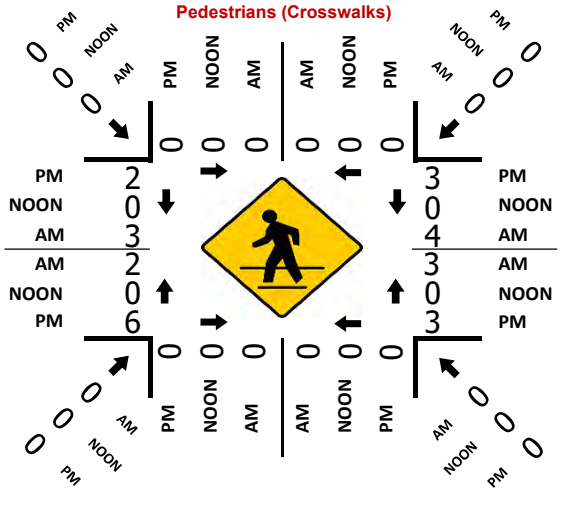
Total Vehicles (Noon)



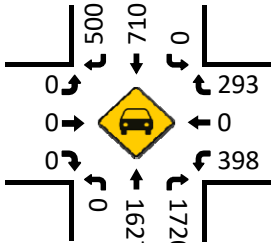
Bikes (NOON)



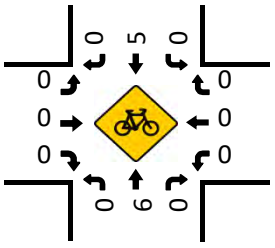
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Sunrise Blvd & White Rock Rd

Peak Hour Turning Movement Count

ID: 17-07693-021
City: Rancho Cordova

Day: Thursday
Date: 09/28/2017

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

SOUTHBOUND — Sunrise Blvd

AM	326	925	224	21	1470	AM
NOON	0	0	0	0	0	NOON
PM	132	1199	226	36	1367	PM

EASTBOUND — White Rock Rd

AM	NOON	PM	
981	0	682	
45	0	35	0
110	0	251	0
168	0	565	0
78	0	245	0
AM	NOON	PM	

WESTBOUND — White Rock Rd

PM	NOON	AM	
213	0	139	0
297	0	301	0
242	0	147	0
11	0	1	0
1014	0	498	
PM	NOON	AM	

NORTHBOUND — Sunrise Blvd

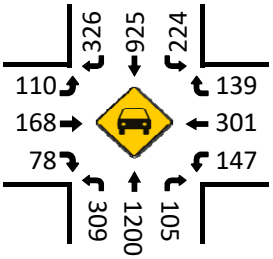
PM	1757	71	218	867	212	PM
NOON	0	0	0	0	0	NOON
AM	1192	42	309	1200	105	AM

CONTROL

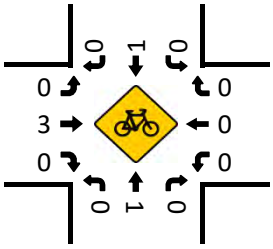
0

TEV	4141	0	4820
	AM	NOON	PM
PHF	0.93		0.93

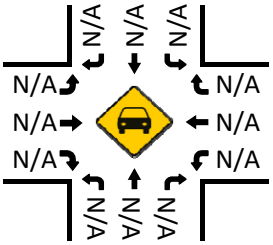
Total Vehicles (AM)



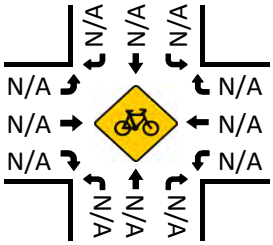
Bikes (AM)



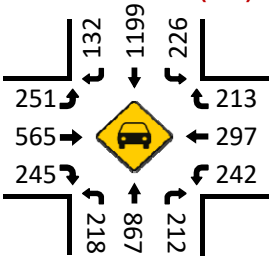
Total Vehicles (Noon)



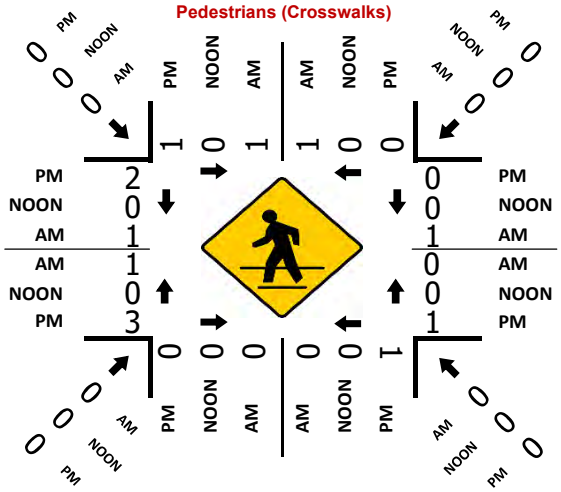
Bikes (NOON)



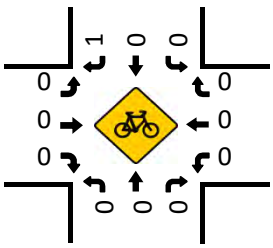
Total Vehicles (PM)



Pedestrians (Crosswalks)



Bikes (PM)



Prepared by National Data & Surveying Services

Sunrise Blvd & Folsom Blvd

Peak Hour Turning Movement Count

ID: 17-07693-022
City: Rancho Cordova

Day: Thursday
Date: 09/28/2017

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	04:00 PM - 06:00 PM

Sunrise Blvd — SOUTHBOUND

AM	293	2110	226	0	1582	AM
NOON	0	0	0	0	0	NOON
PM	257	1215	216	1	1789	PM

Folsom Blvd — EASTBOUND

AM	NOON	PM	
648	0	573	⇦
0	0	0	↶ 0
194	0	422	↱ 0
143	0	401	→ 0
69	0	90	↳ 0
AM	NOON	PM	

WESTBOUND — Folsom Blvd

PM	NOON	AM	
247	0	166	0 ↰
266	0	284	0 ←
187	0	329	0 ↙
1	0	0	0 ↲
772	0	484	⇨
PM	NOON	AM	

CONTROL

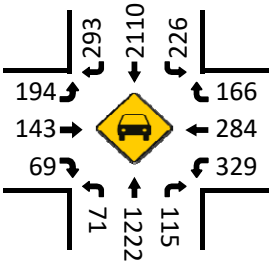
0

TEV	5223	0	4628
	AM	NOON	PM
PHF	0.97		0.94

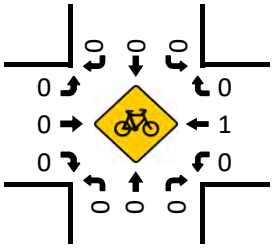
NORTHBOUND — Sunrise Blvd

PM	1494	2	50	1119	154	PM
NOON	0	0	0	0	0	NOON
AM	2509	1	71	1222	115	AM

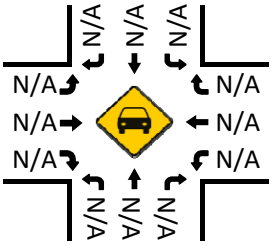
Total Vehicles (AM)



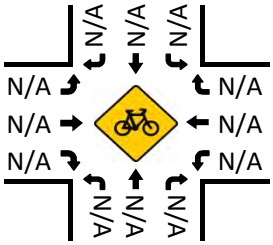
Bikes (AM)



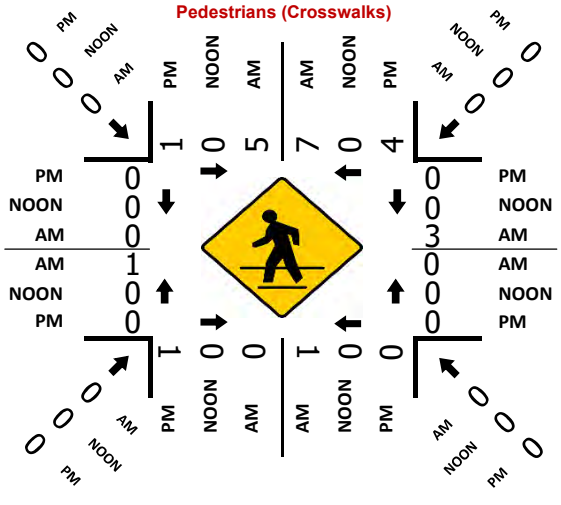
Total Vehicles (Noon)



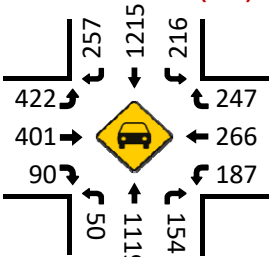
Bikes (NOON)



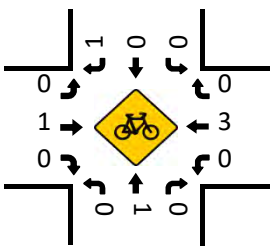
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Sunrise Blvd & US-50 EB Ramps

Peak Hour Turning Movement Count

ID: 17-07693-023
City: Rancho Cordova

Day: Thursday
Date: 09/28/2017

PEAK HOURS		COUNT PERIODS
AM	07:45 AM - 08:45 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:00 PM - 05:00 PM	04:00 PM - 06:00 PM

Sunrise Blvd — SOUTHBOUND

AM	441	2053	0	0	2463	AM
NOON	0	0	0	0	0	NOON
PM	403	1362	0	0	2820	PM

US-50 EB Ramps — EASTBOUND

AM	NOON	PM	
441	0	403	⇦
0	0	0	↶ 0
1222	0	1230	↱ 0
0	0	0	→ 0
531	0	322	↴ 0
AM	NOON	PM	

CONTROL

0

TEV	5952	0	5086
	AM	NOON	PM
PHF	0.98		0.93

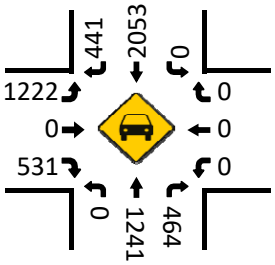
US-50 EB Ramps — WESTBOUND

PM	NOON	AM	
0	0	0	↰ 0
0	0	0	← 0
0	0	0	↰ 0
0	0	0	↰ 0
179	0	464	⇨
PM	NOON	AM	

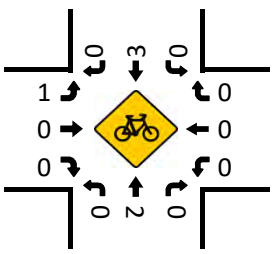
Sunrise Blvd — NORTHBOUND

PM	1684	0	0	1590	179	PM
NOON	0	0	0	0	0	NOON
AM	2584	0	0	1241	464	AM

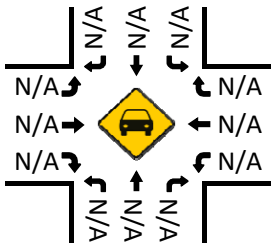
Total Vehicles (AM)



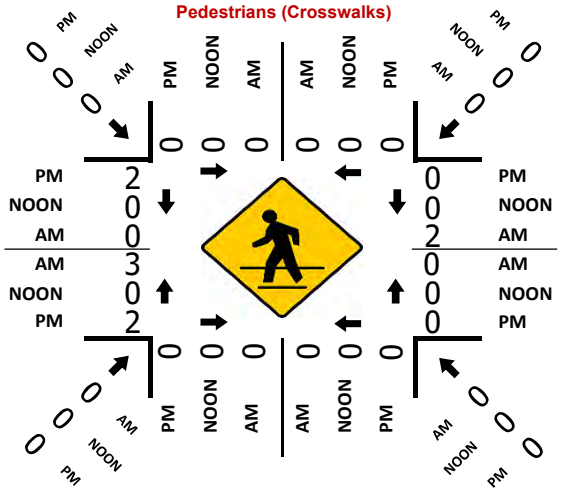
Bikes (AM)



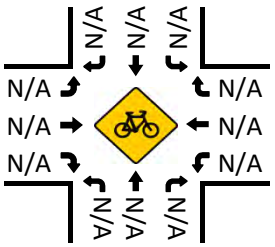
Total Vehicles (Noon)



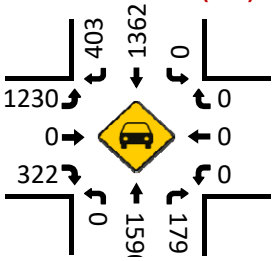
Pedestrians (Crosswalks)



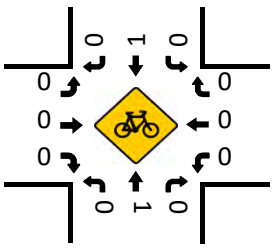
Bikes (NOON)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Sunrise Blvd & US-50 WB Ramps

Peak Hour Turning Movement Count

ID: 17-07693-024
City: Rancho Cordova

Day: Thursday
Date: 09/28/2017

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	04:00 PM - 06:00 PM

Sunrise Blvd — SOUTHBOUND

AM	1520	2097	0	0	2600	AM
NOON	0	0	0	0	0	NOON
PM	1217	1413	0	0	2884	PM

US-50 WB Ramps — EASTBOUND

AM	NOON	PM	
1520	0	1217	⇦
0	0	0	↶ 0
0	0	0	↱ 0
0	0	0	→ 0
0	0	0	↷ 0
AM	NOON	PM	

WESTBOUND — US-50 WB Ramps

PM	NOON	AM	
453	0	427	0 ↶
0	0	0	0 ←
417	0	407	0 ↰
0	0	0	0 ↷
359	0	262	⇨
PM	NOON	AM	

CONTROL

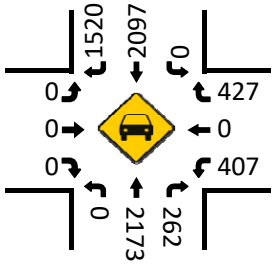
0

TEV	6886	0	6290
	AM	NOON	PM
PHF	0.99		0.95

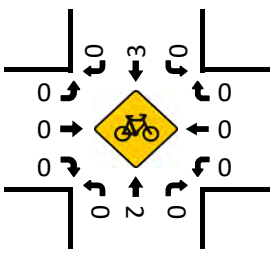
Sunrise Blvd — NORTHBOUND

PM	1830	0	0	2431	359	PM
NOON	0	0	0	0	0	NOON
AM	2504	0	0	2173	262	AM

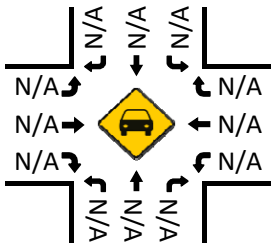
Total Vehicles (AM)



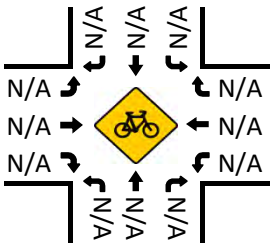
Bikes (AM)



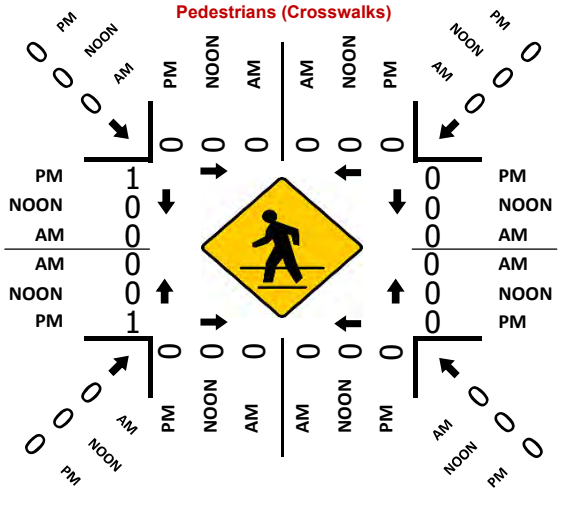
Total Vehicles (Noon)



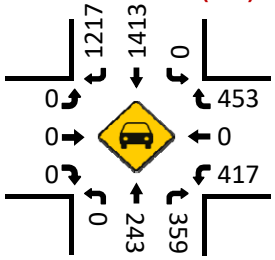
Bikes (NOON)



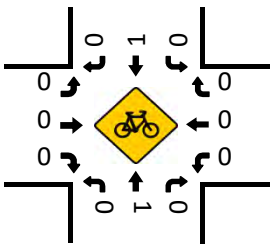
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Sunrise Blvd & Zinfandel Dr

Peak Hour Turning Movement Count

ID: 17-07693-025
City: Rancho Cordova

Day: Thursday
Date: 09/28/2017

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	04:00 PM - 06:00 PM

SOUTHBOUND (Sunrise Blvd)

	Left	Thru	Right	U-Turn	Approach Total
AM	79	3279	36	0	2489
NOON	0	0	0	0	0
PM	96	2314	62	2	2854

EASTBOUND (Zinfandel Dr)

	Left	Thru	Right	U-Turn	Approach Total
AM	371	0	273	0	644
NOON	0	0	0	0	0
PM	112	0	186	0	298

WESTBOUND (Zinfandel Dr)

	Left	Thru	Right	U-Turn	Approach Total
AM	61	0	34	0	95
NOON	0	0	0	0	0
PM	57	0	39	0	96

NORTHBOUND (Sunrise Blvd)

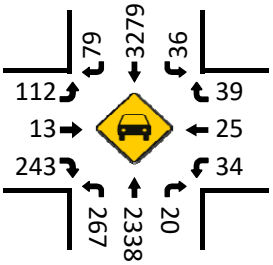
	Left	Thru	Right	U-Turn	Approach Total
AM	34	267	2338	20	3590
NOON	0	0	0	0	0
PM	33	151	2609	23	2581

CONTROL

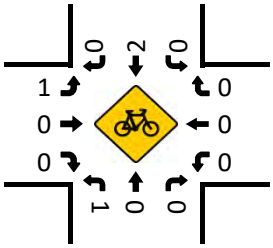
0

	Total	AM	NOON	PM
TEV	6519	0	0	5829
PHF		0.96		0.94

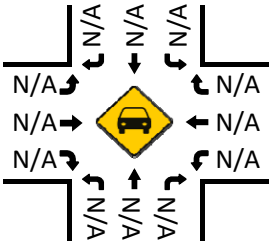
Total Vehicles (AM)



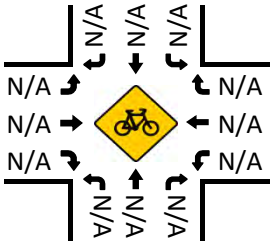
Bikes (AM)



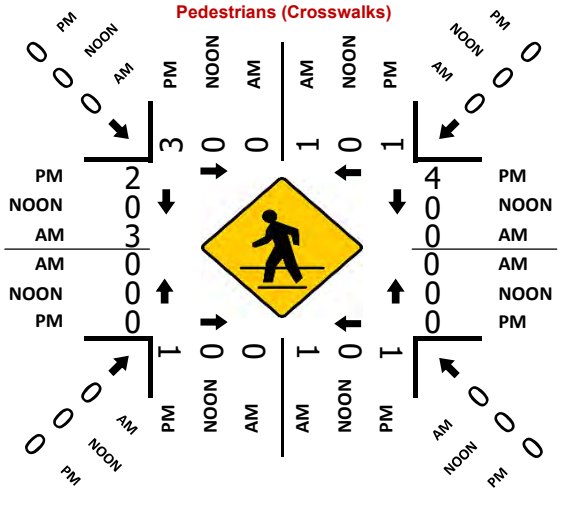
Total Vehicles (Noon)



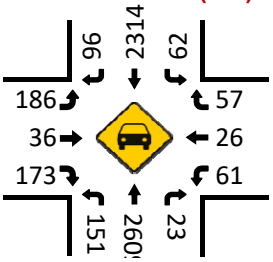
Bikes (NOON)



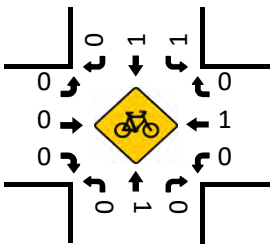
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Grant Line Rd & White Rock Rd

Peak Hour Turning Movement Count

ID: 17-07693-026
City: Rancho Cordova

Day: Thursday
Date: 09/28/2017

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

Grant Line Rd — SOUTHBOUND

AM	338	408	0	1	801	AM
NOON	0	0	0	0	0	NOON
PM	46	687	0	0	1275	PM

White Rock Rd — EASTBOUND

AM	NOON	PM
348	0	53
0	0	1
36	0	689
0	0	0
3	0	22

White Rock Rd — WESTBOUND

PM	NOON	AM
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

Grant Line Rd — NORTHBOUND

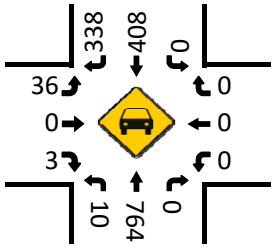
PM	709	0	6	586	0	PM
NOON	0	0	0	0	0	NOON
AM	411	0	10	764	0	AM

CONTROL

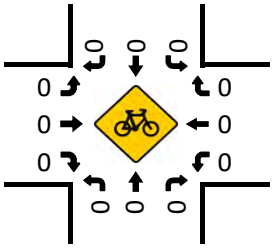
0

TEV	1560	0	2037
	AM	NOON	PM
PHF	0.90		0.88

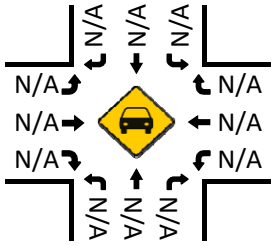
Total Vehicles (AM)



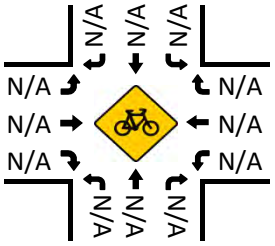
Bikes (AM)



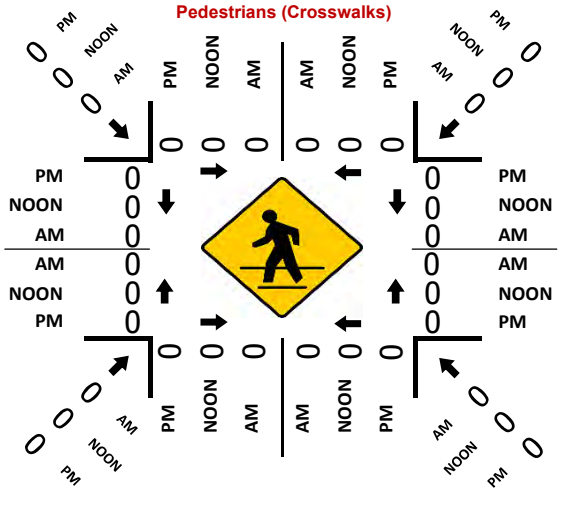
Total Vehicles (Noon)



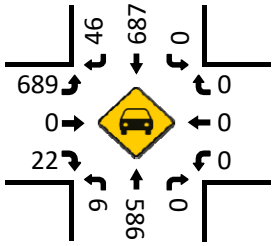
Bikes (NOON)



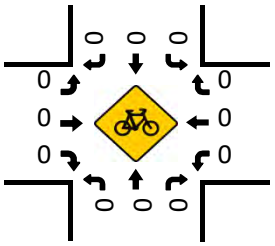
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Prairie City Rd & White Rock Rd

Peak Hour Turning Movement Count

ID: 17-07693-027
City: Rancho Cordova

Day: Thursday
Date: 09/28/2017

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
04:45 PM - 05:45 PM	04:00 PM - 06:00 PM

Prairie City Rd — SOUTHBOUND

AM	441	0	43	0	731	AM
NOON	0	0	0	0	0	NOON
PM	464	0	143	0	774	PM

White Rock Rd — EASTBOUND

AM	NOON	PM	
785	0	672	⇦
1	0	0	↰ 0
566	0	659	↑ 0
224	0	643	→ 0
0	0	0	↱ 0
AM	NOON	PM	

White Rock Rd — WESTBOUND

PM	NOON	AM	
115	0	165	0 ↱
208	0	343	0 ←
0	0	0	0 ↰
3	0	0	0 ↰
789	0	267	⇨
PM	NOON	AM	

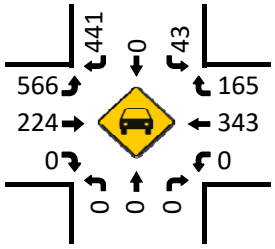
CONTROL: 0

	AM	NOON	PM
TEV	1783	0	2235
PHF	0.91		0.96

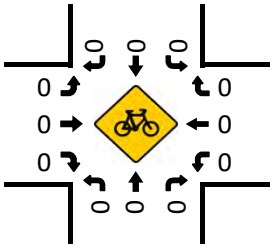
Prairie City Rd — NORTHBOUND

PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

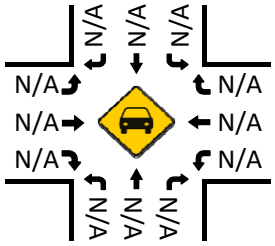
Total Vehicles (AM)



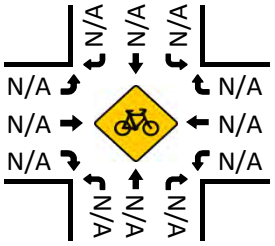
Bikes (AM)



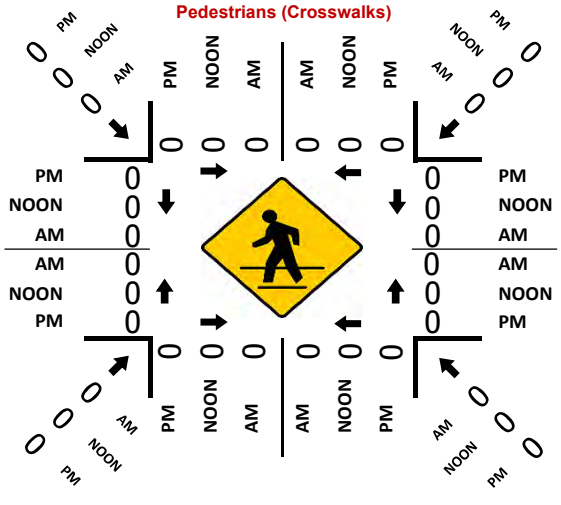
Total Vehicles (Noon)



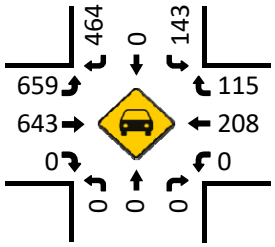
Bikes (NOON)



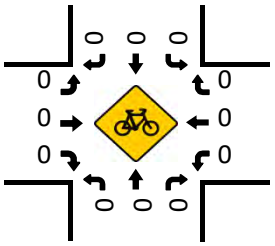
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by NDS/ATD

VOLUME

Jackson Rd/SR-16 Bet. Bradshaw Rd & Excelsior Rd

Day: Thursday
Date: 9/28/2017

City: Sacramento
Project #: CA17_7694_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	6,048	6,293	12,341

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			8		2		10		12:00			93		89		182	
00:15			10		6		16		12:15			104		81		185	
00:30			7		8		15		12:30			82		120		202	
00:45			4	29	9	25	13	54	12:45			69	348	95	385	164	733
01:00			4		7		11		13:00			97		91		188	
01:15			6		7		13		13:15			89		101		190	
01:30			6		6		12		13:30			101		78		179	
01:45			7	23	4	24	11	47	13:45			100	387	84	354	184	741
02:00			3		2		5		14:00			108		69		177	
02:15			3		4		7		14:15			100		98		198	
02:30			3		10		13		14:30			90		93		183	
02:45			4	13	10	26	14	39	14:45			96	394	100	360	196	754
03:00			4		5		9		15:00			113		108		221	
03:15			4		13		17		15:15			136		79		215	
03:30			3		14		17		15:30			129		102		231	
03:45			8	19	15	47	23	66	15:45			132	510	89	378	221	888
04:00			4		14		18		16:00			146		79		225	
04:15			5		25		30		16:15			164		93		257	
04:30			10		44		54		16:30			133		83		216	
04:45			17	36	27	110	44	146	16:45			178	621	76	331	254	952
05:00			19		39		58		17:00			140		93		233	
05:15			40		50		90		17:15			133		111		244	
05:30			31		78		109		17:30			164		77		241	
05:45			31	121	100	267	131	388	17:45			148	585	80	361	228	946
06:00			57		97		154		18:00			132		75		207	
06:15			57		153		210		18:15			109		56		165	
06:30			70		162		232		18:30			98		53		151	
06:45			54	238	105	517	159	755	18:45			82	421	61	245	143	666
07:00			52		93		145		19:00			94		50		144	
07:15			53		107		160		19:15			90		45		135	
07:30			69		74		143		19:30			72		47		119	
07:45			69	243	121	395	190	638	19:45			71	327	47	189	118	516
08:00			76		145		221		20:00			64		38		102	
08:15			69		141		210		20:15			40		39		79	
08:30			76		113		189		20:30			57		27		84	
08:45			57	278	141	540	198	818	20:45			64	225	20	124	84	349
09:00			73		157		230		21:00			48		28		76	
09:15			75		129		204		21:15			60		31		91	
09:30			64		160		224		21:30			39		29		68	
09:45			64	276	166	612	230	888	21:45			44	191	18	106	62	297
10:00			74		110		184		22:00			36		23		59	
10:15			67		132		199		22:15			37		24		61	
10:30			74		101		175		22:30			24		9		33	
10:45			68	283	92	435	160	718	22:45			19	116	6	62	25	178
11:00			84		91		175		23:00			10		12		22	
11:15			86		98		184		23:15			13		8		21	
11:30			64		99		163		23:30			13		8		21	
11:45			84	318	76	364	160	682	23:45			10	46	8	36	18	82
TOTALS				1877		3362		5239	TOTALS				4171		2931		7102
SPLIT %				35.8%		64.2%		42.5%	SPLIT %				58.7%		41.3%		57.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	6,048	6,293	12,341

AM Peak Hour			11:45	09:00	09:00	PM Peak Hour			16:00	12:30	16:45
AM Pk Volume			363	612	888	PM Pk Volume			621	407	972
Pk Hr Factor			0.873	0.922	0.965	Pk Hr Factor			0.872	0.848	0.957
7 - 9 Volume	0	0	521	935	1456	4 - 6 Volume	0	0	1206	692	1898
7 - 9 Peak Hour			07:45	08:00	08:00	4 - 6 Peak Hour			16:00	16:30	16:45
7 - 9 Pk Volume	0	0	290	540	818	4 - 6 Pk Volume	0	0	621	363	972
Pk Hr Factor	0.000	0.000	0.954	0.931	0.925	Pk Hr Factor	0.000	0.000	0.872	0.818	0.957

Prepared by NDS/ATD

VOLUME

Jackson Rd/SR-16 Bet. Excelsior Rd & Eagles Nest Rd

Day: Thursday
Date: 9/28/2017

City: Sacramento
Project #: CA17_7694_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	5,842	5,918	11,760

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			7		2		9		12:00			97		89		186	
00:15			8		6		14		12:15			101		78		179	
00:30			11		9		20		12:30			96		98		194	
00:45			11	37	10	27	21	64	12:45			74	368	94	359	168	727
01:00			3		5		8		13:00			75		88		163	
01:15			4		4		8		13:15			98		95		193	
01:30			6		11		17		13:30			86		90		176	
01:45			8	21	4	24	12	45	13:45			82	341	87	360	169	701
02:00			3		4		7		14:00			82		84		166	
02:15			2		2		4		14:15			90		104		194	
02:30			2		11		13		14:30			79		114		193	
02:45			2	9	8	25	10	34	14:45			94	345	110	412	204	757
03:00			5		3		8		15:00			97		95		192	
03:15			3		10		13		15:15			120		113		233	
03:30			2		17		19		15:30			109		91		200	
03:45			6	16	14	44	20	60	15:45			125	451	96	395	221	846
04:00			10		12		22		16:00			140		103		243	
04:15			6		28		34		16:15			157		78		235	
04:30			9		41		50		16:30			122		86		208	
04:45			20	45	22	103	42	148	16:45			140	559	106	373	246	932
05:00			15		34		49		17:00			130		107		237	
05:15			43		44		87		17:15			140		108		248	
05:30			46		87		133		17:30			126		84		210	
05:45			44	148	97	262	141	410	17:45			134	530	70	369	204	899
06:00			61		102		163		18:00			114		85		199	
06:15			70		144		214		18:15			106		69		175	
06:30			75		164		239		18:30			88		59		147	
06:45			92	298	150	560	242	858	18:45			88	396	61	274	149	670
07:00			63		138		201		19:00			52		36		88	
07:15			69		121		190		19:15			71		48		119	
07:30			86		117		203		19:30			58		35		93	
07:45			87	305	90	466	177	771	19:45			60	241	30	149	90	390
08:00			86		96		182		20:00			71		19		90	
08:15			80		101		181		20:15			40		33		73	
08:30			84		75		159		20:30			58		35		93	
08:45			70	320	100	372	170	692	20:45			62	231	22	109	84	340
09:00			82		99		181		21:00			43		22		65	
09:15			66		92		158		21:15			39		20		59	
09:30			90		101		191		21:30			37		15		52	
09:45			66	304	102	394	168	698	21:45			34	153	27	84	61	237
10:00			83		79		162		22:00			30		22		52	
10:15			71		86		157		22:15			21		29		50	
10:30			73		94		167		22:30			22		14		36	
10:45			68	295	67	326	135	621	22:45			16	89	11	76	27	165
11:00			74		89		163		23:00			12		11		23	
11:15			80		91		171		23:15			14		4		18	
11:30			61		92		153		23:30			12		5		17	
11:45			79	294	60	332	139	626	23:45			8	46	3	23	11	69
TOTALS				2092		2935		**5027**	**TOTALS**				3750		2983		**6733**
SPLIT %				41.6%		58.4%		**42.7%**	**SPLIT %**				55.7%		44.3%		**57.3%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	5,842	5,918	11,760

AM Peak Hour			11:45	06:15	**06:15**	**PM Peak Hour**			16:00	14:30	**16:45**
AM Pk Volume			373	596	**896**	**PM Pk Volume**			559	432	**941**
Pk Hr Factor			0.923	0.909	**0.926**	**Pk Hr Factor**			0.890	0.947	**0.949**
7 - 9 Volume	0	0	625	838	**1463**	**4 - 6 Volume**	0	0	1089	742	**1831**
7 - 9 Peak Hour			07:30	07:00	**07:00**	**4 - 6 Peak Hour**			16:00	16:30	**16:45**
7 - 9 Pk Volume	0	0	339	466	**771**	**4 - 6 Pk Volume**	0	0	559	407	**941**
Pk Hr Factor	0.000	0.000	0.974	0.844	**0.950**	**Pk Hr Factor**	0.000	0.000	0.890	0.942	**0.949**

Prepared by NDS/ATD

VOLUME

Jackson Rd/SR-16 Bet. Eagles Nest Rd & Sunrise Blvd

Day: Thursday
Date: 9/28/2017

City: Sacramento
Project #: CA17_7694_003

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	6,136	5,670	11,806

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00					9		1		10		12:00					92		83		175	
00:15					7		9		16		12:15					106		83		189	
00:30					7		8		15		12:30					89		97		186	
00:45					12	35	9	27	21	62	12:45					83	370	87	350	170	720
01:00					1		3		4		13:00					106		73		179	
01:15					4		3		7		13:15					97		102		199	
01:30					5		12		17		13:30					126		77		203	
01:45					9	19	3	21	12	40	13:45					96	425	86	338	182	763
02:00					5		3		8		14:00					99		77		176	
02:15					2		1		3		14:15					99		93		192	
02:30					2		11		13		14:30					82		109		191	
02:45					2	11	8	23	10	34	14:45					108	388	93	372	201	760
03:00					2		4		6		15:00					95		99		194	
03:15					3		8		11		15:15					142		72		214	
03:30					2		17		19		15:30					135		84		219	
03:45					5	12	14	43	19	55	15:45					126	498	81	336	207	834
04:00					7		12		19		16:00					129		65		194	
04:15					4		33		37		16:15					141		98		239	
04:30					7		37		44		16:30					152		100		252	
04:45					16	34	32	114	48	148	16:45					130	552	56	319	186	871
05:00					17		34		51		17:00					132		68		200	
05:15					34		46		80		17:15					138		64		202	
05:30					50		83		133		17:30					135		56		191	
05:45					52	153	99	262	151	415	17:45					142	547	75	263	217	810
06:00					57		114		171		18:00					119		71		190	
06:15					82		160		242		18:15					119		43		162	
06:30					70		181		251		18:30					90		50		140	
06:45					87	296	153	608	240	904	18:45					86	414	52	216	138	630
07:00					69		136		205		19:00					82		38		120	
07:15					81		137		218		19:15					73		29		102	
07:30					80		120		200		19:30					70		37		107	
07:45					78	308	102	495	180	803	19:45					57	282	38	142	95	424
08:00					88		97		185		20:00					61		35		96	
08:15					86		92		178		20:15					39		24		63	
08:30					86		80		166		20:30					64		17		81	
08:45					59	319	90	359	149	678	20:45					49	213	23	99	72	312
09:00					96		100		196		21:00					50		27		77	
09:15					73		101		174		21:15					46		24		70	
09:30					74		112		186		21:30					35		22		57	
09:45					76	319	96	409	172	728	21:45					37	168	21	94	58	262
10:00					76		75		151		22:00					34		21		55	
10:15					76		102		178		22:15					33		14		47	
10:30					80		97		177		22:30					20		7		27	
10:45					70	302	73	347	143	649	22:45					20	107	9	51	29	158
11:00					87		93		180		23:00					16		5		21	
11:15					71		93		164		23:15					10		10		20	
11:30					87		105		192		23:30					14		7		21	
11:45					69	314	61	352	130	666	23:45					10	50	8	30	18	80
TOTALS						2122		3060		5182	TOTALS						4014		2610		6624
SPLIT %						40.9%		59.1%		43.9%	SPLIT %						60.6%		39.4%		56.1%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	6,136	5,670	11,806

AM Peak Hour			11:45	06:15	06:15	PM Peak Hour			16:15	14:15	15:45
AM Pk Volume			356	630	938	PM Pk Volume			555	394	892
Pk Hr Factor			0.840	0.870	0.934	Pk Hr Factor			0.913	0.904	0.885
7 - 9 Volume	0	0	627	854	1481	4 - 6 Volume	0	0	1099	582	1681
7 - 9 Peak Hour			07:45	07:00	07:00	4 - 6 Peak Hour			16:15	16:15	16:15
7 - 9 Pk Volume	0	0	338	495	803	4 - 6 Pk Volume	0	0	555	322	877
Pk Hr Factor	0.000	0.000	0.960	0.903	0.921	Pk Hr Factor	0.000	0.000	0.913	0.805	0.870

Prepared by NDS/ATD

VOLUME

Jackson Rd/SR-16 Bet. Sunrise Blvd & Grant Line Rd

Day: Thursday
Date: 9/28/2017

City: Sacramento
Project #: CA17_7694_004

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	7,464	7,516	14,980

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			7		5		12		12:00			117		105		222	
00:15			5		10		15		12:15			127		124		251	
00:30			7		9		16		12:30			105		123		228	
00:45			12	31	9	33	21	64	12:45			107	456	128	480	235	936
01:00			1		3		4		13:00			125		92		217	
01:15			4		2		6		13:15			122		113		235	
01:30			7		9		16		13:30			142		97		239	
01:45			9	21	3	17	12	38	13:45			129	518	112	414	241	932
02:00			2		4		6		14:00			133		106		239	
02:15			6		3		9		14:15			114		114		228	
02:30			2		11		13		14:30			126		124		250	
02:45			5	15	7	25	12	40	14:45			103	476	112	456	215	932
03:00			1		5		6		15:00			121		114		235	
03:15			5		10		15		15:15			163		139		302	
03:30			1		21		22		15:30			163		109		272	
03:45			7	14	15	51	22	65	15:45			141	588	119	481	260	1069
04:00			5		13		18		16:00			178		95		273	
04:15			7		31		38		16:15			173		114		287	
04:30			12		32		44		16:30			184		108		292	
04:45			20	44	35	111	55	155	16:45			179	714	89	406	268	1120
05:00			30		47		77		17:00			172		90		262	
05:15			61		78		139		17:15			152		92		244	
05:30			60		103		163		17:30			159		76		235	
05:45			56	207	108	336	164	543	17:45			133	616	114	372	247	988
06:00			66		140		206		18:00			179		85		264	
06:15			100		216		316		18:15			137		80		217	
06:30			90		194		284		18:30			128		78		206	
06:45			98	354	186	736	284	1090	18:45			117	561	62	305	179	866
07:00			82		200		282		19:00			109		54		163	
07:15			76		185		261		19:15			87		57		144	
07:30			88		184		272		19:30			70		70		140	
07:45			85	331	148	717	233	1048	19:45			79	345	46	227	125	572
08:00			76		133		209		20:00			64		52		116	
08:15			80		123		203		20:15			54		30		84	
08:30			103		109		212		20:30			81		36		117	
08:45			80	339	135	500	215	839	20:45			67	266	45	163	112	429
09:00			92		120		212		21:00			64		35		99	
09:15			91		121		212		21:15			59		32		91	
09:30			100		138		238		21:30			51		31		82	
09:45			112	395	134	513	246	908	21:45			43	217	19	117	62	334
10:00			81		126		207		22:00			37		26		63	
10:15			82		121		203		22:15			39		29		68	
10:30			118		111		229		22:30			29		14		43	
10:45			92	373	122	480	214	853	22:45			24	129	11	80	35	209
11:00			102		138		240		23:00			17		5		22	
11:15			95		107		202		23:15			13		15		28	
11:30			111		138		249		23:30			21		7		28	
11:45			81	389	77	460	158	849	23:45			14	65	9	36	23	101
TOTALS				2513		3979		6492	TOTALS				4951		3537		8488
SPLIT %				38.7%		61.3%		43.3%	SPLIT %				58.3%		41.7%		56.7%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	7,464	7,516	14,980

AM Peak Hour			11:30	06:15	06:15	PM Peak Hour			16:00	14:30	16:00
AM Pk Volume			436	796	1166	PM Pk Volume			714	489	1120
Pk Hr Factor			0.858	0.921	0.922	Pk Hr Factor			0.970	0.879	0.959
7 - 9 Volume	0	0	670	1217	1887	4 - 6 Volume	0	0	1330	778	2108
7 - 9 Peak Hour			07:45	07:00	07:00	4 - 6 Peak Hour			16:00	16:00	16:00
7 - 9 Pk Volume	0	0	344	717	1048	4 - 6 Pk Volume	0	0	714	406	1120
Pk Hr Factor	0.000	0.000	0.835	0.896	0.929	Pk Hr Factor	0.000	0.000	0.970	0.890	0.959

Prepared by NDS/ATD

VOLUME

Excelsior Rd Bet. Jackson Rd/SR-16 & Kiefer Blvd

Day: Thursday
Date: 9/28/2017

City: Sacramento
Project #: CA17_7694_005

DAILY TOTALS	NB	SB	EB	WB	Total
	2,264	2,288	0	0	4,552

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0				0		12:00	16		22				38	
00:15	1		3				4		12:15	30		19				49	
00:30	0		0				0		12:30	13		18				31	
00:45	1	2	2	5			3	7	12:45	15	74	28	87			43	161
01:00	2		2				4		13:00	11		24				35	
01:15	2		3				5		13:15	14		19				33	
01:30	1		1				2		13:30	12		19				31	
01:45	0	5	1	7			1	12	13:45	30	67	17	79			47	146
02:00	0		1				1		14:00	26		32				58	
02:15	0		0				0		14:15	15		23				38	
02:30	0		2				2		14:30	30		40				70	
02:45	2	2	1	4			3	6	14:45	16	87	40	135			56	222
03:00	0		3				3		15:00	16		41				57	
03:15	0		1				1		15:15	26		46				72	
03:30	2		2				4		15:30	20		46				66	
03:45	2	4	0	6			2	10	15:45	20	82	60	193			80	275
04:00	0		5				5		16:00	34		78				112	
04:15	1		4				5		16:15	33		103				136	
04:30	2		10				12		16:30	26		95				121	
04:45	5	8	4	23			9	31	16:45	30	123	155	431			185	554
05:00	3		7				10		17:00	34		133				167	
05:15	4		6				10		17:15	24		174				198	
05:30	13		6				19		17:30	32		112				144	
05:45	14	34	13	32			27	66	17:45	24	114	73	492			97	606
06:00	14		17				31		18:00	21		45				66	
06:15	33		18				51		18:15	19		34				53	
06:30	42		25				67		18:30	19		23				42	
06:45	70	159	24	84			94	243	18:45	17	76	29	131			46	207
07:00	87		39				126		19:00	28		28				56	
07:15	138		35				173		19:15	22		18				40	
07:30	161		30				191		19:30	20		10				30	
07:45	184	570	29	133			213	703	19:45	21	91	6	62			27	153
08:00	147		33				180		20:00	11		8				19	
08:15	130		22				152		20:15	13		11				24	
08:30	83		22				105		20:30	11		11				22	
08:45	58	418	20	97			78	515	20:45	8	43	5	35			13	78
09:00	42		18				60		21:00	12		13				25	
09:15	23		17				40		21:15	20		9				29	
09:30	20		13				33		21:30	9		10				19	
09:45	18	103	20	68			38	171	21:45	11	52	11	43			22	95
10:00	22		13				35		22:00	10		2				12	
10:15	10		15				25		22:15	8		2				10	
10:30	13		17				30		22:30	6		3				9	
10:45	12	57	10	55			22	112	22:45	2	26	4	11			6	37
11:00	17		13				30		23:00	2		4				6	
11:15	12		10				22		23:15	3		4				7	
11:30	9		22				31		23:30	3		2				5	
11:45	19	57	18	63			37	120	23:45	2	10	2	12			4	22
TOTALS		1419		577				**1996**	**TOTALS**		845		1711				**2556**
SPLIT %		71.1%		28.9%				**43.8%**	**SPLIT %**		33.1%		66.9%				**56.2%**

DAILY TOTALS	NB	SB	EB	WB	Total
	2,264	2,288	0	0	4,552

AM Peak Hour	07:15	07:00				**07:15**	**PM Peak Hour**	16:00	16:45				**16:45**
AM Pk Volume	630	133				**757**	**PM Pk Volume**	123	574				**694**
Pk Hr Factor	0.856	0.853				**0.888**	**Pk Hr Factor**	0.904	0.825				**0.876**
7 - 9 Volume	988	230	0	0		**1218**	**4 - 6 Volume**	237	923	0	0		**1160**
7 - 9 Peak Hour	07:15	07:00				**07:15**	**4 - 6 Peak Hour**	16:00	16:45				**16:45**
7 - 9 Pk Volume	630	133	0	0		**757**	**4 - 6 Pk Volume**	123	574	0	0		**694**
Pk Hr Factor	0.856	0.853	0.000	0.000		**0.888**	**Pk Hr Factor**	0.904	0.825	0.000	0.000		**0.876**

Prepared by NDS/ATD

VOLUME

Kiefer Blvd Bet. Grant Line Rd & Jackson Rd/SR-16

Day: Thursday
Date: 9/28/2017

City: Sloughhouse
Project #: CA17_7694_006

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	537	404	941

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00					0		0		0		12:00					5		3		8	
00:15					0		0		0		12:15					5		5		10	
00:30					0		0		0		12:30					1		1		2	
00:45					1	1	0		1	1	12:45					8	19	4	13	12	32
01:00					1		1		2		13:00					4		4		8	
01:15					0		0		0		13:15					5		5		10	
01:30					0		0		0		13:30					3		8		11	
01:45					0	1	0	1	0	2	13:45					5	17	3	20	8	37
02:00					0		0		0		14:00					2		2		4	
02:15					0		0		0		14:15					10		4		14	
02:30					1		0		1		14:30					5		4		9	
02:45					0	1	0		0	1	14:45					7	24	3	13	10	37
03:00					0		0		0		15:00					10		4		14	
03:15					0		0		0		15:15					9		10		19	
03:30					1		1		2		15:30					10		3		13	
03:45					0	1	0	1	0	2	15:45					18	47	5	22	23	69
04:00					0		0		0		16:00					18		6		24	
04:15					0		1		1		16:15					17		7		24	
04:30					0		1		1		16:30					29		3		32	
04:45					0		0	2	0	2	16:45					43	107	4	20	47	127
05:00					2		3		5		17:00					24		8		32	
05:15					2		3		5		17:15					58		2		60	
05:30					1		2		3		17:30					59		1		60	
05:45					3	8	4	12	7	20	17:45					31	172	4	15	35	187
06:00					2		2		4		18:00					13		2		15	
06:15					3		9		12		18:15					16		3		19	
06:30					1		19		20		18:30					10		2		12	
06:45					3	9	21	51	24	60	18:45					5	44	3	10	8	54
07:00					3		15		18		19:00					4		2		6	
07:15					7		28		35		19:15					2		3		5	
07:30					2		32		34		19:30					2		0		2	
07:45					2	14	36	111	38	125	19:45					1	9	0	5	1	14
08:00					3		19		22		20:00					2		0		2	
08:15					2		16		18		20:15					3		0		3	
08:30					10		7		17		20:30					4		0		4	
08:45					4	19	7	49	11	68	20:45					3	12	0		3	12
09:00					2		10		12		21:00					1		2		3	
09:15					1		6		7		21:15					1		0		1	
09:30					2		9		11		21:30					3		2		5	
09:45					2	7	2	27	4	34	21:45					0	5	0	4	0	9
10:00					2		6		8		22:00					2		0		2	
10:15					2		2		4		22:15					2		1		3	
10:30					1		3		4		22:30					0		0		0	
10:45					3	8	4	15	7	23	22:45					1	5	0	1	1	6
11:00					1		2		3		23:00					0		0		0	
11:15					1		2		3		23:15					0		0		0	
11:30					1		4		5		23:30					1		0		1	
11:45					3	6	4	12	7	18	23:45					0	1	0		0	1
TOTALS						75		281		356	TOTALS						462		123		585
SPLIT %						21.1%		78.9%		37.8%	SPLIT %						79.0%		21.0%		62.2%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	537	404	941

AM Peak Hour			08:00	07:15	07:15	PM Peak Hour			16:45	15:15	16:45
AM Pk Volume			19	115	129	PM Pk Volume			184	24	199
Pk Hr Factor			0.475	0.799	0.849	Pk Hr Factor			0.780	0.600	0.829
7 - 9 Volume	0	0	33	160	193	4 - 6 Volume	0	0	279	35	314
7 - 9 Peak Hour			08:00	07:15	07:15	4 - 6 Peak Hour			16:45	16:15	16:45
7 - 9 Pk Volume	0	0	19	115	129	4 - 6 Pk Volume	0	0	184	22	199
Pk Hr Factor	0.000	0.000	0.475	0.799	0.849	Pk Hr Factor	0.000	0.000	0.780	0.688	0.829

Prepared by NDS/ATD

VOLUME

International Dr Bet. Zinfandel Dr & Sunrise Blvd

Day: Tuesday
Date: 9/26/2017

City: Rancho Cordova
Project #: CA17_7694_007

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	5,655	5,591	11,246

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			8		1		9		12:00			101		121		222	
00:15			2		7		9		12:15			100		100		200	
00:30			1		3		4		12:30			105		121		226	
00:45			0	11	2	13	2	24	12:45			108	414	102	444	210	858
01:00			3		3		6		13:00			103		103		206	
01:15			1		4		5		13:15			85		89		174	
01:30			0		4		4		13:30			105		88		193	
01:45			3	7	2	13	5	20	13:45			82	375	77	357	159	732
02:00			1		0		1		14:00			81		85		166	
02:15			5		0		5		14:15			71		69		140	
02:30			0		0		0		14:30			78		114		192	
02:45			2	8	3	3	5	11	14:45			90	320	98	366	188	686
03:00			1		0		1		15:00			79		104		183	
03:15			3		0		3		15:15			107		100		207	
03:30			2		0		2		15:30			115		118		233	
03:45			2	8	4	4	6	12	15:45			85	386	140	462	225	848
04:00			5		5		10		16:00			125		146		271	
04:15			7		2		9		16:15			124		116		240	
04:30			15		4		19		16:30			128		149		277	
04:45			17	44	5	16	22	60	16:45			137	514	147	558	284	1072
05:00			15		8		23		17:00			128		217		345	
05:15			29		9		38		17:15			134		184		318	
05:30			32		11		43		17:30			125		126		251	
05:45			87	163	22	50	109	213	17:45			79	466	96	623	175	1089
06:00			65		26		91		18:00			100		90		190	
06:15			67		37		104		18:15			73		75		148	
06:30			79		53		132		18:30			54		75		129	
06:45			122	333	83	199	205	532	18:45			50	277	64	304	114	581
07:00			89		98		187		19:00			49		70		119	
07:15			109		93		202		19:15			43		46		89	
07:30			126		127		253		19:30			34		35		69	
07:45			184	508	124	442	308	950	19:45			35	161	40	191	75	352
08:00			145		101		246		20:00			27		45		72	
08:15			118		122		240		20:15			18		30		48	
08:30			118		77		195		20:30			18		20		38	
08:45			110	491	71	371	181	862	20:45			26	89	21	116	47	205
09:00			79		69		148		21:00			15		28		43	
09:15			68		51		119		21:15			25		18		43	
09:30			70		56		126		21:30			16		13		29	
09:45			91	308	57	233	148	541	21:45			10	66	17	76	27	142
10:00			66		66		132		22:00			8		11		19	
10:15			67		67		134		22:15			17		11		28	
10:30			91		77		168		22:30			14		7		21	
10:45			64	288	90	300	154	588	22:45			12	51	9	38	21	89
11:00			80		78		158		23:00			6		10		16	
11:15			77		88		165		23:15			7		5		12	
11:30			91		97		188		23:30			3		5		8	
11:45			91	339	125	388	216	727	23:45			12	28	4	24	16	52
TOTALS				2508		2032		4540	TOTALS				3147		3559		6706
SPLIT %				55.2%		44.8%		40.4%	SPLIT %				46.9%		53.1%		59.6%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	5,655	5,591	11,246

AM Peak Hour			07:30	07:30	07:30	PM Peak Hour			16:30	16:30	16:30
AM Pk Volume			573	474	1047	PM Pk Volume			527	697	1224
Pk Hr Factor			0.779	0.933	0.850	Pk Hr Factor			0.962	0.803	0.887
7 - 9 Volume	0	0	999	813	1812	4 - 6 Volume	0	0	980	1181	2161
7 - 9 Peak Hour			07:30	07:30	07:30	4 - 6 Peak Hour			16:30	16:30	16:30
7 - 9 Pk Volume	0	0	573	474	1047	4 - 6 Pk Volume	0	0	527	697	1224
Pk Hr Factor	0.000	0.000	0.779	0.933	0.850	Pk Hr Factor	0.000	0.000	0.962	0.803	0.887

ATTACHMENT 4

Prepared by NDS/ATD

VOLUME

Mather Blvd Bet. Femoyer St & Douglas Rd

Day: Thursday
Date: 9/28/2017

City: Rancho Cordova
Project #: CA17_7694_008

DAILY TOTALS	NB	SB	EB	WB	Total
	2,937	2,603	0	0	5,540

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	1		6				7		12:00	22		50				72	
00:15	1		2				3		12:15	29		51				80	
00:30	4		2				6		12:30	32		58				90	
00:45	1	7	2	12			3	19	12:45	34	117	54	213			88	330
01:00	1		2				3		13:00	25		30				55	
01:15	1		2				3		13:15	31		24				55	
01:30	0		0				0		13:30	23		23				46	
01:45	0	2	3	7			3	9	13:45	27	106	28	105			55	211
02:00	1		1				2		14:00	27		33				60	
02:15	0		1				1		14:15	23		30				53	
02:30	0		1				1		14:30	41		51				92	
02:45	0	1	1	4			1	5	14:45	48	139	36	150			84	289
03:00	5		0				5		15:00	39		47				86	
03:15	2		0				2		15:15	25		59				84	
03:30	3		0				3		15:30	31		65				96	
03:45	7	17	1	1			8	18	15:45	26	121	63	234			89	355
04:00	1		0				1		16:00	31		112				143	
04:15	2		1				3		16:15	32		97				129	
04:30	2		1				3		16:30	38		163				201	
04:45	11	16	0	2			11	18	16:45	28	129	101	473			129	602
05:00	7		2				9		17:00	31		144				175	
05:15	14		1				15		17:15	35		128				163	
05:30	24		4				28		17:30	43		96				139	
05:45	37	82	3	10			40	92	17:45	29	138	69	437			98	575
06:00	37		7				44		18:00	22		56				78	
06:15	58		11				69		18:15	22		47				69	
06:30	84		9				93		18:30	20		39				59	
06:45	122	301	6	33			128	334	18:45	21	85	27	169			48	254
07:00	141		20				161		19:00	20		36				56	
07:15	150		19				169		19:15	23		31				54	
07:30	183		20				203		19:30	18		32				50	
07:45	214	688	27	86			241	774	19:45	12	73	26	125			38	198
08:00	163		30				193		20:00	12		16				28	
08:15	149		49				198		20:15	12		22				34	
08:30	100		27				127		20:30	13		13				26	
08:45	55	467	22	128			77	595	20:45	11	48	21	72			32	120
09:00	60		20				80		21:00	9		12				21	
09:15	42		11				53		21:15	4		12				16	
09:30	34		13				47		21:30	9		17				26	
09:45	30	166	18	62			48	228	21:45	4	26	12	53			16	79
10:00	19		8				27		22:00	4		16				20	
10:15	25		22				47		22:15	4		12				16	
10:30	24		13				37		22:30	3		10				13	
10:45	28	96	22	65			50	161	22:45	1	12	5	43			6	55
11:00	17		25				42		23:00	5		1				6	
11:15	21		20				41		23:15	3		5				8	
11:30	19		33				52		23:30	4		5				9	
11:45	26	83	23	101			49	184	23:45	5	17	7	18			12	35
TOTALS		1926		511				**2437**	**TOTALS**		1011		2092				**3103**
SPLIT %		79.0%		21.0%				**44.0%**	**SPLIT %**		32.6%		67.4%				**56.0%**

DAILY TOTALS	NB	SB	EB	WB	Total
	2,937	2,603	0	0	5,540

AM Peak Hour	07:15	11:45					**07:30**		**PM Peak Hour**	14:30	16:30					**16:30**		
AM Pk Volume	710	182					**835**		**PM Pk Volume**	153	536					**668**		
Pk Hr Factor	0.829	0.784					**0.866**		**Pk Hr Factor**	0.797	0.822					**0.831**		
7 - 9 Volume	1155	214	0	0			**1369**		**4 - 6 Volume**	267	910	0	0			**1177**		
7 - 9 Peak Hour	07:15	07:45					**07:30**		**4 - 6 Peak Hour**	17:00	16:30					**16:30**		
7 - 9 Pk Volume	710	133	0	0			**835**		**4 - 6 Pk Volume**	138	536	0	0			**668**		
Pk Hr Factor	0.829	0.679	0.000	0.000			**0.866**		**Pk Hr Factor**	0.802	0.822	0.000	0.000			**0.831**		

Prepared by NDS/ATD

VOLUME

Douglas Rd Bet. Mather Blvd & Sunrise Blvd

Day: Thursday
Date: 9/28/2017

City: Rancho Cordova
Project #: CA17_7694_009

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	6,370	6,034	12,404

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			14		6		20		12:00			101		62		163	
00:15			11		5		16		12:15			71		80		151	
00:30			9		4		13		12:30			66		79		145	
00:45			8	42	5	20	13	62	12:45			81	319	77	298	158	617
01:00			5		4		9		13:00			60		81		141	
01:15			7		3		10		13:15			69		71		140	
01:30			5		1		6		13:30			84		87		171	
01:45			4	21	3	11	7	32	13:45			103	316	76	315	179	631
02:00			4		1		5		14:00			97		77		174	
02:15			4		3		7		14:15			103		75		178	
02:30			1		2		3		14:30			149		100		249	
02:45			3	12	3	9	6	21	14:45			127	476	65	317	192	793
03:00			4		3		7		15:00			97		74		171	
03:15			3		4		7		15:15			124		59		183	
03:30			1		7		8		15:30			124		98		222	
03:45			10	18	4	18	14	36	15:45			141	486	91	322	232	808
04:00			4		8		12		16:00			144		98		242	
04:15			1		5		6		16:15			184		89		273	
04:30			6		7		13		16:30			203		100		303	
04:45			16	27	13	33	29	60	16:45			180	711	79	366	259	1077
05:00			17		18		35		17:00			194		123		317	
05:15			14		35		49		17:15			202		98		300	
05:30			22		57		79		17:30			176		91		267	
05:45			29	82	70	180	99	262	17:45			166	738	120	432	286	1170
06:00			35		72		107		18:00			133		94		227	
06:15			40		102		142		18:15			105		90		195	
06:30			49		129		178		18:30			136		65		201	
06:45			60	184	178	481	238	665	18:45			102	476	65	314	167	790
07:00			51		177		228		19:00			111		69		180	
07:15			66		206		272		19:15			116		47		163	
07:30			87		196		283		19:30			108		54		162	
07:45			80	284	221	800	301	1084	19:45			96	431	63	233	159	664
08:00			76		185		261		20:00			84		50		134	
08:15			107		195		302		20:15			61		43		104	
08:30			86		125		211		20:30			65		42		107	
08:45			66	335	125	630	191	965	20:45			70	280	32	167	102	447
09:00			58		122		180		21:00			52		31		83	
09:15			53		87		140		21:15			66		23		89	
09:30			71		87		158		21:30			46		26		72	
09:45			62	244	69	365	131	609	21:45			41	205	20	100	61	305
10:00			61		60		121		22:00			38		25		63	
10:15			62		63		125		22:15			32		21		53	
10:30			65		61		126		22:30			32		12		44	
10:45			54	242	64	248	118	490	22:45			27	129	10	68	37	197
11:00			56		72		128		23:00			15		3		18	
11:15			65		54		119		23:15			11		16		27	
11:30			64		79		143		23:30			15		5		20	
11:45			68	253	65	270	133	523	23:45			18	59	13	37	31	96
TOTALS				1744		3065		**4809**	**TOTALS**				4626		2969		**7595**
SPLIT %				36.3%		63.7%		**38.8%**	**SPLIT %**				60.9%		39.1%		**61.2%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	6,370	6,034	12,404

AM Peak Hour			07:30	07:15	**07:30**	**PM Peak Hour**			16:30	17:00	**16:30**
AM Pk Volume			350	808	**1147**	**PM Pk Volume**			779	432	**1179**
Pk Hr Factor			0.818	0.914	**0.950**	**Pk Hr Factor**			0.959	0.878	**0.930**
7 - 9 Volume	0	0	619	1430	**2049**	**4 - 6 Volume**	0	0	1449	798	**2247**
7 - 9 Peak Hour			07:30	07:15	**07:30**	**4 - 6 Peak Hour**			16:30	17:00	**16:30**
7 - 9 Pk Volume	0	0	350	808	**1147**	**4 - 6 Pk Volume**	0	0	779	432	**1179**
Pk Hr Factor	0.000	0.000	0.818	0.914	**0.950**	**Pk Hr Factor**	0.000	0.000	0.959	0.878	**0.930**

Prepared by NDS/ATD

VOLUME

Douglas Rd Bet. Sunrise Blvd & Grant Line Rd

Day: Thursday
Date: 9/28/2017

City: Rancho Cordova
Project #: CA17_7694_010

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	3,825	3,685	7,510

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			7		4		11		12:00			47		38		85	
00:15			4		4		8		12:15			41		46		87	
00:30			2		1		3		12:30			46		46		92	
00:45			3	16	1	10	4	26	12:45			54	188	43	173	97	361
01:00			3		2		5		13:00			55		48		103	
01:15			1		1		2		13:15			48		48		96	
01:30			1		1		2		13:30			62		54		116	
01:45			1	6	1	5	2	11	13:45			55	220	70	220	125	440
02:00			3		2		5		14:00			67		55		122	
02:15			1		2		3		14:15			59		53		112	
02:30			1		2		3		14:30			64		52		116	
02:45			1	6	2	8	3	14	14:45			67	257	56	216	123	473
03:00			1		3		4		15:00			58		55		113	
03:15			1		2		3		15:15			61		55		116	
03:30			1		6		7		15:30			72		62		134	
03:45			5	8	2	13	7	21	15:45			79	270	60	232	139	502
04:00			1		7		8		16:00			87		82		169	
04:15			1		8		9		16:15			97		71		168	
04:30			5		11		16		16:30			105		53		158	
04:45			8	15	9	35	17	50	16:45			99	388	61	267	160	655
05:00			6		15		21		17:00			116		89		205	
05:15			6		14		20		17:15			134		81		215	
05:30			21		24		45		17:30			112		66		178	
05:45			23	56	28	81	51	137	17:45			87	449	59	295	146	744
06:00			22		29		51		18:00			83		57		140	
06:15			28		48		76		18:15			57		63		120	
06:30			39		70		109		18:30			59		51		110	
06:45			55	144	85	232	140	376	18:45			49	248	49	220	98	468
07:00			53		90		143		19:00			57		32		89	
07:15			65		117		182		19:15			42		33		75	
07:30			75		118		193		19:30			42		39		81	
07:45			65	258	145	470	210	728	19:45			44	185	27	131	71	316
08:00			88		166		254		20:00			39		31		70	
08:15			84		81		165		20:15			31		19		50	
08:30			64		55		119		20:30			28		21		49	
08:45			65	301	53	355	118	656	20:45			37	135	17	88	54	223
09:00			51		47		98		21:00			34		16		50	
09:15			43		28		71		21:15			21		22		43	
09:30			48		48		96		21:30			15		13		28	
09:45			44	186	37	160	81	346	21:45			8	78	12	63	20	141
10:00			47		42		89		22:00			18		12		30	
10:15			35		36		71		22:15			12		11		23	
10:30			42		42		84		22:30			4		7		11	
10:45			28	152	60	180	88	332	22:45			8	42	9	39	17	81
11:00			34		42		76		23:00			19		6		25	
11:15			52		38		90		23:15			2		3		5	
11:30			48		47		95		23:30			10		2		12	
11:45			44	178	53	180	97	358	23:45			8	39	1	12	9	51
TOTALS				1326		1729		**3055**	**TOTALS**				2499		1956		**4455**
SPLIT %				43.4%		56.6%		**40.7%**	**SPLIT %**				56.1%		43.9%		**59.3%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	3,825	3,685	7,510

AM Peak Hour			07:30	07:15	**07:15**	**PM Peak Hour**			16:45	16:45	**16:45**
AM Pk Volume			312	546	**839**	**PM Pk Volume**			461	297	**758**
Pk Hr Factor			0.886	0.822	**0.826**	**Pk Hr Factor**			0.860	0.834	**0.881**
7 - 9 Volume	0	0	559	825	**1384**	**4 - 6 Volume**	0	0	837	562	**1399**
7 - 9 Peak Hour			07:30	07:15	**07:15**	**4 - 6 Peak Hour**			16:45	16:45	**16:45**
7 - 9 Pk Volume	0	0	312	546	**839**	**4 - 6 Pk Volume**	0	0	461	297	**758**
Pk Hr Factor	0.000	0.000	0.886	0.822	**0.826**	**Pk Hr Factor**	0.000	0.000	0.860	0.834	**0.881**

Prepared by NDS/ATD

VOLUME

White Rock Rd Bet. Zinfandel Dr & Sunrise Blvd

Day: Tuesday
Date: 9/26/2017

City: Rancho Cordova
Project #: CA17_7694_011

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	7,925	8,018	15,943

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			3		9		12		12:00			144		153		297	
00:15			4		5		9		12:15			174		173		347	
00:30			6		6		12		12:30			165		155		320	
00:45			3	16	4	24	7	40	12:45			146	629	148	629	294	1258
01:00			2		9		11		13:00			153		134		287	
01:15			1		5		6		13:15			143		154		297	
01:30			2		6		8		13:30			144		134		278	
01:45			1	6	1	21	2	27	13:45			122	562	120	542	242	1104
02:00			4		2		6		14:00			128		114		242	
02:15			3		1		4		14:15			109		119		228	
02:30			5		4		9		14:30			130		151		281	
02:45			11	23	3	10	14	33	14:45			105	472	141	525	246	997
03:00			5		8		13		15:00			151		149		300	
03:15			6		18		24		15:15			122		133		255	
03:30			4		19		23		15:30			150		173		323	
03:45			8	23	8	53	16	76	15:45			153	576	154	609	307	1185
04:00			10		7		17		16:00			241		137		378	
04:15			17		14		31		16:15			209		130		339	
04:30			26		14		40		16:30			249		149		398	
04:45			55	108	27	62	82	170	16:45			186	885	141	557	327	1442
05:00			42		21		63		17:00			228		169		397	
05:15			45		28		73		17:15			209		129		338	
05:30			89		57		146		17:30			176		113		289	
05:45			145	321	76	182	221	503	17:45			150	763	124	535	274	1298
06:00			77		74		151		18:00			142		119		261	
06:15			104		131		235		18:15			110		83		193	
06:30			125		135		260		18:30			81		75		156	
06:45			137	443	147	487	284	930	18:45			65	398	78	355	143	753
07:00			104		175		279		19:00			72		74		146	
07:15			101		207		308		19:15			72		64		136	
07:30			109		193		302		19:30			60		67		127	
07:45			155	469	188	763	343	1232	19:45			67	271	66	271	133	542
08:00			92		204		296		20:00			55		50		105	
08:15			114		171		285		20:15			36		42		78	
08:30			93		188		281		20:30			26		48		74	
08:45			99	398	180	743	279	1141	20:45			25	142	37	177	62	319
09:00			99		129		228		21:00			24		37		61	
09:15			87		107		194		21:15			22		27		49	
09:30			89		113		202		21:30			23		15		38	
09:45			112	387	89	438	201	825	21:45			13	82	19	98	32	180
10:00			93		94		187		22:00			15		22		37	
10:15			102		92		194		22:15			14		16		30	
10:30			99		97		196		22:30			15		11		26	
10:45			114	408	102	385	216	793	22:45			8	52	8	57	16	109
11:00			111		95		206		23:00			11		18		29	
11:15			91		113		204		23:15			8		8		16	
11:30			125		127		252		23:30			7		12		19	
11:45			134	461	116	451	250	912	23:45			4	30	6	44	10	74
TOTALS				3063		3619		**6682**	**TOTALS**				4862		4399		**9261**
SPLIT %				45.8%		54.2%		**41.9%**	**SPLIT %**				52.5%		47.5%		**58.1%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	7,925	8,018	15,943

AM Peak Hour			11:45	07:15	**07:15**	**PM Peak Hour**			16:00	12:00	**16:15**
AM Pk Volume			617	792	**1249**	**PM Pk Volume**			885	629	**1461**
Pk Hr Factor			0.886	0.957	**0.910**	**Pk Hr Factor**			0.889	0.909	**0.918**
7 - 9 Volume	0	0	867	1506	**2373**	**4 - 6 Volume**	0	0	1648	1092	**2740**
7 - 9 Peak Hour			07:30	07:15	**07:15**	**4 - 6 Peak Hour**			16:00	16:15	**16:15**
7 - 9 Pk Volume	0	0	470	792	**1249**	**4 - 6 Pk Volume**	0	0	885	589	**1461**
Pk Hr Factor	0.000	0.000	0.758	0.957	**0.910**	**Pk Hr Factor**	0.000	0.000	0.889	0.871	**0.918**

ATTACHMENT 4

Prepared by NDS/ATD

VOLUME

White Rock Rd Bet. Sunrise Blvd & Grant Line Rd

Day: Thursday
Date: 9/28/2017

City: Rancho Cordova
Project #: CA17_7694_012

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	2,123	1,410	3,533

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00					0		1		1		12:00					21		18		39	
00:15					0		0		0		12:15					13		8		21	
00:30					0		0		0		12:30					17		5		22	
00:45					0		1	2	1	2	12:45					24	75	19	50	43	125
01:00					2		1		3		13:00					20		14		34	
01:15					0		0		0		13:15					17		10		27	
01:30					0		0		0		13:30					20		15		35	
01:45					0	2	1	2	1	4	13:45					24	81	21	60	45	141
02:00					0		0		0		14:00					23		15		38	
02:15					0		1		1		14:15					26		9		35	
02:30					0		0		0		14:30					37		5		42	
02:45					0		0	1	0	1	14:45					27	113	19	48	46	161
03:00					1		0		1		15:00					40		21		61	
03:15					1		0		1		15:15					37		18		55	
03:30					0		1		1		15:30					75		17		92	
03:45					0	2	1	2	1	4	15:45					53	205	21	77	74	282
04:00					0		0		0		16:00					112		25		137	
04:15					1		0		1		16:15					108		21		129	
04:30					1		0		1		16:30					154		19		173	
04:45					2	4	4	4	6	8	16:45					169	543	16	81	185	624
05:00					4		3		7		17:00					180		14		194	
05:15					5		8		13		17:15					205		13		218	
05:30					7		18		25		17:30					126		8		134	
05:45					8	24	19	48	27	72	17:45					83	594	7	42	90	636
06:00					8		25		33		18:00					59		14		73	
06:15					10		20		30		18:15					30		11		41	
06:30					15		35		50		18:30					24		9		33	
06:45					16	49	43	123	59	172	18:45					12	125	9	43	21	168
07:00					16		76		92		19:00					8		4		12	
07:15					7		91		98		19:15					7		5		12	
07:30					14		94		108		19:30					9		5		14	
07:45					10	47	102	363	112	410	19:45					5	29	3	17	8	46
08:00					9		65		74		20:00					3		1		4	
08:15					13		73		86		20:15					6		4		10	
08:30					14		43		57		20:30					3		0		3	
08:45					11	47	41	222	52	269	20:45					1	13	1	6	2	19
09:00					12		32		44		21:00					2		3		5	
09:15					8		39		47		21:15					0		2		2	
09:30					12		15		27		21:30					1		0		1	
09:45					11	43	13	99	24	142	21:45					3	6	1	6	4	12
10:00					11		9		20		22:00					4		4		8	
10:15					11		17		28		22:15					2		3		5	
10:30					16		10		26		22:30					3		2		5	
10:45					9	47	15	51	24	98	22:45					1	10	1	10	2	20
11:00					12		8		20		23:00					0		0		0	
11:15					20		13		33		23:15					0		0		0	
11:30					14		22		36		23:30					2		1		3	
11:45					16	62	8	51	24	113	23:45					0	2	1	2	1	4
TOTALS						327		968		1295	TOTALS						1796		442		2238
SPLIT %						25.3%		74.7%		36.7%	SPLIT %						80.3%		19.7%		63.3%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	2,123	1,410	3,533

AM Peak Hour			11:15	07:00	07:00	PM Peak Hour			16:30	15:45	16:30
AM Pk Volume			71	363	410	PM Pk Volume			708	86	770
Pk Hr Factor			0.845	0.890	0.915	Pk Hr Factor			0.863	0.860	0.883
7 - 9 Volume	0	0	94	585	679	4 - 6 Volume	0	0	1137	123	1260
7 - 9 Peak Hour			07:00	07:00	07:00	4 - 6 Peak Hour			16:30	16:00	16:30
7 - 9 Pk Volume	0	0	47	363	410	4 - 6 Pk Volume	0	0	708	81	770
Pk Hr Factor	0.000	0.000	0.734	0.890	0.915	Pk Hr Factor	0.000	0.000	0.863	0.810	0.883

Prepared by NDS/ATD

VOLUME

White Rock Rd Bet. Grant Line Rd & Prairie City Rd

Day: Thursday
Date: 9/28/2017

City: Rancho Cordova
Project #: CA17_7694_013

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	8,090	7,346	15,436

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			9		7		16		12:00			69		101		170	
00:15			1		3		4		12:15			76		92		168	
00:30			3		6		9		12:30			101		73		174	
00:45			4	17	2	18	6	35	12:45			85	331	90	356	175	687
01:00			9		4		13		13:00			89		90		179	
01:15			4		3		7		13:15			99		86		185	
01:30			1		4		5		13:30			69		103		172	
01:45			7	21	2	13	9	34	13:45			102	359	114	393	216	752
02:00			7		1		8		14:00			72		98		170	
02:15			3		6		9		14:15			84		95		179	
02:30			3		4		7		14:30			99		101		200	
02:45			1	14	4	15	5	29	14:45			132	387	117	411	249	798
03:00			1		2		3		15:00			113		111		224	
03:15			1		4		5		15:15			126		143		269	
03:30			3		7		10		15:30			162		165		327	
03:45			1	6	5	18	6	24	15:45			183	584	178	597	361	1181
04:00			4		3		7		16:00			198		183		381	
04:15			9		8		17		16:15			230		177		407	
04:30			14		12		26		16:30			289		195		484	
04:45			13	40	15	38	28	78	16:45			298	1015	162	717	460	1732
05:00			22		28		50		17:00			271		176		447	
05:15			27		31		58		17:15			389		204		593	
05:30			42		45		87		17:30			255		148		403	
05:45			43	134	56	160	99	294	17:45			226	1141	167	695	393	1836
06:00			72		79		151		18:00			155		114		269	
06:15			96		79		175		18:15			128		130		258	
06:30			104		111		215		18:30			112		66		178	
06:45			137	409	150	419	287	828	18:45			86	481	72	382	158	863
07:00			154		172		326		19:00			68		60		128	
07:15			176		213		389		19:15			63		72		135	
07:30			181		210		391		19:30			35		42		77	
07:45			223	734	223	818	446	1552	19:45			38	204	61	235	99	439
08:00			219		180		399		20:00			33		44		77	
08:15			194		163		357		20:15			27		50		77	
08:30			177		145		322		20:30			20		41		61	
08:45			166	756	120	608	286	1364	20:45			32	112	28	163	60	275
09:00			140		131		271		21:00			26		40		66	
09:15			132		100		232		21:15			20		37		57	
09:30			101		89		190		21:30			22		25		47	
09:45			99	472	105	425	204	897	21:45			23	91	25	127	48	218
10:00			117		72		189		22:00			19		29		48	
10:15			130		73		203		22:15			13		21		34	
10:30			85		71		156		22:30			14		14		28	
10:45			79	411	81	297	160	708	22:45			4	50	18	82	22	132
11:00			71		87		158		23:00			10		7		17	
11:15			69		71		140		23:15			10		9		19	
11:30			60		73		133		23:30			4		4		8	
11:45			91	291	103	334	194	625	23:45			6	30	5	25	11	55
TOTALS				3305		3163		**6468**	**TOTALS**				4785		4183		**8968**
SPLIT %				51.1%		48.9%		**41.9%**	**SPLIT %**				53.4%		46.6%		**58.1%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	8,090	7,346	15,436

AM Peak Hour			07:30	07:15	**07:15**	**PM Peak Hour**			16:30	16:30	**16:30**
AM Pk Volume			817	826	**1625**	**PM Pk Volume**			1247	737	**1984**
Pk Hr Factor			0.916	0.926	**0.911**	**Pk Hr Factor**			0.801	0.903	**0.836**
7 - 9 Volume	0	0	1490	1426	**2916**	**4 - 6 Volume**	0	0	2156	1412	**3568**
7 - 9 Peak Hour			07:30	07:15	**07:15**	**4 - 6 Peak Hour**			16:30	16:30	**16:30**
7 - 9 Pk Volume	0	0	817	826	**1625**	**4 - 6 Pk Volume**	0	0	1247	737	**1984**
Pk Hr Factor	0.000	0.000	0.916	0.926	**0.911**	**Pk Hr Factor**	0.000	0.000	0.801	0.903	**0.836**

ATTACHMENT 4

Prepared by NDS/ATD

VOLUME

Mather Field Rd Bet. Folsom Blvd & US-50 WB Ramps

Day: Tuesday
Date: 9/26/2017

City: Rancho Cordova
Project #: CA17_7694_014

DAILY TOTALS	NB	SB	EB	WB	Total
	11,787	10,756	0	0	22,543

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	31		21				52		12:00	163		138				301	
00:15	27		11				38		12:15	181		160				341	
00:30	27		10				37		12:30	178		198				376	
00:45	16	101	7	49			23	150	12:45	177	699	172	668			349	1367
01:00	17		9				26		13:00	158		163				321	
01:15	18		4				22		13:15	133		163				296	
01:30	21		4				25		13:30	152		142				294	
01:45	10	66	2	19			12	85	13:45	172	615	189	657			361	1272
02:00	16		5				21		14:00	161		150				311	
02:15	16		3				19		14:15	218		202				420	
02:30	18		2				20		14:30	214		170				384	
02:45	8	58	1	11			9	69	14:45	219	812	182	704			401	1516
03:00	6		3				9		15:00	183		219				402	
03:15	9		6				15		15:15	242		209				451	
03:30	11		5				16		15:30	238		184				422	
03:45	6	32	4	18			10	50	15:45	241	904	174	786			415	1690
04:00	14		2				16		16:00	250		168				418	
04:15	11		11				22		16:15	251		167				418	
04:30	10		16				26		16:30	274		151				425	
04:45	20	55	14	43			34	98	16:45	269	1044	155	641			424	1685
05:00	19		13				32		17:00	274		170				444	
05:15	23		20				43		17:15	256		160				416	
05:30	30		30				60		17:30	311		159				470	
05:45	41	113	50	113			91	226	17:45	202	1043	192	681			394	1724
06:00	48		80				128		18:00	216		145				361	
06:15	67		87				154		18:15	214		179				393	
06:30	78		94				172		18:30	220		171				391	
06:45	104	297	87	348			191	645	18:45	199	849	221	716			420	1565
07:00	102		98				200		19:00	182		155				337	
07:15	189		122				311		19:15	150		135				285	
07:30	274		159				433		19:30	140		145				285	
07:45	217	782	157	536			374	1318	19:45	142	614	106	541			248	1155
08:00	173		181				354		20:00	155		110				265	
08:15	174		198				372		20:15	158		103				261	
08:30	150		268				418		20:30	124		94				218	
08:45	145	642	235	882			380	1524	20:45	107	544	100	407			207	951
09:00	148		174				322		21:00	122		87				209	
09:15	122		128				250		21:15	111		95				206	
09:30	123		211				334		21:30	102		86				188	
09:45	122	515	222	735			344	1250	21:45	87	422	99	367			186	789
10:00	137		218				355		22:00	72		70				142	
10:15	111		191				302		22:15	71		49				120	
10:30	148		186				334		22:30	60		42				102	
10:45	174	570	208	803			382	1373	22:45	61	264	32	193			93	457
11:00	160		214				374		23:00	46		23				69	
11:15	126		209				335		23:15	46		19				65	
11:30	133		188				321		23:30	35		18				53	
11:45	156	575	155	766			311	1341	23:45	44	171	12	72			56	243
TOTALS		3806		4323				**8129**	**TOTALS**		7981		6433				**14414**
SPLIT %		46.8%		53.2%				**36.1%**	**SPLIT %**		55.4%		44.6%				**63.9%**

DAILY TOTALS	NB	SB	EB	WB	Total
	11,787	10,756	0	0	22,543

AM Peak Hour	07:15	08:00				**07:30**	**PM Peak Hour**	16:45	14:45				**16:45**
AM Pk Volume	853	882				**1533**	**PM Pk Volume**	1110	794				**1754**
Pk Hr Factor	0.778	0.823				**0.885**	**Pk Hr Factor**	0.892	0.906				**0.933**
7 - 9 Volume	1424	1418	0	0		**2842**	**4 - 6 Volume**	2087	1322	0	0		**3409**
7 - 9 Peak Hour	07:15	08:00				**07:30**	**4 - 6 Peak Hour**	16:45	17:00				**16:45**
7 - 9 Pk Volume	853	882	0	0		**1533**	**4 - 6 Pk Volume**	1110	681	0	0		**1754**
Pk Hr Factor	0.778	0.823	0.000	0.000		**0.885**	**Pk Hr Factor**	0.892	0.887	0.000	0.000		**0.933**

Prepared by NDS/ATD

VOLUME

Mather Field Rd Bet. US-50 WB Ramps & US-50 EB Ramps

Day: Tuesday
Date: 9/26/2017

City: Rancho Cordova
Project #: CA17_7694_015

DAILY TOTALS	NB	SB	EB	WB	Total
	20,606	14,422	0	0	35,028

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	46		35				81		12:00	298		185				483	
00:15	37		21				58		12:15	318		208				526	
00:30	41		23				64		12:30	282		233				515	
00:45	19	143	15	94			34	237	12:45	261	1159	218	844			479	2003
01:00	21		13				34		13:00	248		213				461	
01:15	22		14				36		13:15	248		193				441	
01:30	27		13				40		13:30	296		198				494	
01:45	20	90	15	55			35	145	13:45	288	1080	203	807			491	1887
02:00	24		12				36		14:00	300		163				463	
02:15	19		11				30		14:15	347		213				560	
02:30	30		15				45		14:30	431		187				618	
02:45	21	94	11	49			32	143	14:45	406	1484	219	782			625	2266
03:00	14		12				26		15:00	368		246				614	
03:15	20		16				36		15:15	431		248				679	
03:30	18		12				30		15:30	489		220				709	
03:45	33	85	14	54			47	139	15:45	463	1751	226	940			689	2691
04:00	34		16				50		16:00	494		196				690	
04:15	24		17				41		16:15	449		228				677	
04:30	55		28				83		16:30	569		216				785	
04:45	44	157	33	94			77	251	16:45	549	2061	219	859			768	2920
05:00	44		46				90		17:00	581		218				799	
05:15	60		55				115		17:15	585		234				819	
05:30	99		114				213		17:30	400		222				622	
05:45	134	337	156	371			290	708	17:45	294	1860	199	873			493	2733
06:00	130		133				263		18:00	370		175				545	
06:15	166		195				361		18:15	306		187				493	
06:30	228		238				466		18:30	296		189				485	
06:45	305	829	332	898			637	1727	18:45	264	1236	207	758			471	1994
07:00	279		295				574		19:00	263		153				416	
07:15	319		345				664		19:15	213		140				353	
07:30	363		460				823		19:30	191		129				320	
07:45	308	1269	464	1564			772	2833	19:45	208	875	136	558			344	1433
08:00	308		379				687		20:00	194		107				301	
08:15	291		372				663		20:15	184		108				292	
08:30	271		344				615		20:30	164		101				265	
08:45	236	1106	299	1394			535	2500	20:45	146	688	128	444			274	1132
09:00	254		229				483		21:00	168		92				260	
09:15	230		219				449		21:15	144		94				238	
09:30	248		218				466		21:30	116		78				194	
09:45	252	984	183	849			435	1833	21:45	113	541	92	356			205	897
10:00	261		175				436		22:00	127		68				195	
10:15	236		154				390		22:15	96		59				155	
10:30	255		163				418		22:30	79		44				123	
10:45	303	1055	183	675			486	1730	22:45	67	369	40	211			107	580
11:00	292		173				465		23:00	65		45				110	
11:15	249		176				425		23:15	67		34				101	
11:30	256		198				454		23:30	59		34				93	
11:45	298	1095	213	760			511	1855	23:45	67	258	20	133			87	391
TOTALS		7244		6857				14101	TOTALS		13362		7565				20927
SPLIT %		51.4%		48.6%				40.3%	SPLIT %		63.9%		36.1%				59.7%

DAILY TOTALS	NB	SB	EB	WB	Total
	20,606	14,422	0	0	35,028

AM Peak Hour	07:15	07:30					07:15		PM Peak Hour	16:30	15:00					16:30		
AM Pk Volume	1298	1675					2946		PM Pk Volume	2284	940					3171		
Pk Hr Factor	0.894	0.902					0.895		Pk Hr Factor	0.976	0.948					0.968		
7 - 9 Volume	2375	2958	0	0			5333		4 - 6 Volume	3921	1732	0	0			5653		
7 - 9 Peak Hour	07:15	07:30					07:15		4 - 6 Peak Hour	16:30	16:45					16:30		
7 - 9 Pk Volume	1298	1675	0	0			2946		4 - 6 Pk Volume	2284	893	0	0			3171		
Pk Hr Factor	0.894	0.902	0.000	0.000			0.895		Pk Hr Factor	0.976	0.954	0.000	0.000			0.968		

ATTACHMENT 4

Prepared by NDS/ATD

VOLUME

Mather Field Rd Bet. US-50 EB Ramps & International Dr

Day: Tuesday
Date: 9/26/2017

City: Rancho Cordova
Project #: CA17_7694_016

DAILY TOTALS	NB	SB	EB	WB	Total
	21,881	20,347	0	0	42,228

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	41		56				97		12:00	354		271				625	
00:15	35		38				73		12:15	377		255				632	
00:30	29		34				63		12:30	312		292				604	
00:45	8	113	17	145			25	258	12:45	301	1344	313	1131			614	2475
01:00	11		24				35		13:00	286		265				551	
01:15	17		16				33		13:15	311		262				573	
01:30	17		11				28		13:30	322		267				589	
01:45	12	57	22	73			34	130	13:45	311	1230	275	1069			586	2299
02:00	19		14				33		14:00	386		229				615	
02:15	11		17				28		14:15	383		276				659	
02:30	16		25				41		14:30	525		236				761	
02:45	13	59	19	75			32	134	14:45	471	1765	276	1017			747	2782
03:00	8		17				25		15:00	448		315				763	
03:15	17		22				39		15:15	500		326				826	
03:30	14		15				29		15:30	662		269				931	
03:45	24	63	19	73			43	136	15:45	562	2172	303	1213			865	3385
04:00	20		22				42		16:00	610		268				878	
04:15	21		19				40		16:15	571		312				883	
04:30	50		44				94		16:30	675		322				997	
04:45	42	133	51	136			93	269	16:45	584	2440	329	1231			913	3671
05:00	39		57				96		17:00	653		325				978	
05:15	55		95				150		17:15	537		339				876	
05:30	94		179				273		17:30	416		351				767	
05:45	110	298	289	620			399	918	17:45	338	1944	302	1317			640	3261
06:00	126		202				328		18:00	419		258				677	
06:15	146		257				403		18:15	298		282				580	
06:30	244		341				585		18:30	310		258				568	
06:45	319	835	507	1307			826	2142	18:45	272	1299	233	1031			505	2330
07:00	284		488				772		19:00	267		194				461	
07:15	361		508				869		19:15	215		210				425	
07:30	356		613				969		19:30	164		185				349	
07:45	321	1322	664	2273			985	3595	19:45	199	845	173	762			372	1607
08:00	313		590				903		20:00	200		165				365	
08:15	304		563				867		20:15	144		156				300	
08:30	303		509				812		20:30	135		147				282	
08:45	244	1164	456	2118			700	3282	20:45	110	589	173	641			283	1230
09:00	273		340				613		21:00	127		141				268	
09:15	250		293				543		21:15	123		141				264	
09:30	251		263				514		21:30	86		121				207	
09:45	225	999	237	1133			462	2132	21:45	74	410	121	524			195	934
10:00	295		214				509		22:00	108		111				219	
10:15	248		233				481		22:15	83		93				176	
10:30	269		236				505		22:30	52		77				129	
10:45	285	1097	246	929			531	2026	22:45	40	283	76	357			116	640
11:00	309		217				526		23:00	45		66				111	
11:15	292		213				505		23:15	46		69				115	
11:30	313		254				567		23:30	42		57				99	
11:45	324	1238	253	937			577	2175	23:45	49	182	43	235			92	417
TOTALS		7378		9819				17197	TOTALS		14503		10528				25031
SPLIT %		42.9%		57.1%				40.7%	SPLIT %		57.9%		42.1%				59.3%

DAILY TOTALS	NB	SB	EB	WB	Total
	21,881	20,347	0	0	42,228

AM Peak Hour	11:30	07:30					07:15		PM Peak Hour	16:15	16:45					16:15		
AM Pk Volume	1368	2430					3726		PM Pk Volume	2483	1344					3771		
Pk Hr Factor	0.907	0.915					0.946		Pk Hr Factor	0.920	0.957					0.946		
7 - 9 Volume	2486	4391	0	0			6877		4 - 6 Volume	4384	2548	0	0			6932		
7 - 9 Peak Hour	07:15	07:30					07:15		4 - 6 Peak Hour	16:15	16:45					16:15		
7 - 9 Pk Volume	1351	2430	0	0			3726		4 - 6 Pk Volume	2483	1344	0	0			3771		
Pk Hr Factor	0.936	0.915	0.000	0.000			0.946		Pk Hr Factor	0.920	0.957	0.000	0.000			0.946		

ATTACHMENT 4

Prepared by NDS/ATD

VOLUME

Zinfandel Dr Bet. Folsom Blvd & US-50 WB Ramps

Day: Tuesday
Date: 9/26/2017

City: Rancho Cordova
Project #: CA17_7694_017

DAILY TOTALS	NB	SB	EB	WB	Total
	12,026	10,354	0	0	22,380

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	19		21				40		12:00	223		183				406	
00:15	20		19				39		12:15	213		186				399	
00:30	17		26				43		12:30	227		185				412	
00:45	15	71	8	74			23	145	12:45	221	884	190	744			411	1628
01:00	14		7				21		13:00	205		161				366	
01:15	7		13				20		13:15	224		189				413	
01:30	8		10				18		13:30	199		188				387	
01:45	5	34	7	37			12	71	13:45	181	809	137	675			318	1484
02:00	8		14				22		14:00	203		165				368	
02:15	6		7				13		14:15	227		147				374	
02:30	8		9				17		14:30	211		162				373	
02:45	9	31	7	37			16	68	14:45	227	868	182	656			409	1524
03:00	4		5				9		15:00	232		192				424	
03:15	7		7				14		15:15	221		200				421	
03:30	9		5				14		15:30	245		168				413	
03:45	14	34	14	31			28	65	15:45	250	948	163	723			413	1671
04:00	7		18				25		16:00	308		178				486	
04:15	8		15				23		16:15	269		158				427	
04:30	9		35				44		16:30	260		172				432	
04:45	26	50	25	93			51	143	16:45	298	1135	167	675			465	1810
05:00	12		28				40		17:00	302		203				505	
05:15	17		40				57		17:15	312		205				517	
05:30	21		62				83		17:30	302		174				476	
05:45	42	92	54	184			96	276	17:45	272	1188	195	777			467	1965
06:00	55		67				122		18:00	241		197				438	
06:15	46		96				142		18:15	239		189				428	
06:30	65		123				188		18:30	196		161				357	
06:45	72	238	135	421			207	659	18:45	232	908	165	712			397	1620
07:00	91		156				247		19:00	202		153				355	
07:15	121		164				285		19:15	172		146				318	
07:30	153		145				298		19:30	158		145				303	
07:45	149	514	179	644			328	1158	19:45	163	695	141	585			304	1280
08:00	156		188				344		20:00	127		124				251	
08:15	134		168				302		20:15	117		113				230	
08:30	120		159				279		20:30	116		91				207	
08:45	124	534	146	661			270	1195	20:45	113	473	95	423			208	896
09:00	130		125				255		21:00	105		67				172	
09:15	117		132				249		21:15	100		86				186	
09:30	112		128				240		21:30	76		68				144	
09:45	112	471	99	484			211	955	21:45	75	356	59	280			134	636
10:00	140		125				265		22:00	81		43				124	
10:15	148		142				290		22:15	52		45				97	
10:30	140		132				272		22:30	45		41				86	
10:45	148	576	121	520			269	1096	22:45	41	219	34	163			75	382
11:00	171		134				305		23:00	38		35				73	
11:15	169		153				322		23:15	24		31				55	
11:30	238		179				417		23:30	38		19				57	
11:45	198	776	182	648			380	1424	23:45	22	122	22	107			44	229
TOTALS		3421		3834				7255	TOTALS		8605		6520				15125
SPLIT %		47.2%		52.8%				32.4%	SPLIT %		56.9%		43.1%				67.6%

DAILY TOTALS	NB	SB	EB	WB	Total
	12,026	10,354	0	0	22,380

AM Peak Hour	11:30	11:45						11:30	PM Peak Hour	16:45	17:00						17:00
AM Pk Volume	872	736						1602	PM Pk Volume	1214	777						1965
Pk Hr Factor	0.916	0.989						0.960	Pk Hr Factor	0.973	0.948						0.950
7 - 9 Volume	1048	1305	0	0				2353	4 - 6 Volume	2323	1452	0	0				3775
7 - 9 Peak Hour	07:30	07:45						07:30	4 - 6 Peak Hour	16:45	17:00						17:00
7 - 9 Pk Volume	592	694	0	0				1272	4 - 6 Pk Volume	1214	777	0	0				1965
Pk Hr Factor	0.949	0.923	0.000	0.000				0.924	Pk Hr Factor	0.973	0.948	0.000	0.000				0.950

Prepared by NDS/ATD

VOLUME

Zinfandel Dr Bet. US-50 EB Ramps & White Rock Rd

Day: Tuesday
Date: 9/26/2017

City: Rancho Cordova
Project #: CA17_7694_018

DAILY TOTALS	NB	SB	EB	WB	Total
	24,091	26,424	0	0	50,515

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	38		29				67		12:00	393		379				772	
00:15	27		35				62		12:15	423		407				830	
00:30	20		41				61		12:30	389		432				821	
00:45	17	102	24	129			41	231	12:45	382	1587	454	1672			836	3259
01:00	24		24				48		13:00	389		381				770	
01:15	23		14				37		13:15	321		421				742	
01:30	23		21				44		13:30	403		407				810	
01:45	13	83	20	79			33	162	13:45	370	1483	389	1598			759	3081
02:00	8		15				23		14:00	428		307				735	
02:15	13		17				30		14:15	426		371				797	
02:30	19		17				36		14:30	503		373				876	
02:45	19	59	21	70			40	129	14:45	492	1849	363	1414			855	3263
03:00	13		13				26		15:00	515		366				881	
03:15	34		16				50		15:15	475		432				907	
03:30	43		20				63		15:30	542		337				879	
03:45	36	126	18	67			54	193	15:45	541	2073	419	1554			960	3627
04:00	28		28				56		16:00	547		394				941	
04:15	41		26				67		16:15	534		436				970	
04:30	45		62				107		16:30	593		393				986	
04:45	55	169	109	225			164	394	16:45	553	2227	411	1634			964	3861
05:00	65		75				140		17:00	572		407				979	
05:15	83		127				210		17:15	543		458				1001	
05:30	129		198				327		17:30	555		399				954	
05:45	140	417	330	730			470	1147	17:45	526	2196	413	1677			939	3873
06:00	160		288				448		18:00	438		397				835	
06:15	221		343				564		18:15	485		353				838	
06:30	290		420				710		18:30	372		339				711	
06:45	309	980	491	1542			800	2522	18:45	377	1672	330	1419			707	3091
07:00	339		470				809		19:00	311		319				630	
07:15	381		558				939		19:15	259		318				577	
07:30	383		592				975		19:30	265		301				566	
07:45	386	1489	691	2311			1077	3800	19:45	240	1075	282	1220			522	2295
08:00	345		660				1005		20:00	248		255				503	
08:15	322		637				959		20:15	162		242				404	
08:30	342		623				965		20:30	166		216				382	
08:45	327	1336	613	2533			940	3869	20:45	141	717	217	930			358	1647
09:00	286		482				768		21:00	142		185				327	
09:15	256		425				681		21:15	146		171				317	
09:30	240		339				579		21:30	100		164				264	
09:45	223	1005	347	1593			570	2598	21:45	96	484	140	660			236	1144
10:00	211		281				492		22:00	120		125				245	
10:15	217		320				537		22:15	71		109				180	
10:30	218		316				534		22:30	77		118				195	
10:45	307	953	348	1265			655	2218	22:45	60	328	69	421			129	749
11:00	349		316				665		23:00	59		75				134	
11:15	344		359				703		23:15	36		60				96	
11:30	398		378				776		23:30	43		42				85	
11:45	399	1490	393	1446			792	2936	23:45	53	191	58	235			111	426
TOTALS		8209		11990				20199	TOTALS		15882		14434				30316
SPLIT %		40.6%		59.4%				40.0%	SPLIT %		52.4%		47.6%				60.0%

DAILY TOTALS	NB	SB	EB	WB	Total
	24,091	26,424	0	0	50,515

AM Peak Hour	11:30	07:45				07:30	PM Peak Hour	16:30	12:30				16:30
AM Pk Volume	1613	2611				4016	PM Pk Volume	2261	1688				3930
Pk Hr Factor	0.953	0.945				0.932	Pk Hr Factor	0.953	0.930				0.982
7 - 9 Volume	2825	4844	0	0		7669	4 - 6 Volume	4423	3311	0	0		7734
7 - 9 Peak Hour	07:15	07:45				07:30	4 - 6 Peak Hour	16:30	17:00				16:30
7 - 9 Pk Volume	1495	2611	0	0		4016	4 - 6 Pk Volume	2261	1677	0	0		3930
Pk Hr Factor	0.968	0.945	0.000	0.000		0.932	Pk Hr Factor	0.953	0.915	0.000	0.000		0.982

ATTACHMENT 4

Prepared by NDS/ATD

VOLUME

Zinfandel Dr Bet. White Rock Rd & International Dr

Day: Tuesday
Date: 9/26/2017

City: Rancho Cordova
Project #: CA17_7694_019

DAILY TOTALS	NB	SB	EB	WB	Total
	11,407	12,278	0	0	23,685

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	10		18				28		12:00	214		198				412	
00:15	13		19				32		12:15	214		201				415	
00:30	9		19				28		12:30	196		198				394	
00:45	4	36	13	69			17	105	12:45	193	817	190	787			383	1604
01:00	10		7				17		13:00	196		180				376	
01:15	12		8				20		13:15	158		193				351	
01:30	13		8				21		13:30	170		200				370	
01:45	3	38	5	28			8	66	13:45	170	694	176	749			346	1443
02:00	4		5				9		14:00	180		160				340	
02:15	6		12				18		14:15	192		175				367	
02:30	8		4				12		14:30	203		183				386	
02:45	5	23	6	27			11	50	14:45	233	808	186	704			419	1512
03:00	4		8				12		15:00	231		182				413	
03:15	5		5				10		15:15	187		244				431	
03:30	6		8				14		15:30	237		200				437	
03:45	17	32	8	29			25	61	15:45	182	837	206	832			388	1669
04:00	10		9				19		16:00	228		222				450	
04:15	14		6				20		16:15	192		252				444	
04:30	24		16				40		16:30	198		227				425	
04:45	29	77	28	59			57	136	16:45	211	829	263	964			474	1793
05:00	31		20				51		17:00	184		286				470	
05:15	44		31				75		17:15	222		323				545	
05:30	62		31				93		17:30	167		257				424	
05:45	83	220	86	168			169	388	17:45	170	743	264	1130			434	1873
06:00	92		89				181		18:00	201		229				430	
06:15	117		100				217		18:15	175		218				393	
06:30	160		145				305		18:30	146		195				341	
06:45	198	567	165	499			363	1066	18:45	175	697	194	836			369	1533
07:00	229		153				382		19:00	134		184				318	
07:15	233		165				398		19:15	114		158				272	
07:30	276		231				507		19:30	134		160				294	
07:45	232	970	257	806			489	1776	19:45	102	484	143	645			245	1129
08:00	240		255				495		20:00	104		135				239	
08:15	202		246				448		20:15	87		125				212	
08:30	205		200				405		20:30	72		115				187	
08:45	170	817	221	922			391	1739	20:45	65	328	117	492			182	820
09:00	170		179				349		21:00	72		89				161	
09:15	145		151				296		21:15	58		85				143	
09:30	143		139				282		21:30	42		86				128	
09:45	154	612	145	614			299	1226	21:45	34	206	78	338			112	544
10:00	153		121				274		22:00	52		63				115	
10:15	136		139				275		22:15	41		61				102	
10:30	153		158				311		22:30	41		64				105	
10:45	148	590	138	556			286	1146	22:45	23	157	14	202			37	359
11:00	161		148				309		23:00	25		36				61	
11:15	172		183				355		23:15	15		34				49	
11:30	218		188				406		23:30	15		26				41	
11:45	190	741	173	692			363	1433	23:45	29	84	34	130			63	214
TOTALS		4723		4469				**9192**	**TOTALS**		6684		7809				**14493**
SPLIT %		51.4%		48.6%				**38.8%**	**SPLIT %**		46.1%		53.9%				**61.2%**

DAILY TOTALS	NB	SB	EB	WB	Total
	11,407	12,278	0	0	23,685

AM Peak Hour	07:15	07:30				**07:30**	**PM Peak Hour**	14:45	17:00				**16:30**
AM Pk Volume	981	989				**1939**	**PM Pk Volume**	888	1130				**1914**
Pk Hr Factor	0.889	0.962				**0.956**	**Pk Hr Factor**	0.937	0.875				**0.878**
7 - 9 Volume	1787	1728	0	0		**3515**	**4 - 6 Volume**	1572	2094	0	0		**3666**
7 - 9 Peak Hour	07:15	07:30				**07:30**	**4 - 6 Peak Hour**	16:00	17:00				**16:30**
7 - 9 Pk Volume	981	989	0	0		**1939**	**4 - 6 Pk Volume**	829	1130	0	0		**1914**
Pk Hr Factor	0.889	0.962	0.000	0.000		**0.956**	**Pk Hr Factor**	0.909	0.875	0.000	0.000		**0.878**

ATTACHMENT 4

Prepared by NDS/ATD

VOLUME

Zinfandel Dr Bet. International Dr & Douglas Rd

Day: Tuesday
Date: 9/26/2017

City: Rancho Cordova
Project #: CA17_7694_020

DAILY TOTALS	NB	SB	EB	WB	Total
	6,493	7,212	0	0	13,705

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	5		14				19		12:00	85		89				174	
00:15	4		8				12		12:15	83		87				170	
00:30	3		13				16		12:30	82		74				156	
00:45	0	12	8	43			8	55	12:45	78	328	83	333			161	661
01:00	3		4				7		13:00	74		76				150	
01:15	1		4				5		13:15	64		92				156	
01:30	7		10				17		13:30	78		110				188	
01:45	1	12	0	18			1	30	13:45	85	301	97	375			182	676
02:00	2		1				3		14:00	85		92				177	
02:15	3		6				9		14:15	80		102				182	
02:30	4		3				7		14:30	108		121				229	
02:45	3	12	5	15			8	27	14:45	104	377	136	451			240	828
03:00	1		3				4		15:00	82		122				204	
03:15	1		1				2		15:15	72		129				201	
03:30	2		4				6		15:30	96		150				246	
03:45	8	12	6	14			14	26	15:45	78	328	156	557			234	885
04:00	9		5				14		16:00	84		201				285	
04:15	7		5				12		16:15	73		189				262	
04:30	13		7				20		16:30	76		214				290	
04:45	21	50	13	30			34	80	16:45	83	316	244	848			327	1164
05:00	22		11				33		17:00	124		264				388	
05:15	30		17				47		17:15	96		290				386	
05:30	50		16				66		17:30	76		216				292	
05:45	64	166	27	71			91	237	17:45	71	367	214	984			285	1351
06:00	71		29				100		18:00	95		188				283	
06:15	93		42				135		18:15	91		164				255	
06:30	146		45				191		18:30	65		172				237	
06:45	184	494	59	175			243	669	18:45	88	339	140	664			228	1003
07:00	203		52				255		19:00	74		130				204	
07:15	233		55				288		19:15	90		91				181	
07:30	222		59				281		19:30	83		124				207	
07:45	249	907	88	254			337	1161	19:45	57	304	93	438			150	742
08:00	230		90				320		20:00	39		92				131	
08:15	192		90				282		20:15	42		81				123	
08:30	200		72				272		20:30	37		69				106	
08:45	155	777	71	323			226	1100	20:45	29	147	81	323			110	470
09:00	116		72				188		21:00	31		64				95	
09:15	87		69				156		21:15	19		65				84	
09:30	77		54				131		21:30	20		69				89	
09:45	105	385	55	250			160	635	21:45	23	93	50	248			73	341
10:00	86		52				138		22:00	24		43				67	
10:15	65		70				135		22:15	17		38				55	
10:30	74		71				145		22:30	14		36				50	
10:45	81	306	67	260			148	566	22:45	18	73	25	142			43	215
11:00	73		57				130		23:00	15		25				40	
11:15	80		69				149		23:15	8		19				27	
11:30	96		86				182		23:30	10		20				30	
11:45	88	337	99	311			187	648	23:45	17	50	21	85			38	135
TOTALS		3470		1764				**5234**	**TOTALS**		3023		5448				**8471**
SPLIT %		66.3%		33.7%				**38.2%**	**SPLIT %**		35.7%		64.3%				**61.8%**

DAILY TOTALS	NB	SB	EB	WB	Total
	6,493	7,212	0	0	13,705

AM Peak Hour	07:15	11:30					**07:15**		**PM Peak Hour**	16:30	16:45					**16:45**		
AM Pk Volume	934	361					**1226**		**PM Pk Volume**	379	1014					**1393**		
Pk Hr Factor	0.938	0.912					**0.909**		**Pk Hr Factor**	0.764	0.874					**0.898**		
7 - 9 Volume	1684	577	0	0			**2261**		**4 - 6 Volume**	683	1832	0	0			**2515**		
7 - 9 Peak Hour	07:15	07:45					**07:15**		**4 - 6 Peak Hour**	16:30	16:45					**16:45**		
7 - 9 Pk Volume	934	340	0	0			**1226**		**4 - 6 Pk Volume**	379	1014	0	0			**1393**		
Pk Hr Factor	0.938	0.944	0.000	0.000			**0.909**		**Pk Hr Factor**	0.764	0.874	0.000	0.000			**0.898**		

ATTACHMENT 4

Prepared by NDS/ATD

VOLUME

Sunrise Blvd Bet. US-50 WB Ramps & US-50 EB Ramps

Day: Tuesday
Date: 9/26/2017

City: Rancho Cordova
Project #: CA17_7694_021

DAILY TOTALS	NB	SB	EB	WB	Total
	38,834	28,442	0	0	67,276

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	82		30				112		12:00	658		432				1090	
00:15	60		36				96		12:15	628		441				1069	
00:30	65		24				89		12:30	665		446				1111	
00:45	47	254	19	109			66	363	12:45	661	2612	442	1761			1103	4373
01:00	46		18				64		13:00	653		460				1113	
01:15	41		27				68		13:15	594		466				1060	
01:30	50		10				60		13:30	676		432				1108	
01:45	24	161	22	77			46	238	13:45	640	2563	427	1785			1067	4348
02:00	46		18				64		14:00	714		405				1119	
02:15	30		19				49		14:15	742		420				1162	
02:30	37		24				61		14:30	794		419				1213	
02:45	31	144	32	93			63	237	14:45	771	3021	448	1692			1219	4713
03:00	40		21				61		15:00	806		383				1189	
03:15	37		15				52		15:15	768		484				1252	
03:30	38		25				63		15:30	786		433				1219	
03:45	43	158	44	105			87	263	15:45	719	3079	452	1752			1171	4831
04:00	50		30				80		16:00	803		415				1218	
04:15	57		54				111		16:15	655		426				1081	
04:30	59		84				143		16:30	658		386				1044	
04:45	63	229	166	334			229	563	16:45	696	2812	392	1619			1088	4431
05:00	92		134				226		17:00	691		398				1089	
05:15	109		179				288		17:15	640		426				1066	
05:30	155		305				460		17:30	518		398				916	
05:45	225	581	485	1103			710	1684	17:45	611	2460	404	1626			1015	4086
06:00	202		366				568		18:00	686		372				1058	
06:15	303		483				786		18:15	671		343				1014	
06:30	351		513				864		18:30	641		302				943	
06:45	480	1336	641	2003			1121	3339	18:45	555	2553	293	1310			848	3863
07:00	482		552				1034		19:00	497		278				775	
07:15	554		573				1127		19:15	496		233				729	
07:30	594		597				1191		19:30	436		236				672	
07:45	550	2180	707	2429			1257	4609	19:45	399	1828	234	981			633	2809
08:00	574		648				1222		20:00	406		208				614	
08:15	604		621				1225		20:15	355		210				565	
08:30	623		621				1244		20:30	312		178				490	
08:45	565	2366	638	2528			1203	4894	20:45	292	1365	191	787			483	2152
09:00	557		508				1065		21:00	323		154				477	
09:15	572		524				1096		21:15	269		167				436	
09:30	540		454				994		21:30	234		141				375	
09:45	558	2227	444	1930			1002	4157	21:45	229	1055	135	597			364	1652
10:00	510		397				907		22:00	210		114				324	
10:15	557		397				954		22:15	192		107				299	
10:30	508		408				916		22:30	146		67				213	
10:45	537	2112	382	1584			919	3696	22:45	117	665	79	367			196	1032
11:00	620		374				994		23:00	152		71				223	
11:15	651		415				1066		23:15	103		52				155	
11:30	644		464				1108		23:30	109		27				136	
11:45	681	2596	417	1670			1098	4266	23:45	113	477	50	200			163	677
TOTALS		14344		13965				28309	TOTALS		24490		14477				38967
SPLIT %		50.7%		49.3%				42.1%	SPLIT %		62.8%		37.2%				57.9%

DAILY TOTALS	NB	SB	EB	WB	Total
	38,834	28,442	0	0	67,276

AM Peak Hour	11:15	07:45					07:45		PM Peak Hour	14:30	12:30					14:45		
AM Pk Volume	2634	2597					4948		PM Pk Volume	3139	1814					4879		
Pk Hr Factor	0.967	0.918					0.984		Pk Hr Factor	0.974	0.973					0.974		
7 - 9 Volume	4546	4957	0	0			9503		4 - 6 Volume	5272	3245	0	0			8517		
7 - 9 Peak Hour	08:00	07:45					07:45		4 - 6 Peak Hour	16:00	17:00					16:00		
7 - 9 Pk Volume	2366	2597	0	0			4948		4 - 6 Pk Volume	2812	1626	0	0			4431		
Pk Hr Factor	0.949	0.918	0.000	0.000			0.984		Pk Hr Factor	0.875	0.954	0.000	0.000			0.909		

ATTACHMENT 4

Prepared by NDS/ATD

VOLUME

Sunrise Blvd Bet. US-50 EB Ramps & Folsom Blvd

Day: Tuesday
Date: 9/26/2017

City: Rancho Cordova
Project #: CA17_7694_022

DAILY TOTALS	NB	SB	EB	WB	Total
	26,082	27,422	0	0	53,504

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	37		32				69		12:00	459		435				894	
00:15	27		28				55		12:15	450		485				935	
00:30	36		22				58		12:30	493		448				941	
00:45	25	125	20	102			45	227	12:45	463	1865	457	1825			920	3690
01:00	30		18				48		13:00	469		515				984	
01:15	27		16				43		13:15	420		465				885	
01:30	33		12				45		13:30	504		425				929	
01:45	14	104	15	61			29	165	13:45	396	1789	445	1850			841	3639
02:00	33		8				41		14:00	533		409				942	
02:15	19		14				33		14:15	468		420				888	
02:30	24		18				42		14:30	557		399				956	
02:45	18	94	20	60			38	154	14:45	550	2108	404	1632			954	3740
03:00	36		15				51		15:00	540		384				924	
03:15	22		16				38		15:15	597		413				1010	
03:30	27		11				38		15:30	529		446				975	
03:45	24	109	40	82			64	191	15:45	522	2188	412	1655			934	3843
04:00	28		36				64		16:00	536		414				950	
04:15	38		54				92		16:15	428		402				830	
04:30	43		89				132		16:30	442		356				798	
04:45	46	155	162	341			208	496	16:45	419	1825	398	1570			817	3395
05:00	67		136				203		17:00	452		340				792	
05:15	79		167				246		17:15	393		426				819	
05:30	92		277				369		17:30	366		361				727	
05:45	135	373	447	1027			582	1400	17:45	373	1584	391	1518			764	3102
06:00	154		364				518		18:00	463		317				780	
06:15	241		473				714		18:15	416		277				693	
06:30	279		478				757		18:30	388		302				690	
06:45	328	1002	648	1963			976	2965	18:45	327	1594	252	1148			579	2742
07:00	339		562				901		19:00	309		250				559	
07:15	385		558				943		19:15	298		215				513	
07:30	444		580				1024		19:30	270		188				458	
07:45	367	1535	679	2379			1046	3914	19:45	216	1093	207	860			423	1953
08:00	399		639				1038		20:00	246		164				410	
08:15	436		624				1060		20:15	220		163				383	
08:30	447		621				1068		20:30	204		136				340	
08:45	374	1656	663	2547			1037	4203	20:45	159	829	154	617			313	1446
09:00	374		534				908		21:00	191		138				329	
09:15	375		482				857		21:15	138		134				272	
09:30	358		446				804		21:30	118		124				242	
09:45	394	1501	442	1904			836	3405	21:45	102	549	94	490			196	1039
10:00	388		412				800		22:00	119		96				215	
10:15	383		415				798		22:15	114		85				199	
10:30	399		360				759		22:30	85		60				145	
10:45	370	1540	393	1580			763	3120	22:45	47	365	75	316			122	681
11:00	429		397				826		23:00	76		57				133	
11:15	463		422				885		23:15	44		42				86	
11:30	456		471				927		23:30	64		30				94	
11:45	504	1852	439	1729			943	3581	23:45	63	247	37	166			100	413
TOTALS		10046		13775				23821	TOTALS		16036		13647				29683
SPLIT %		42.2%		57.8%				44.5%	SPLIT %		54.0%		46.0%				55.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	26,082	27,422	0	0	53,504

AM Peak Hour	11:45	07:45				07:45	PM Peak Hour	14:30	12:15				15:15
AM Pk Volume	1906	2563				4212	PM Pk Volume	2244	1905				3869
Pk Hr Factor	0.945	0.944				0.986	Pk Hr Factor	0.940	0.925				0.958
7 - 9 Volume	3191	4926	0	0		8117	4 - 6 Volume	3409	3088	0	0		6497
7 - 9 Peak Hour	08:00	07:45				07:45	4 - 6 Peak Hour	16:00	16:00				16:00
7 - 9 Pk Volume	1656	2563	0	0		4212	4 - 6 Pk Volume	1825	1570	0	0		3395
Pk Hr Factor	0.926	0.944	0.000	0.000		0.986	Pk Hr Factor	0.851	0.948	0.000	0.000		0.893

ATTACHMENT 4

Prepared by NDS/ATD

VOLUME

Sunrise Blvd Bet. Folsom Blvd & White Rock Rd

Day: Tuesday
Date: 9/26/2017

City: Rancho Cordova
Project #: CA17_7694_023

DAILY TOTALS	NB	SB	EB	WB	Total
	19,097	22,141	0	0	41,238

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	22		13				35		12:00	317		370				687	
00:15	12		25				37		12:15	360		370				730	
00:30	8		10				18		12:30	335		326				661	
00:45	9	51	5	53			14	104	12:45	354	1366	336	1402			690	2768
01:00	13		18				31		13:00	369		335				704	
01:15	13		14				27		13:15	334		375				709	
01:30	18		26				44		13:30	360		361				721	
01:45	8	52	18	76			26	128	13:45	333	1396	348	1419			681	2815
02:00	12		7				19		14:00	343		287				630	
02:15	10		11				21		14:15	347		300				647	
02:30	13		18				31		14:30	424		302				726	
02:45	12	47	8	44			20	91	14:45	375	1489	357	1246			732	2735
03:00	13		15				28		15:00	374		305				679	
03:15	10		19				29		15:15	346		321				667	
03:30	16		15				31		15:30	448		371				819	
03:45	15	54	30	79			45	133	15:45	356	1524	383	1380			739	2904
04:00	21		25				46		16:00	364		347				711	
04:15	29		41				70		16:15	321		398				719	
04:30	40		45				85		16:30	408		383				791	
04:45	53	143	144	255			197	398	16:45	302	1395	376	1504			678	2899
05:00	49		122				171		17:00	338		360				698	
05:15	65		158				223		17:15	340		378				718	
05:30	101		276				377		17:30	316		337				653	
05:45	142	357	441	997			583	1354	17:45	285	1279	327	1402			612	2681
06:00	164		299				463		18:00	309		252				561	
06:15	234		388				622		18:15	263		233				496	
06:30	248		386				634		18:30	253		231				484	
06:45	306	952	399	1472			705	2424	18:45	210	1035	232	948			442	1983
07:00	318		360				678		19:00	218		197				415	
07:15	311		388				699		19:15	196		158				354	
07:30	379		442				821		19:30	167		161				328	
07:45	363	1371	434	1624			797	2995	19:45	131	712	146	662			277	1374
08:00	361		507				868		20:00	122		151				273	
08:15	349		470				819		20:15	109		135				244	
08:30	354		417				771		20:30	109		152				261	
08:45	347	1411	403	1797			750	3208	20:45	79	419	97	535			176	954
09:00	292		340				632		21:00	82		107				189	
09:15	253		422				675		21:15	54		97				151	
09:30	257		373				630		21:30	52		107				159	
09:45	251	1053	347	1482			598	2535	21:45	47	235	87	398			134	633
10:00	307		403				710		22:00	60		68				128	
10:15	279		403				682		22:15	52		59				111	
10:30	279		358				637		22:30	50		64				114	
10:45	274	1139	337	1501			611	2640	22:45	27	189	52	243			79	432
11:00	318		355				673		23:00	43		30				73	
11:15	315		406				721		23:15	21		26				47	
11:30	328		394				722		23:30	18		20				38	
11:45	357	1318	375	1530			732	2848	23:45	28	110	16	92			44	202
TOTALS		7948		10910				18858	TOTALS		11149		11231				22380
SPLIT %		42.1%		57.9%				45.7%	SPLIT %		49.8%		50.2%				54.3%

DAILY TOTALS	NB	SB	EB	WB	Total
	19,097	22,141	0	0	41,238

AM Peak Hour	07:30	07:30				07:30	PM Peak Hour	14:45	16:15				15:30
AM Pk Volume	1452	1853				3305	PM Pk Volume	1543	1517				2988
Pk Hr Factor	0.958	0.914				0.952	Pk Hr Factor	0.861	0.953				0.912
7 - 9 Volume	2782	3421	0	0		6203	4 - 6 Volume	2674	2906	0	0		5580
7 - 9 Peak Hour	07:30	07:30				07:30	4 - 6 Peak Hour	16:00	16:15				16:00
7 - 9 Pk Volume	1452	1853	0	0		3305	4 - 6 Pk Volume	1395	1517	0	0		2899
Pk Hr Factor	0.958	0.914	0.000	0.000		0.952	Pk Hr Factor	0.855	0.953	0.000	0.000		0.916

ATTACHMENT 4

Prepared by NDS/ATD

VOLUME

Sunrise Blvd Bet. White Rock Rd & Douglas Rd

Day: Thursday
Date: 9/28/2017

City: Rancho Cordova
Project #: CA17_7694_024

DAILY TOTALS	NB	SB	EB	WB	Total
	15,708	15,233	0	0	30,941

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	14		19				33		12:00	274		191				465	
00:15	12		23				35		12:15	216		252				468	
00:30	4		9				13		12:30	252		212				464	
00:45	10	40	17	68			27	108	12:45	248	990	252	907			500	1897
01:00	6		11				17		13:00	250		223				473	
01:15	8		8				16		13:15	234		232				466	
01:30	11		10				21		13:30	255		271				526	
01:45	11	36	11	40			22	76	13:45	236	975	258	984			494	1959
02:00	4		8				12		14:00	268		265				533	
02:15	5		4				9		14:15	220		274				494	
02:30	4		7				11		14:30	273		241				514	
02:45	4	17	8	27			12	44	14:45	225	986	259	1039			484	2025
03:00	12		10				22		15:00	232		276				508	
03:15	7		13				20		15:15	213		274				487	
03:30	13		3				16		15:30	254		362				616	
03:45	20	52	14	40			34	92	15:45	238	937	354	1266			592	2203
04:00	19		11				30		16:00	220		399				619	
04:15	31		15				46		16:15	230		377				607	
04:30	45		14				59		16:30	267		443				710	
04:45	57	152	28	68			85	220	16:45	226	943	418	1637			644	2580
05:00	57		49				106		17:00	316		468				784	
05:15	81		59				140		17:15	247		453				700	
05:30	117		78				195		17:30	207		379				586	
05:45	157	412	109	295			266	707	17:45	232	1002	350	1650			582	2652
06:00	140		118				258		18:00	175		288				463	
06:15	207		130				337		18:15	191		286				477	
06:30	230		124				354		18:30	194		233				427	
06:45	359	936	116	488			475	1424	18:45	164	724	227	1034			391	1758
07:00	366		141				507		19:00	136		212				348	
07:15	398		146				544		19:15	127		165				292	
07:30	489		169				658		19:30	158		196				354	
07:45	458	1711	176	632			634	2343	19:45	94	515	179	752			273	1267
08:00	401		195				596		20:00	104		177				281	
08:15	409		209				618		20:15	105		133				238	
08:30	358		180				538		20:30	91		130				221	
08:45	349	1517	201	785			550	2302	20:45	89	389	143	583			232	972
09:00	312		205				517		21:00	84		135				219	
09:15	229		156				385		21:15	70		117				187	
09:30	248		157				405		21:30	61		83				144	
09:45	265	1054	187	705			452	1759	21:45	46	261	65	400			111	661
10:00	222		180				402		22:00	43		71				114	
10:15	241		179				420		22:15	46		69				115	
10:30	190		152				342		22:30	28		64				92	
10:45	212	865	164	675			376	1540	22:45	28	145	48	252			76	397
11:00	210		174				384		23:00	24		39				63	
11:15	258		163				421		23:15	17		32				49	
11:30	255		172				427		23:30	14		37				51	
11:45	254	977	264	773			518	1750	23:45	17	72	25	133			42	205
TOTALS		7769		4596				12365	TOTALS		7939		10637				18576
SPLIT %		62.8%		37.2%				40.0%	SPLIT %		42.7%		57.3%				60.0%

DAILY TOTALS	NB	SB	EB	WB	Total
	15,708	15,233	0	0	30,941

AM Peak Hour	07:30	11:45					07:30		PM Peak Hour	16:30	16:30					16:30		
AM Pk Volume	1757	919					2506		PM Pk Volume	1056	1782					2838		
Pk Hr Factor	0.898	0.870					0.952		Pk Hr Factor	0.835	0.952					0.905		
7 - 9 Volume	3228	1417	0	0			4645		4 - 6 Volume	1945	3287	0	0			5232		
7 - 9 Peak Hour	07:30	08:00					07:30		4 - 6 Peak Hour	16:30	16:30					16:30		
7 - 9 Pk Volume	1757	785	0	0			2506		4 - 6 Pk Volume	1056	1782	0	0			2838		
Pk Hr Factor	0.898	0.939	0.000	0.000			0.952		Pk Hr Factor	0.835	0.952	0.000	0.000			0.905		

Prepared by NDS/ATD

VOLUME

Sunrise Blvd Bet. Douglas Rd & Jackson Rd/SR-16

Day: Thursday
Date: 9/28/2017

City: Rancho Cordova
Project #: CA17_7694_025

DAILY TOTALS	NB	SB	EB	WB	Total
	10,849	11,786	0	0	22,635

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	10		15				25		12:00	122		136				258	
00:15	14		14				28		12:15	133		143				276	
00:30	5		7				12		12:30	133		155				288	
00:45	10	39	8	44			18	83	12:45	163	551	159	593			322	1144
01:00	3		8				11		13:00	112		169				281	
01:15	9		10				19		13:15	146		146				292	
01:30	5		15				20		13:30	128		155				283	
01:45	9	26	5	38			14	64	13:45	139	525	187	657			326	1182
02:00	4		9				13		14:00	138		182				320	
02:15	8		7				15		14:15	139		183				322	
02:30	2		1				3		14:30	169		258				427	
02:45	4	18	8	25			12	43	14:45	144	590	257	880			401	1470
03:00	2		12				14		15:00	145		247				392	
03:15	6		5				11		15:15	155		237				392	
03:30	18		8				26		15:30	164		308				472	
03:45	11	37	10	35			21	72	15:45	186	650	307	1099			493	1749
04:00	11		14				25		16:00	145		332				477	
04:15	18		15				33		16:15	162		358				520	
04:30	35		16				51		16:30	129		361				490	
04:45	35	99	16	61			51	160	16:45	151	587	405	1456			556	2043
05:00	50		37				87		17:00	149		387				536	
05:15	76		55				131		17:15	126		420				546	
05:30	127		60				187		17:30	180		346				526	
05:45	155	408	63	215			218	623	17:45	131	586	287	1440			418	2026
06:00	131		78				209		18:00	116		265				381	
06:15	218		114				332		18:15	144		208				352	
06:30	248		121				369		18:30	103		212				315	
06:45	330	927	109	422			439	1349	18:45	90	453	179	864			269	1317
07:00	328		124				452		19:00	78		163				241	
07:15	362		152				514		19:15	90		112				202	
07:30	405		166				571		19:30	92		97				189	
07:45	390	1485	133	575			523	2060	19:45	61	321	101	473			162	794
08:00	342		171				513		20:00	57		87				144	
08:15	336		175				511		20:15	51		82				133	
08:30	267		125				392		20:30	47		82				129	
08:45	263	1208	141	612			404	1820	20:45	60	215	79	330			139	545
09:00	218		132				350		21:00	43		91				134	
09:15	181		145				326		21:15	42		61				103	
09:30	159		128				287		21:30	34		60				94	
09:45	153	711	129	534			282	1245	21:45	29	148	45	257			74	405
10:00	151		116				267		22:00	37		47				84	
10:15	148		107				255		22:15	31		30				61	
10:30	112		136				248		22:30	18		42				60	
10:45	140	551	118	477			258	1028	22:45	15	101	23	142			38	243
11:00	153		98				251		23:00	14		24				38	
11:15	111		116				227		23:15	14		18				32	
11:30	157		116				273		23:30	5		15				20	
11:45	140	561	151	481			291	1042	23:45	19	52	19	76			38	128
TOTALS		6070		3519				9589	TOTALS		4779		8267				13046
SPLIT %		63.3%		36.7%				42.4%	SPLIT %		36.6%		63.4%				57.6%

DAILY TOTALS	NB	SB	EB	WB	Total
	10,849	11,786	0	0	22,635

AM Peak Hour	07:15	07:30			07:15	PM Peak Hour	15:30	16:30			16:45
AM Pk Volume	1499	645			2121	PM Pk Volume	657	1573			2164
Pk Hr Factor	0.925	0.921			0.929	Pk Hr Factor	0.883	0.936			0.973
7 - 9 Volume	2693	1187	0	0	3880	4 - 6 Volume	1173	2896	0	0	4069
7 - 9 Peak Hour	07:15	07:30			07:15	4 - 6 Peak Hour	16:45	16:30			16:45
7 - 9 Pk Volume	1499	645	0	0	2121	4 - 6 Pk Volume	606	1573	0	0	2164
Pk Hr Factor	0.925	0.921	0.000	0.000	0.929	Pk Hr Factor	0.842	0.936	0.000	0.000	0.973

ATTACHMENT 4

Prepared by NDS/ATD

VOLUME

Sunrise Blvd Bet. Jackson Rd/SR-16 & Grant Line Rd

Day: Thursday
Date: 9/28/2017

City: Sloughhouse
Project #: CA17_7694_026

DAILY TOTALS	NB	SB	EB	WB	Total
	5,396	6,352	0	0	11,748

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	9		12				21		12:00	51		69				120	
00:15	8		6				14		12:15	54		53				107	
00:30	2		5				7		12:30	50		63				113	
00:45	5	24	2	25			7	49	12:45	63	218	66	251			129	469
01:00	4		5				9		13:00	53		81				134	
01:15	3		6				9		13:15	57		68				125	
01:30	2		5				7		13:30	68		75				143	
01:45	5	14	6	22			11	36	13:45	40	218	89	313			129	531
02:00	2		4				6		14:00	67		96				163	
02:15	4		2				6		14:15	63		96				159	
02:30	3		2				5		14:30	57		140				197	
02:45	3	12	7	15			10	27	14:45	56	243	164	496			220	739
03:00	1		9				10		15:00	70		143				213	
03:15	5		3				8		15:15	82		141				223	
03:30	10		3				13		15:30	89		162				251	
03:45	7	23	11	26			18	49	15:45	93	334	189	635			282	969
04:00	8		10				18		16:00	66		183				249	
04:15	8		9				17		16:15	92		209				301	
04:30	21		7				28		16:30	66		219				285	
04:45	19	56	11	37			30	93	16:45	76	300	206	817			282	1117
05:00	33		9				42		17:00	81		202				283	
05:15	40		29				69		17:15	76		218				294	
05:30	84		25				109		17:30	81		210				291	
05:45	80	237	28	91			108	328	17:45	75	313	221	851			296	1164
06:00	91		40				131		18:00	49		156				205	
06:15	135		60				195		18:15	59		137				196	
06:30	161		61				222		18:30	54		90				144	
06:45	141	528	77	238			218	766	18:45	23	185	101	484			124	669
07:00	184		87				271		19:00	33		66				99	
07:15	209		105				314		19:15	45		54				99	
07:30	189		116				305		19:30	41		47				88	
07:45	194	776	81	389			275	1165	19:45	49	168	34	201			83	369
08:00	162		100				262		20:00	20		29				49	
08:15	186		149				335		20:15	32		42				74	
08:30	146		95				241		20:30	25		40				65	
08:45	152	646	60	404			212	1050	20:45	23	100	25	136			48	236
09:00	107		71				178		21:00	21		32				53	
09:15	105		80				185		21:15	24		26				50	
09:30	77		67				144		21:30	22		26				48	
09:45	65	354	69	287			134	641	21:45	21	88	23	107			44	195
10:00	69		61				130		22:00	23		18				41	
10:15	58		42				100		22:15	18		19				37	
10:30	48		62				110		22:30	10		16				26	
10:45	56	231	41	206			97	437	22:45	14	65	11	64			25	129
11:00	48		53				101		23:00	9		16				25	
11:15	50		54				104		23:15	8		5				13	
11:30	66		53				119		23:30	4		3				7	
11:45	65	229	66	226			131	455	23:45	13	34	7	31			20	65
TOTALS		3130		1966				5096	TOTALS		2266		4386				6652
SPLIT %		61.4%		38.6%				43.4%	SPLIT %		34.1%		65.9%				56.6%

DAILY TOTALS	NB	SB	EB	WB	Total
	5,396	6,352	0	0	11,748

AM Peak Hour	07:00	07:30			07:30	PM Peak Hour	15:30	17:00			17:00
AM Pk Volume	776	446			1177	PM Pk Volume	340	851			1164
Pk Hr Factor	0.928	0.748			0.878	Pk Hr Factor	0.914	0.963			0.983
7 - 9 Volume	1422	793	0	0	2215	4 - 6 Volume	613	1668	0	0	2281
7 - 9 Peak Hour	07:00	07:30			07:30	4 - 6 Peak Hour	16:15	17:00			17:00
7 - 9 Pk Volume	776	446	0	0	1177	4 - 6 Pk Volume	315	851	0	0	1164
Pk Hr Factor	0.928	0.748	0.000	0.000	0.878	Pk Hr Factor	0.856	0.963	0.000	0.000	0.983

Prepared by NDS/ATD

VOLUME

Grant Line Rd Bet. White Rock Rd & Douglas Rd

Day: Thursday
Date: 9/28/2017

City: Rancho Cordova
Project #: CA17_7694_027

DAILY TOTALS	NB	SB	EB	WB	Total
	6,841	5,963	0	0	12,804

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	4		5				9		12:00	85		76				161	
00:15	4		3				7		12:15	80		104				184	
00:30	2		6				8		12:30	101		56				157	
00:45	7	17	2	16			9	33	12:45	87	353	78	314			165	667
01:00	4		4				8		13:00	98		81				179	
01:15	3		3				6		13:15	99		90				189	
01:30	1		3				4		13:30	111		74				185	
01:45	5	13	2	12			7	25	13:45	97	405	95	340			192	745
02:00	5		1				6		14:00	97		100				197	
02:15	2		4				6		14:15	89		93				182	
02:30	4		3				7		14:30	89		98				187	
02:45	1	12	3	11			4	23	14:45	112	387	98	389			210	776
03:00	0		2				2		15:00	107		108				215	
03:15	2		6				8		15:15	105		133				238	
03:30	1		6				7		15:30	98		156				254	
03:45	2	5	3	17			5	22	15:45	125	435	166	563			291	998
04:00	3		2				5		16:00	110		155				265	
04:15	8		8				16		16:15	129		174				303	
04:30	15		12				27		16:30	148		176				324	
04:45	12	38	12	34			24	72	16:45	145	532	149	654			294	1186
05:00	17		22				39		17:00	147		167				314	
05:15	33		24				57		17:15	150		197				347	
05:30	50		29				79		17:30	129		148				277	
05:45	45	145	35	110			80	255	17:45	132	558	151	663			283	1221
06:00	68		57				125		18:00	98		104				202	
06:15	98		56				154		18:15	99		122				221	
06:30	92		63				155		18:30	75		67				142	
06:45	129	387	94	270			223	657	18:45	76	348	60	353			136	701
07:00	154		105				259		19:00	65		60				125	
07:15	192		102				294		19:15	51		60				111	
07:30	193		114				307		19:30	35		44				79	
07:45	225	764	109	430			334	1194	19:45	30	181	57	221			87	402
08:00	202		102				304		20:00	31		43				74	
08:15	196		89				285		20:15	26		43				69	
08:30	187		86				273		20:30	28		36				64	
08:45	168	753	87	364			255	1117	20:45	28	113	30	152			58	265
09:00	139		76				215		21:00	26		35				61	
09:15	128		73				201		21:15	19		37				56	
09:30	98		65				163		21:30	24		23				47	
09:45	120	485	76	290			196	775	21:45	16	85	23	118			39	203
10:00	112		74				186		22:00	16		24				40	
10:15	114		67				181		22:15	16		20				36	
10:30	119		52				171		22:30	9		18				27	
10:45	75	420	62	255			137	675	22:45	10	51	19	81			29	132
11:00	70		74				144		23:00	10		9				19	
11:15	69		61				130		23:15	8		10				18	
11:30	101		63				164		23:30	8		2				10	
11:45	83	323	83	281			166	604	23:45	5	31	4	25			9	56
TOTALS		3362		2090				5452	TOTALS		3479		3873				7352
SPLIT %		61.7%		38.3%				42.6%	SPLIT %		47.3%		52.7%				57.4%

DAILY TOTALS	NB	SB	EB	WB	Total
	6,841	5,963	0	0	12,804

AM Peak Hour	07:30	07:00				07:15	PM Peak Hour	16:30	16:30				16:30
AM Pk Volume	816	430				1239	PM Pk Volume	590	689				1279
Pk Hr Factor	0.907	0.943				0.927	Pk Hr Factor	0.983	0.874				0.921
7 - 9 Volume	1517	794	0	0		2311	4 - 6 Volume	1090	1317	0	0		2407
7 - 9 Peak Hour	07:30	07:00				07:15	4 - 6 Peak Hour	16:30	16:30				16:30
7 - 9 Pk Volume	816	430	0	0		1239	4 - 6 Pk Volume	590	689	0	0		1279
Pk Hr Factor	0.907	0.943	0.000	0.000		0.927	Pk Hr Factor	0.983	0.874	0.000	0.000		0.921

ATTACHMENT 4

Prepared by NDS/ATD

VOLUME

Grant Line Rd Bet. Douglas Rd & Jackson Rd/SR-16

Day: Thursday
Date: 9/28/2017

City: Rancho Cordova
Project #: CA17_7694_028

DAILY TOTALS	NB	SB	EB	WB	Total
	4,555	3,969	0	0	8,524

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	3		2				5		12:00	45		50				95	
00:15	3		3				6		12:15	49		48				97	
00:30	1		2				3		12:30	50		31				81	
00:45	8	15	2	9			10	24	12:45	50	194	42	171			92	365
01:00	2		1				3		13:00	47		46				93	
01:15	3		4				7		13:15	69		51				120	
01:30	3		2				5		13:30	65		41				106	
01:45	4	12	2	9			6	21	13:45	46	227	49	187			95	414
02:00	4		1				5		14:00	46		46				92	
02:15	2		2				4		14:15	46		63				109	
02:30	2		3				5		14:30	60		53				113	
02:45	1	9	2	8			3	17	14:45	60	212	75	237			135	449
03:00	1		1				2		15:00	65		81				146	
03:15	1		4				5		15:15	59		102				161	
03:30	2		1				3		15:30	77		109				186	
03:45	1	5	2	8			3	13	15:45	84	285	127	419			211	704
04:00	4		1				5		16:00	92		114				206	
04:15	11		5				16		16:15	100		162				262	
04:30	10		6				16		16:30	109		154				263	
04:45	13	38	8	20			21	58	16:45	88	389	140	570			228	959
05:00	21		6				27		17:00	107		134				241	
05:15	36		14				50		17:15	103		190				293	
05:30	39		22				61		17:30	96		152				248	
05:45	45	141	24	66			69	207	17:45	93	399	117	593			210	992
06:00	59		32				91		18:00	65		89				154	
06:15	75		44				119		18:15	73		80				153	
06:30	85		35				120		18:30	56		53				109	
06:45	112	331	52	163			164	494	18:45	54	248	43	265			97	513
07:00	114		77				191		19:00	43		38				81	
07:15	117		96				213		19:15	36		34				70	
07:30	161		63				224		19:30	26		24				50	
07:45	166	558	58	294			224	852	19:45	19	124	25	121			44	245
08:00	129		76				205		20:00	18		16				34	
08:15	127		64				191		20:15	23		18				41	
08:30	113		62				175		20:30	25		18				43	
08:45	99	468	41	243			140	711	20:45	20	86	19	71			39	157
09:00	82		35				117		21:00	20		11				31	
09:15	75		41				116		21:15	17		16				33	
09:30	61		38				99		21:30	22		12				34	
09:45	68	286	33	147			101	433	21:45	10	69	11	50			21	119
10:00	70		42				112		22:00	16		15				31	
10:15	50		39				89		22:15	11		7				18	
10:30	41		27				68		22:30	4		3				7	
10:45	48	209	30	138			78	347	22:45	12	43	9	34			21	77
11:00	42		38				80		23:00	6		7				13	
11:15	44		30				74		23:15	7		4				11	
11:30	55		37				92		23:30	4		3				7	
11:45	46	187	24	129			70	316	23:45	3	20	3	17			6	37
TOTALS		2259		1234				**3493**	**TOTALS**		2296		2735				**5031**
SPLIT %		64.7%		35.3%				**41.0%**	**SPLIT %**		45.6%		54.4%				**59.0%**

DAILY TOTALS	NB	SB	EB	WB	Total
	4,555	3,969	0	0	8,524

AM Peak Hour	07:30	07:00				**07:15**	**PM Peak Hour**	16:30	16:30				**16:30**
AM Pk Volume	583	294				**866**	**PM Pk Volume**	407	618				**1025**
Pk Hr Factor	0.878	0.766				**0.967**	**Pk Hr Factor**	0.933	0.813				**0.875**
7 - 9 Volume	1026	537	0	0		**1563**	**4 - 6 Volume**	788	1163	0	0		**1951**
7 - 9 Peak Hour	07:30	07:00				**07:15**	**4 - 6 Peak Hour**	16:30	16:30				**16:30**
7 - 9 Pk Volume	583	294	0	0		**866**	**4 - 6 Pk Volume**	407	618	0	0		**1025**
Pk Hr Factor	0.878	0.766	0.000	0.000		**0.967**	**Pk Hr Factor**	0.933	0.813	0.000	0.000		**0.875**

Prepared by NDS/ATD

VOLUME

Grant Line Rd Bet. Jackson Rd/SR-16 & Sunrise Blvd

Day: Thursday
Date: 9/28/2017

City: Sloughhouse
Project #: CA17_7694_029

DAILY TOTALS	NB	SB	EB	WB	Total
	4,061	3,684	0	0	7,745

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	4		4				8		12:00	39		38				77	
00:15	4		3				7		12:15	41		48				89	
00:30	2		5				7		12:30	41		36				77	
00:45	8	18	3	15			11	33	12:45	40	161	49	171			89	332
01:00	3		1				4		13:00	45		49				94	
01:15	3		4				7		13:15	53		44				97	
01:30	3		1				4		13:30	44		37				81	
01:45	6	15	3	9			9	24	13:45	61	203	47	177			108	380
02:00	1		3				4		14:00	45		51				96	
02:15	2		1				3		14:15	46		56				102	
02:30	2		3				5		14:30	49		65				114	
02:45	2	7	2	9			4	16	14:45	54	194	72	244			126	438
03:00	1		2				3		15:00	69		66				135	
03:15	1		3				4		15:15	49		64				113	
03:30	1		0				1		15:30	87		102				189	
03:45	1	4	4	9			5	13	15:45	90	295	91	323			181	618
04:00	4		4				8		16:00	79		112				191	
04:15	13		6				19		16:15	101		86				187	
04:30	18		4				22		16:30	93		112				205	
04:45	10	45	13	27			23	72	16:45	84	357	98	408			182	765
05:00	22		10				32		17:00	97		119				216	
05:15	38		13				51		17:15	76		111				187	
05:30	38		21				59		17:30	81		115				196	
05:45	48	146	26	70			74	216	17:45	83	337	75	420			158	757
06:00	55		28				83		18:00	60		89				149	
06:15	67		48				115		18:15	76		67				143	
06:30	72		46				118		18:30	56		60				116	
06:45	85	279	54	176			139	455	18:45	70	262	40	256			110	518
07:00	106		67				173		19:00	50		35				85	
07:15	96		89				185		19:15	37		32				69	
07:30	104		71				175		19:30	33		25				58	
07:45	106	412	79	306			185	718	19:45	38	158	27	119			65	277
08:00	73		84				157		20:00	29		19				48	
08:15	90		92				182		20:15	26		17				43	
08:30	93		56				149		20:30	27		23				50	
08:45	74	330	46	278			120	608	20:45	27	109	19	78			46	187
09:00	76		45				121		21:00	22		14				36	
09:15	64		49				113		21:15	23		17				40	
09:30	61		47				108		21:30	17		14				31	
09:45	70	271	43	184			113	455	21:45	14	76	14	59			28	135
10:00	58		44				102		22:00	12		12				24	
10:15	38		34				72		22:15	11		11				22	
10:30	46		36				82		22:30	10		10				20	
10:45	41	183	25	139			66	322	22:45	9	42	10	43			19	85
11:00	33		39				72		23:00	5		8				13	
11:15	31		34				65		23:15	6		8				14	
11:30	35		36				71		23:30	5		4				9	
11:45	38	137	30	139			68	276	23:45	4	20	5	25			9	45
TOTALS		1847		1361				**3208**	**TOTALS**		2214		2323				**4537**
SPLIT %		57.6%		42.4%				**41.4%**	**SPLIT %**		48.8%		51.2%				**58.6%**

DAILY TOTALS	NB	SB	EB	WB	Total
	4,061	3,684	0	0	7,745

AM Peak Hour	07:00	07:30					**07:00**		**PM Peak Hour**	16:15	16:45					**16:15**		
AM Pk Volume	412	326					**718**		**PM Pk Volume**	375	443					**790**		
Pk Hr Factor	0.972	0.886					**0.970**		**Pk Hr Factor**	0.928	0.931					**0.914**		
7 - 9 Volume	742	584	0	0			**1326**		**4 - 6 Volume**	694	828	0	0			**1522**		
7 - 9 Peak Hour	07:00	07:30					**07:00**		**4 - 6 Peak Hour**	16:15	16:45					**16:15**		
7 - 9 Pk Volume	412	326	0	0			**718**		**4 - 6 Pk Volume**	375	443	0	0			**790**		
Pk Hr Factor	0.972	0.886	0.000	0.000			**0.970**		**Pk Hr Factor**	0.928	0.931	0.000	0.000			**0.914**		

Appendix B

Analysis Worksheets for Existing (2017) Conditions

Jaeger Ranch
1: Bradshaw Rd & Jackson Rd/SR-16

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	311	249	90	15	319	127	1	190	1644	23	8	61
Future Volume (veh/h)	311	249	90	15	319	127	1	190	1644	23	8	61
Number	3	8	18	7	4	14		1	6	16		5
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0		0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00		1.00		0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		1863	1863	1900		1863
Adj Flow Rate, veh/h	362	290	105	16	351	140		216	1868	26		67
Adj No. of Lanes	1	1	1	1	1	1		1	2	0		1
Peak Hour Factor	0.86	0.86	0.86	0.91	0.91	0.91		0.88	0.88	0.88		0.91
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2		2
Cap, veh/h	289	659	560	19	376	319		230	1487	21		85
Arrive On Green	0.16	0.35	0.35	0.01	0.20	0.20		0.13	0.42	0.42		0.05
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583		1774	3573	50		1774
Grp Volume(v), veh/h	362	290	105	16	351	140		216	923	971		67
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583		1774	1770	1853		1774
Q Serve(g_s), s	24.5	17.9	6.9	1.4	27.9	11.7		18.2	62.6	62.6		5.6
Cycle Q Clear(g_c), s	24.5	17.9	6.9	1.4	27.9	11.7		18.2	62.6	62.6		5.6
Prop In Lane	1.00		1.00	1.00		1.00		1.00		0.03		1.00
Lane Grp Cap(c), veh/h	289	659	560	19	376	319		230	736	771		85
V/C Ratio(X)	1.25	0.44	0.19	0.83	0.93	0.44		0.94	1.25	1.26		0.79
Avail Cap(c_a), veh/h	289	659	560	230	404	343		230	736	771		289
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	63.0	37.2	33.7	74.3	59.1	52.6		64.9	43.9	43.9		70.9
Incr Delay (d2), s/veh	139.1	0.2	0.1	26.8	27.0	0.4		42.3	125.1	127.2		6.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
%ile BackOfQ(50%),veh/ln	23.1	9.3	3.0	0.8	17.2	5.1		11.6	56.1	59.1		2.9
LnGrp Delay(d),s/veh	202.1	37.4	33.7	101.0	86.1	52.9		107.2	169.0	171.1		76.8
LnGrp LOS	F	D	C	F	F	D		F	F	F		E
Approach Vol, veh/h		757			507				2110			
Approach Delay, s/veh		115.6			77.4				163.7			
Approach LOS		F			E				F			

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	57.7	30.0	37.7	12.7	70.0	7.1	60.6
Change Period (Y+Rc), s	5.5	7.4	5.5	7.4	5.5	7.4	5.5	* 7.4
Max Green Setting (Gmax), s	19.5	62.6	24.5	32.6	24.5	62.6	19.5	* 33
Max Q Clear Time (g_c+I1), s	20.2	27.0	26.5	29.9	7.6	64.6	3.4	19.9
Green Ext Time (p_c), s	0.0	9.0	0.0	0.5	0.1	0.0	0.0	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	122.2
HCM 2010 LOS	F

Notes

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	643	294
Future Volume (veh/h)	643	294
Number	2	12
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	707	0
Adj No. of Lanes	2	1
Peak Hour Factor	0.91	0.91
Percent Heavy Veh, %	2	2
Cap, veh/h	1183	529
Arrive On Green	0.33	0.00
Sat Flow, veh/h	3539	1583
Grp Volume(v), veh/h	707	0
Grp Sat Flow(s),veh/h/ln	1770	1583
Q Serve(g_s), s	25.0	0.0
Cycle Q Clear(g_c), s	25.0	0.0
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1183	529
V/C Ratio(X)	0.60	0.00
Avail Cap(c_a), veh/h	1473	659
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	41.6	0.0
Incr Delay (d2), s/veh	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.2	0.0
LnGrp Delay(d),s/veh	42.0	0.0
LnGrp LOS	D	
Approach Vol, veh/h	774	
Approach Delay, s/veh	45.0	
Approach LOS	D	
Timer		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	217	21	115	372	7	67	625	126	4	75	47
Future Volume (veh/h)	45	217	21	115	372	7	67	625	126	4	75	47
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	58	278	27	129	418	8	73	679	137	5	88	55
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.78	0.78	0.78	0.89	0.89	0.89	0.92	0.92	0.92	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	72	705	68	165	953	18	93	539	109	65	367	230
Arrive On Green	0.04	0.22	0.22	0.09	0.27	0.27	0.05	0.36	0.36	0.04	0.34	0.34
Sat Flow, veh/h	1774	3262	314	1774	3552	68	1774	1505	304	1774	1073	671
Grp Volume(v), veh/h	58	150	155	129	208	218	73	0	816	5	0	143
Grp Sat Flow(s),veh/h/ln	1774	1770	1807	1774	1770	1851	1774	0	1809	1774	0	1744
Q Serve(g_s), s	1.9	4.2	4.2	4.1	5.6	5.6	2.3	0.0	20.5	0.2	0.0	3.4
Cycle Q Clear(g_c), s	1.9	4.2	4.2	4.1	5.6	5.6	2.3	0.0	20.5	0.2	0.0	3.4
Prop In Lane	1.00		0.17	1.00		0.04	1.00		0.17	1.00		0.38
Lane Grp Cap(c), veh/h	72	382	391	165	475	497	93	0	647	65	0	597
V/C Ratio(X)	0.80	0.39	0.40	0.78	0.44	0.44	0.79	0.00	1.26	0.08	0.00	0.24
Avail Cap(c_a), veh/h	341	1714	1750	341	1714	1793	341	0	647	341	0	624
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.3	19.2	19.3	25.4	17.4	17.4	26.8	0.0	18.4	26.7	0.0	13.5
Incr Delay (d2), s/veh	7.5	0.9	0.9	3.0	0.9	0.9	5.5	0.0	129.5	0.2	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.1	2.2	2.1	2.8	3.0	1.3	0.0	33.4	0.1	0.0	1.7
LnGrp Delay(d),s/veh	34.7	20.2	20.2	28.5	18.3	18.3	32.3	0.0	147.9	26.9	0.0	14.5
LnGrp LOS	C	C	C	C	B	B	C		F	C		B
Approach Vol, veh/h		363			555			889			148	
Approach Delay, s/veh		22.5			20.6			138.5			14.9	
Approach LOS		C			C			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	19.9	7.0	24.1	9.3	16.9	6.1	25.0
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.5
Max Green Setting (Gmax), s	11.0	55.5	11.0	20.5	11.0	55.5	11.0	20.5
Max Q Clear Time (g_c+I1), s	3.9	7.6	4.3	5.4	6.1	6.2	2.2	22.5
Green Ext Time (p_c), s	0.0	6.2	0.0	12.4	0.0	6.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	74.1
HCM 2010 LOS	E

Notes

Jaeger Ranch
3: Eagles Nest Rd & Jackson Rd/SR-16

Intersection	
Int Delay, s/veh	17.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	59	321	4	5	449	1	9	142	31	0	2	12
Future Vol, veh/h	59	321	4	5	449	1	9	142	31	0	2	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	350	-	-	350	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	92	92	92	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	65	353	4	5	488	1	13	203	44	0	3	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	489	0	0	357	0	0	986	985	355	1085	986	489
Stage 1	-	-	-	-	-	-	485	485	-	499	499	-
Stage 2	-	-	-	-	-	-	501	500	-	586	487	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1074	-	-	1202	-	-	227	248	689	194	248	579
Stage 1	-	-	-	-	-	-	563	552	-	554	544	-
Stage 2	-	-	-	-	-	-	552	543	-	496	550	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1074	-	-	1202	-	-	207	232	689	44	232	579
Mov Cap-2 Maneuver	-	-	-	-	-	-	207	232	-	44	232	-
Stage 1	-	-	-	-	-	-	529	519	-	520	542	-
Stage 2	-	-	-	-	-	-	531	541	-	266	517	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.1	75.7	12.7
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	230	689	1074	-	-	1202	-	-	232	579
HCM Lane V/C Ratio	0.938	0.064	0.06	-	-	0.005	-	-	0.012	0.03
HCM Control Delay (s)	89.1	10.6	8.6	-	-	8	-	-	20.7	11.4
HCM Lane LOS	F	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	8.1	0.2	0.2	-	-	0	-	-	0	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	181	3	21	403	291	7	745	16	126	408	104
Future Volume (veh/h)	110	181	3	21	403	291	7	745	16	126	408	104
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	121	199	3	23	433	313	8	837	18	134	434	111
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.91	0.91	0.91	0.93	0.93	0.93	0.89	0.89	0.89	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	143	552	469	29	432	367	37	807	17	157	953	938
Arrive On Green	0.08	0.30	0.30	0.02	0.23	0.23	0.02	0.44	0.44	0.09	0.51	0.51
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	1817	39	1774	1863	1583
Grp Volume(v), veh/h	121	199	3	23	433	313	8	0	855	134	434	111
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	0	1856	1774	1863	1583
Q Serve(g_s), s	9.6	12.1	0.2	1.9	33.2	27.1	0.6	0.0	63.6	10.7	21.3	4.4
Cycle Q Clear(g_c), s	9.6	12.1	0.2	1.9	33.2	27.1	0.6	0.0	63.6	10.7	21.3	4.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	143	552	469	29	432	367	37	0	824	157	953	938
V/C Ratio(X)	0.84	0.36	0.01	0.80	1.00	0.85	0.22	0.00	1.04	0.85	0.46	0.12
Avail Cap(c_a), veh/h	254	552	469	254	432	367	254	0	824	303	953	938
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.0	39.7	35.5	70.3	55.0	52.7	69.0	0.0	39.8	64.4	22.3	12.8
Incr Delay (d2), s/veh	5.1	0.1	0.0	17.2	44.1	16.6	1.1	0.0	41.6	4.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	6.2	0.1	1.0	22.3	13.5	0.3	0.0	42.0	5.5	10.9	1.9
LnGrp Delay(d),s/veh	70.1	39.9	35.5	87.5	99.1	69.3	70.0	0.0	81.4	69.3	22.4	12.8
LnGrp LOS	E	D	D	F	F	E	E		F	E	C	B
Approach Vol, veh/h		323			769			863			679	
Approach Delay, s/veh		51.1			86.6			81.3			30.1	
Approach LOS		D			F			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.1	40.0	7.5	79.7	6.8	49.3	17.2	70.0
Change Period (Y+Rc), s	4.5	6.8	4.5	* 6.4	4.5	6.8	4.5	6.4
Max Green Setting (Gmax), s	20.5	33.2	20.5	* 64	20.5	33.2	24.5	63.6
Max Q Clear Time (g_c+I1), s	11.6	35.2	2.6	23.3	3.9	14.1	12.7	65.6
Green Ext Time (p_c), s	0.0	0.0	0.0	5.4	0.0	2.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	66.0
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	278	0	66	693	66	3	353	25	22	261	30
Future Volume (veh/h)	38	278	0	66	693	66	3	353	25	22	261	30
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	43	316	0	74	779	74	3	380	27	25	293	34
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.88	0.88	0.88	0.89	0.89	0.89	0.93	0.93	0.93	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	55	674	0	92	640	61	3	392	28	27	311	36
Arrive On Green	0.03	0.36	0.00	0.05	0.38	0.38	0.23	0.23	0.23	0.21	0.21	0.21
Sat Flow, veh/h	1774	1863	0	1774	1675	159	13	1706	121	130	1519	176
Grp Volume(v), veh/h	43	316	0	74	0	853	410	0	0	352	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1774	0	1835	1841	0	0	1825	0	0
Q Serve(g_s), s	4.0	21.6	0.0	6.8	0.0	63.2	36.5	0.0	0.0	31.4	0.0	0.0
Cycle Q Clear(g_c), s	4.0	21.6	0.0	6.8	0.0	63.2	36.5	0.0	0.0	31.4	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.09	0.01		0.07	0.07		0.10
Lane Grp Cap(c), veh/h	55	674	0	92	0	701	423	0	0	374	0	0
V/C Ratio(X)	0.78	0.47	0.00	0.81	0.00	1.22	0.97	0.00	0.00	0.94	0.00	0.00
Avail Cap(c_a), veh/h	274	716	0	220	0	701	423	0	0	422	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	79.5	40.6	0.0	77.6	0.0	51.1	63.1	0.0	0.0	64.7	0.0	0.0
Incr Delay (d2), s/veh	8.4	0.2	0.0	6.1	0.0	110.2	35.5	0.0	0.0	26.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	11.1	0.0	3.5	0.0	53.4	22.7	0.0	0.0	18.6	0.0	0.0
LnGrp Delay(d),s/veh	87.9	40.8	0.0	83.7	0.0	161.3	98.6	0.0	0.0	91.3	0.0	0.0
LnGrp LOS	F	D		F		F	F			F		
Approach Vol, veh/h		359			927			410			352	
Approach Delay, s/veh		46.4			155.1			98.6			91.3	
Approach LOS		D			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.7	70.0		40.7	13.0	66.6		45.0
Change Period (Y+Rc), s	4.5	6.8		6.8	4.5	* 6.8		7.0
Max Green Setting (Gmax), s	25.5	63.2		38.2	20.5	* 64		38.0
Max Q Clear Time (g_c+I1), s	6.0	65.2		33.4	8.8	23.6		38.5
Green Ext Time (p_c), s	0.0	0.0		0.5	0.0	4.7		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		113.8
HCM 2010 LOS		F

Notes

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	122	9	28	686	322	116
Future Volume (veh/h)	122	9	28	686	322	116
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	152	11	30	730	388	140
Adj No. of Lanes	1	1	1	1	1	0
Peak Hour Factor	0.80	0.80	0.94	0.94	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	201	179	38	1030	493	178
Arrive On Green	0.11	0.11	0.02	0.55	0.38	0.38
Sat Flow, veh/h	1774	1583	1774	1863	1308	472
Grp Volume(v), veh/h	152	11	30	730	0	528
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	0	1779
Q Serve(g_s), s	3.0	0.2	0.6	10.3	0.0	9.4
Cycle Q Clear(g_c), s	3.0	0.2	0.6	10.3	0.0	9.4
Prop In Lane	1.00	1.00	1.00			0.27
Lane Grp Cap(c), veh/h	201	179	38	1030	0	671
V/C Ratio(X)	0.76	0.06	0.78	0.71	0.00	0.79
Avail Cap(c_a), veh/h	1722	1537	1045	3344	0	3169
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.3	14.1	17.4	5.9	0.0	9.8
Incr Delay (d2), s/veh	2.2	0.1	12.0	0.3	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.1	0.4	5.2	0.0	4.7
LnGrp Delay(d),s/veh	17.5	14.2	29.3	6.2	0.0	10.6
LnGrp LOS	B	B	C	A		B
Approach Vol, veh/h	163			760	528	
Approach Delay, s/veh	17.3			7.1	10.6	
Approach LOS	B			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.3	20.0				26.2		9.4
Change Period (Y+Rc), s	5.5	* 6.5				* 6.5		5.4
Max Green Setting (Gmax), s	21.0	* 64				* 64		34.6
Max Q Clear Time (g_c+I1), s	2.6	11.4				12.3		5.0
Green Ext Time (p_c), s	0.0	2.1				2.1		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	9.5
HCM 2010 LOS	A

Notes

Intersection	
Intersection Delay, s/veh	15.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	13	1	126	0	463	18	21	269	0
Future Vol, veh/h	0	0	0	13	1	126	0	463	18	21	269	0
Peak Hour Factor	0.97	0.97	0.97	0.70	0.70	0.70	0.95	0.95	0.95	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	19	1	180	0	487	19	24	306	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	0	10.8	18.6	12.8
HCM LOS	-	B	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	9%	7%
Vol Thru, %	96%	100%	1%	93%
Vol Right, %	4%	0%	90%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	481	0	140	290
LT Vol	0	0	13	21
Through Vol	463	0	1	269
RT Vol	18	0	126	0
Lane Flow Rate	506	0	200	330
Geometry Grp	1	1	1	1
Degree of Util (X)	0.698	0	0.301	0.475
Departure Headway (Hd)	4.962	6.443	5.424	5.184
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	734	0	662	695
Service Time	2.962	4.505	3.468	3.213
HCM Lane V/C Ratio	0.689	0	0.302	0.475
HCM Control Delay	18.6	9.5	10.8	12.8
HCM Lane LOS	C	N	B	B
HCM 95th-tile Q	5.7	0	1.3	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	686	403	8	0	320	8	7	31	5	3	3	327
Future Volume (veh/h)	686	403	8	0	320	8	7	31	5	3	3	327
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	700	411	0	0	438	11	7	32	5	4	4	389
Adj No. of Lanes	1	1	1	1	1	0	0	1	0	0	1	1
Peak Hour Factor	0.98	0.98	0.98	0.73	0.73	0.73	0.98	0.98	0.98	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	460	1091	927	2	485	12	13	60	9	181	181	726
Arrive On Green	0.26	0.59	0.00	0.00	0.27	0.27	0.05	0.05	0.05	0.20	0.20	0.20
Sat Flow, veh/h	1774	1863	1583	1774	1809	45	287	1313	205	909	909	1583
Grp Volume(v), veh/h	700	411	0	0	0	449	44	0	0	8	0	389
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1855	1805	0	0	1817	0	1583
Q Serve(g_s), s	24.5	11.1	0.0	0.0	0.0	22.1	2.3	0.0	0.0	0.3	0.0	16.6
Cycle Q Clear(g_c), s	24.5	11.1	0.0	0.0	0.0	22.1	2.3	0.0	0.0	0.3	0.0	16.6
Prop In Lane	1.00		1.00	1.00		0.02	0.16		0.11	0.50		1.00
Lane Grp Cap(c), veh/h	460	1091	927	2	0	497	82	0	0	362	0	726
V/C Ratio(X)	1.52	0.38	0.00	0.00	0.00	0.90	0.54	0.00	0.00	0.02	0.00	0.54
Avail Cap(c_a), veh/h	460	1266	1076	366	0	1257	680	0	0	662	0	987
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.0	10.4	0.0	0.0	0.0	33.4	44.1	0.0	0.0	30.4	0.0	18.3
Incr Delay (d2), s/veh	245.5	0.1	0.0	0.0	0.0	2.5	2.0	0.0	0.0	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	43.3	5.7	0.0	0.0	0.0	11.6	1.2	0.0	0.0	0.2	0.0	7.3
LnGrp Delay(d),s/veh	280.5	10.5	0.0	0.0	0.0	35.9	46.1	0.0	0.0	30.4	0.0	18.6
LnGrp LOS	F	B				D	D			C		B
Approach Vol, veh/h		1111			449			44			397	
Approach Delay, s/veh		180.6			35.9			46.1			18.8	
Approach LOS		F			D			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	30.0	31.3		24.4	0.0	61.3		8.7
Change Period (Y+Rc), s	5.5	6.0		* 5.6	5.5	* 6		4.4
Max Green Setting (Gmax), s	24.5	64.0		* 34	19.5	* 64		35.6
Max Q Clear Time (g_c+I1), s	26.5	24.1		18.6	0.0	13.1		4.3
Green Ext Time (p_c), s	0.0	1.2		0.2	0.0	1.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	113.1
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	354	187	14	1	29	370	427	7	179	47	146	28
Future Volume (veh/h)	354	187	14	1	29	370	427	7	179	47	146	28
Number	1	6	16		5	2	12	3	8	18	7	4
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		0.98	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900		1863	1863	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	389	205	15		33	420	485	8	195	51	180	35
Adj No. of Lanes	1	2	0		1	1	1	1	1	0	2	1
Peak Hour Factor	0.91	0.91	0.91		0.88	0.88	0.88	0.92	0.92	0.92	0.81	0.81
Percent Heavy Veh, %	2	2	2		2	2	2	2	2	2	2	2
Cap, veh/h	369	1757	128		41	626	520	11	228	60	250	422
Arrive On Green	0.21	0.53	0.53		0.02	0.34	0.34	0.01	0.16	0.16	0.07	0.23
Sat Flow, veh/h	1774	3346	243		1774	1863	1548	1774	1424	373	3442	1863
Grp Volume(v), veh/h	389	108	112		33	420	485	8	0	246	180	35
Grp Sat Flow(s),veh/h/ln	1774	1770	1820		1774	1863	1548	1774	0	1797	1721	1863
Q Serve(g_s), s	19.5	2.9	2.9		1.7	18.1	28.4	0.4	0.0	12.5	4.8	1.4
Cycle Q Clear(g_c), s	19.5	2.9	2.9		1.7	18.1	28.4	0.4	0.0	12.5	4.8	1.4
Prop In Lane	1.00		0.13		1.00		1.00	1.00		0.21	1.00	
Lane Grp Cap(c), veh/h	369	929	955		41	626	520	11	0	287	250	422
V/C Ratio(X)	1.06	0.12	0.12		0.81	0.67	0.93	0.75	0.00	0.86	0.72	0.08
Avail Cap(c_a), veh/h	369	1227	1262		376	1294	1075	369	0	1248	715	1288
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.2	11.3	11.3		45.6	26.7	30.1	46.6	0.0	38.4	42.6	28.6
Incr Delay (d2), s/veh	62.2	0.0	0.0		12.9	0.5	3.4	31.5	0.0	2.9	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.9	1.4	1.5		1.0	9.4	12.5	0.3	0.0	6.4	2.3	0.7
LnGrp Delay(d),s/veh	99.4	11.3	11.3		58.6	27.2	33.6	78.1	0.0	41.3	44.0	28.6
LnGrp LOS	F	B	B		E	C	C	E		D	D	C
Approach Vol, veh/h		609				938			254			301
Approach Delay, s/veh		67.6				31.6			42.4			38.2
Approach LOS		E				C			D			D

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	36.4	6.1	26.4	7.3	54.2	12.3	20.1
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	19.5	* 65	19.5	* 65	* 20	* 65	19.5	* 65
Max Q Clear Time (g_c+I1), s	21.5	30.4	2.4	6.2	3.7	4.9	6.8	14.5
Green Ext Time (p_c), s	0.0	1.1	0.0	0.5	0.0	1.1	0.1	0.5

Intersection Summary			
HCM 2010 Ctrl Delay		44.3	
HCM 2010 LOS		D	

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	70
Future Volume (veh/h)	70
Number	14
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	86
Adj No. of Lanes	1
Peak Hour Factor	0.81
Percent Heavy Veh, %	2
Cap, veh/h	359
Arrive On Green	0.23
Sat Flow, veh/h	1583
Grp Volume(v), veh/h	86
Grp Sat Flow(s),veh/h/ln	1583
Q Serve(g_s), s	4.2
Cycle Q Clear(g_c), s	4.2
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	359
V/C Ratio(X)	0.24
Avail Cap(c_a), veh/h	1095
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	29.7
Incr Delay (d2), s/veh	0.1
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	1.8
LnGrp Delay(d),s/veh	29.8
LnGrp LOS	C
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (veh/h)	5	187	95	133	3	64	477	66	6	502	1479	102
Future Volume (veh/h)	5	187	95	133	3	64	477	66	6	502	1479	102
Number		7	4	14		3	8	18		5	2	12
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00		1.00		0.99
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863		1863	1863	1863		1863	1863	1863
Adj Flow Rate, veh/h		205	104	146		72	536	74		546	1608	111
Adj No. of Lanes		2	3	1		2	2	1		2	3	1
Peak Hour Factor		0.91	0.91	0.91		0.89	0.89	0.89		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2
Cap, veh/h		286	1177	366		126	655	293		625	1948	599
Arrive On Green		0.08	0.23	0.23		0.04	0.18	0.18		0.18	0.38	0.38
Sat Flow, veh/h		3442	5085	1583		3442	3539	1583		3442	5085	1563
Grp Volume(v), veh/h		205	104	146		72	536	74		546	1608	111
Grp Sat Flow(s),veh/h/ln		1721	1695	1583		1721	1770	1583		1721	1695	1563
Q Serve(g_s), s		4.7	1.3	6.4		1.7	11.9	3.3		12.6	23.3	3.8
Cycle Q Clear(g_c), s		4.7	1.3	6.4		1.7	11.9	3.3		12.6	23.3	3.8
Prop In Lane		1.00		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h		286	1177	366		126	655	293		625	1948	599
V/C Ratio(X)		0.72	0.09	0.40		0.57	0.82	0.25		0.87	0.83	0.19
Avail Cap(c_a), veh/h		823	2077	647		823	1441	645		823	3911	1203
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		36.4	24.6	26.5		38.6	31.9	28.4		32.4	22.7	16.7
Incr Delay (d2), s/veh		1.3	0.0	0.3		1.5	1.0	0.2		6.8	0.3	0.1
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		2.3	0.6	2.8		0.8	5.9	1.4		6.6	10.9	1.7
LnGrp Delay(d),s/veh		37.7	24.6	26.8		40.2	32.9	28.6		39.2	23.0	16.8
LnGrp LOS		D	C	C		D	C	C		D	C	B
Approach Vol, veh/h			455				682				2265	
Approach Delay, s/veh			31.2				33.2				26.6	
Approach LOS			C				C				C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	38.6	8.5	25.7	20.3	27.1	12.3	21.9
Change Period (Y+Rc), s	5.5	* 7.4	5.5	* 6.8	5.5	* 7.4	5.5	6.8
Max Green Setting (Gmax), s	19.5	* 63	19.5	* 33	19.5	* 63	19.5	33.2
Max Q Clear Time (g_c+I1), s	3.9	25.3	3.7	8.4	14.6	10.2	6.7	13.9
Green Ext Time (p_c), s	0.0	6.0	0.0	1.2	0.2	6.0	0.1	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	28.4
HCM 2010 LOS	C

Notes

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Volume (veh/h)	3	64	477	66
Future Volume (veh/h)	3	64	477	66
Number		1	6	16
Initial Q (Qb), veh		0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00
Parking Bus, Adj		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863
Adj Flow Rate, veh/h		80	596	82
Adj No. of Lanes		2	3	1
Peak Hour Factor		0.80	0.80	0.80
Percent Heavy Veh, %		2	2	2
Cap, veh/h		138	1227	382
Arrive On Green		0.04	0.24	0.24
Sat Flow, veh/h		3442	5085	1583
Grp Volume(v), veh/h		80	596	82
Grp Sat Flow(s),veh/h/ln		1721	1695	1583
Q Serve(g_s), s		1.9	8.2	3.4
Cycle Q Clear(g_c), s		1.9	8.2	3.4
Prop In Lane		1.00		1.00
Lane Grp Cap(c), veh/h		138	1227	382
V/C Ratio(X)		0.58	0.49	0.21
Avail Cap(c_a), veh/h		823	3905	1216
HCM Platoon Ratio		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00
Uniform Delay (d), s/veh		38.5	26.6	24.7
Incr Delay (d2), s/veh		1.4	0.1	0.1
Initial Q Delay(d3),s/veh		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		0.9	3.8	1.5
LnGrp Delay(d),s/veh		39.9	26.7	24.8
LnGrp LOS		D	C	C
Approach Vol, veh/h			758	
Approach Delay, s/veh			27.9	
Approach LOS			C	
Timer				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	228	21	108	487	288	98
Future Volume (veh/h)	228	21	108	487	288	98
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1900
Adj Flow Rate, veh/h	265	24	121	547	335	114
Adj No. of Lanes	0	0	1	1	1	0
Peak Hour Factor	0.86	0.86	0.89	0.89	0.86	0.86
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	324	29	154	974	424	144
Arrive On Green	0.20	0.20	0.09	0.52	0.32	0.32
Sat Flow, veh/h	1605	145	1774	1863	1330	453
Grp Volume(v), veh/h	290	0	121	547	0	449
Grp Sat Flow(s),veh/h/ln	1757	0	1774	1863	0	1783
Q Serve(g_s), s	6.2	0.0	2.6	7.8	0.0	9.0
Cycle Q Clear(g_c), s	6.2	0.0	2.6	7.8	0.0	9.0
Prop In Lane	0.91	0.08	1.00			0.25
Lane Grp Cap(c), veh/h	355	0	154	974	0	569
V/C Ratio(X)	0.82	0.00	0.79	0.56	0.00	0.79
Avail Cap(c_a), veh/h	1578	0	921	3043	0	2899
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.0	0.0	17.6	6.3	0.0	12.2
Incr Delay (d2), s/veh	1.8	0.0	3.3	0.2	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	1.4	4.0	0.0	4.5
LnGrp Delay(d),s/veh	16.8	0.0	20.9	6.5	0.0	13.1
LnGrp LOS	B		C	A		B
Approach Vol, veh/h	290			668	449	
Approach Delay, s/veh	16.8			9.1	13.1	
Approach LOS	B			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.0	18.6				26.7		12.6
Change Period (Y+Rc), s	* 4.6	* 6.1				* 6.1		4.7
Max Green Setting (Gmax), s	* 20	* 64				* 64		35.3
Max Q Clear Time (g_c+I1), s	4.6	11.0				9.8		8.2
Green Ext Time (p_c), s	0.0	1.5				1.5		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	12.0
HCM 2010 LOS	B

Notes

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	2	12	468	194	478	749	23	233	103	464	6	74
Future Volume (veh/h)	2	12	468	194	478	749	23	233	103	464	6	74
Number		1	6	16	5	2	12	3	8	18	7	4
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00	1.00		0.98	1.00		0.98	1.00	
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863
Adj Flow Rate, veh/h		15	571	0	493	772	24	247	405	397	8	92
Adj No. of Lanes		1	2	1	2	2	0	1	1	1	0	2
Peak Hour Factor		0.82	0.82	0.82	0.97	0.97	0.97	0.77	0.77	0.77	0.80	0.80
Percent Heavy Veh, %		2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h		19	821	367	567	1348	42	443	465	650	22	255
Arrive On Green		0.01	0.23	0.00	0.16	0.38	0.38	0.25	0.25	0.25	0.10	0.10
Sat Flow, veh/h		1774	3539	1583	3442	3501	109	1774	1863	1557	218	2524
Grp Volume(v), veh/h		15	571	0	493	390	406	247	405	397	68	0
Grp Sat Flow(s),veh/h/ln		1774	1770	1583	1721	1770	1841	1774	1863	1557	1852	0
Q Serve(g_s), s		0.7	12.1	0.0	11.4	14.2	14.2	9.9	17.0	16.4	2.8	0.0
Cycle Q Clear(g_c), s		0.7	12.1	0.0	11.4	14.2	14.2	9.9	17.0	16.4	2.8	0.0
Prop In Lane		1.00		1.00	1.00		0.06	1.00		1.00	0.12	
Lane Grp Cap(c), veh/h		19	821	367	567	681	709	443	465	650	187	0
V/C Ratio(X)		0.80	0.70	0.00	0.87	0.57	0.57	0.56	0.87	0.61	0.36	0.00
Avail Cap(c_a), veh/h		428	2829	1266	834	1417	1474	756	794	924	782	0
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh		40.3	28.7	0.0	33.3	19.8	19.8	26.7	29.4	18.8	34.3	0.0
Incr Delay (d2), s/veh		24.0	0.4	0.0	4.8	0.3	0.3	0.4	2.5	0.3	0.4	0.0
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		0.5	5.9	0.0	5.8	7.0	7.3	4.9	9.1	7.1	1.5	0.0
LnGrp Delay(d),s/veh		64.3	29.1	0.0	38.1	20.1	20.1	27.1	31.8	19.1	34.7	0.0
LnGrp LOS		E	C		D	C	C	C	C	B	C	
Approach Vol, veh/h			586			1289			1049			128
Approach Delay, s/veh			30.0			27.0			25.9			34.7
Approach LOS			C			C			C			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.2	36.1		13.8	18.7	23.7		25.6
Change Period (Y+Rc), s	* 5.3	* 4.7		5.5	* 5.2	* 4.7		5.2
Max Green Setting (Gmax), s	* 20	* 65		34.5	* 20	* 65		34.8
Max Q Clear Time (g_c+I1), s	2.7	16.2		4.8	13.4	14.1		19.0
Green Ext Time (p_c), s	0.0	2.3		0.1	0.0	2.3		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	27.5
HCM 2010 LOS	C

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	22
Future Volume (veh/h)	22
Number	14
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.94
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1900
Adj Flow Rate, veh/h	28
Adj No. of Lanes	0
Peak Hour Factor	0.80
Percent Heavy Veh, %	2
Cap, veh/h	79
Arrive On Green	0.10
Sat Flow, veh/h	776
Grp Volume(v), veh/h	60
Grp Sat Flow(s),veh/h/ln	1667
Q Serve(g_s), s	2.7
Cycle Q Clear(g_c), s	2.7
Prop In Lane	0.47
Lane Grp Cap(c), veh/h	169
V/C Ratio(X)	0.36
Avail Cap(c_a), veh/h	704
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	34.2
Incr Delay (d2), s/veh	0.5
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	1.3
LnGrp Delay(d),s/veh	34.7
LnGrp LOS	C
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	996	0	300	0	744	523	0	722	278
Future Volume (veh/h)	0	0	0	996	0	300	0	744	523	0	722	278
Number				3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	0	1863	1900	0	1863	1900
Adj Flow Rate, veh/h				754	566	349	0	836	0	0	744	0
Adj No. of Lanes				1	1	0	0	2	0	0	2	0
Peak Hour Factor				0.86	0.86	0.86	0.89	0.89	0.89	0.97	0.97	0.97
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				566	343	211	0	2857	0	0	2857	0
Arrive On Green				0.32	0.32	0.32	0.00	0.81	0.00	0.00	0.81	0.00
Sat Flow, veh/h				1774	1074	662	0	3725	0	0	3725	0
Grp Volume(v), veh/h				754	0	915	0	836	0	0	744	0
Grp Sat Flow(s),veh/h/ln				1774	0	1736	0	1770	0	0	1770	0
Q Serve(g_s), s				35.1	0.0	35.1	0.0	6.6	0.0	0.0	5.6	0.0
Cycle Q Clear(g_c), s				35.1	0.0	35.1	0.0	6.6	0.0	0.0	5.6	0.0
Prop In Lane				1.00		0.38	0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				566	0	554	0	2857	0	0	2857	0
V/C Ratio(X)				1.33	0.00	1.65	0.00	0.29	0.00	0.00	0.26	0.00
Avail Cap(c_a), veh/h				566	0	554	0	2857	0	0	2857	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				37.5	0.0	37.5	0.0	2.7	0.0	0.0	2.6	0.0
Incr Delay (d2), s/veh				161.2	0.0	301.2	0.0	0.3	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				42.5	0.0	63.1	0.0	3.2	0.0	0.0	2.8	0.0
LnGrp Delay(d),s/veh				198.7	0.0	338.7	0.0	2.9	0.0	0.0	2.8	0.0
LnGrp LOS				F		F		A			A	
Approach Vol, veh/h					1669			836			744	
Approach Delay, s/veh					275.4			2.9			2.8	
Approach LOS					F			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		94.5				94.5		40.0
Change Period (Y+Rc), s		* 5				5.0		4.9
Max Green Setting (Gmax), s		* 66				65.0		35.1
Max Q Clear Time (g_c+I1), s		7.6				8.6		37.1
Green Ext Time (p_c), s		3.9				3.9		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	142.9
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	0	1094	0	0	0	0	986	324	0	1471	273
Future Volume (veh/h)	250	0	1094	0	0	0	0	986	324	0	1471	273
Number	7	4	14				1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	175	0	1246				0	1120	0	0	1634	0
Adj No. of Lanes	1	0	2				0	3	0	0	2	1
Peak Hour Factor	0.95	0.95	0.95				0.88	0.88	0.88	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	558	0	993				0	3791	0	0	2638	1180
Arrive On Green	0.31	0.00	0.31				0.00	0.75	0.00	0.00	0.75	0.00
Sat Flow, veh/h	1774	0	3157				0	5421	0	0	3632	1583
Grp Volume(v), veh/h	175	0	1246				0	1120	0	0	1634	0
Grp Sat Flow(s),veh/h/ln	1774	0	1578				0	1695	0	0	1770	1583
Q Serve(g_s), s	8.3	0.0	34.6				0.0	7.9	0.0	0.0	24.0	0.0
Cycle Q Clear(g_c), s	8.3	0.0	34.6				0.0	7.9	0.0	0.0	24.0	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	558	0	993				0	3791	0	0	2638	1180
V/C Ratio(X)	0.31	0.00	1.25				0.00	0.30	0.00	0.00	0.62	0.00
Avail Cap(c_a), veh/h	558	0	993				0	3791	0	0	2638	1180
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	28.7	0.0	37.7				0.0	4.6	0.0	0.0	6.6	0.0
Incr Delay (d2), s/veh	0.1	0.0	123.0				0.0	0.2	0.0	0.0	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.0	32.0				0.0	3.7	0.0	0.0	12.0	0.0
LnGrp Delay(d),s/veh	28.8	0.0	160.7				0.0	4.8	0.0	0.0	7.7	0.0
LnGrp LOS	C		F					A			A	
Approach Vol, veh/h		1421						1120			1634	
Approach Delay, s/veh		144.5						4.8			7.7	
Approach LOS		F						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		87.5		40.0		87.5		
Change Period (Y+Rc), s		* 5		* 5.4		5.0		
Max Green Setting (Gmax), s		* 66		* 35		65.0		
Max Q Clear Time (g_c+I1), s		26.0		36.6		9.9		
Green Ext Time (p_c), s		9.9		0.0		10.2		

Intersection Summary	
HCM 2010 Ctrl Delay	53.5
HCM 2010 LOS	D

Notes

Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (veh/h)	1016	745	18	85	673	269	62
Future Volume (veh/h)	1016	745	18	85	673	269	62
Number	6	16		5	2	3	18
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900		1863	1863	1863	1863
Adj Flow Rate, veh/h	1129	0		99	783	313	72
Adj No. of Lanes	3	0		1	3	2	1
Peak Hour Factor	0.90	0.90		0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2		2	2	2	2
Cap, veh/h	3204	0		127	3912	405	187
Arrive On Green	0.63	0.00		0.07	0.77	0.12	0.12
Sat Flow, veh/h	5421	0		1774	5253	3442	1583
Grp Volume(v), veh/h	1129	0		99	783	313	72
Grp Sat Flow(s),veh/h/ln	1695	0		1774	1695	1721	1583
Q Serve(g_s), s	7.9	0.0		4.1	3.2	6.6	3.2
Cycle Q Clear(g_c), s	7.9	0.0		4.1	3.2	6.6	3.2
Prop In Lane		0.00		1.00		1.00	1.00
Lane Grp Cap(c), veh/h	3204	0		127	3912	405	187
V/C Ratio(X)	0.35	0.00		0.78	0.20	0.77	0.39
Avail Cap(c_a), veh/h	4393	0		469	4393	1669	768
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.6	0.0		34.4	2.4	32.2	30.7
Incr Delay (d2), s/veh	0.1	0.0		3.9	0.1	1.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0		2.1	1.5	3.2	1.4
LnGrp Delay(d),s/veh	6.8	0.0		38.3	2.4	33.4	31.2
LnGrp LOS	A			D	A	C	C
Approach Vol, veh/h	1129				882	385	
Approach Delay, s/veh	6.8				6.4	33.0	
Approach LOS	A				A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		62.9			10.5	52.4		12.4
Change Period (Y+Rc), s		5.0			* 5.1	5.0		3.5
Max Green Setting (Gmax), s		65.0			* 20	65.0		36.5
Max Q Clear Time (g_c+I1), s		5.2			6.1	9.9		8.6
Green Ext Time (p_c), s		39.6			0.0	37.5		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	10.9
HCM 2010 LOS	B

Notes

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (veh/h)	10	91	382	96	16	101	364	98	19	291	901	116
Future Volume (veh/h)	10	91	382	96	16	101	364	98	19	291	901	116
Number		3	8	18		7	4	14		1	6	16
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.98		1.00		0.98		1.00		1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1900		1863	1863	1863		1863	1863	1863
Adj Flow Rate, veh/h		101	424	107		109	391	105		303	939	121
Adj No. of Lanes		2	3	0		2	3	1		2	3	1
Peak Hour Factor		0.90	0.90	0.90		0.93	0.93	0.93		0.96	0.96	0.96
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2
Cap, veh/h		173	703	171		184	895	274		622	1844	573
Arrive On Green		0.05	0.17	0.17		0.05	0.18	0.18		0.18	0.36	0.36
Sat Flow, veh/h		3442	4068	990		3442	5085	1554		3442	5085	1579
Grp Volume(v), veh/h		101	351	180		109	391	105		303	939	121
Grp Sat Flow(s),veh/h/ln		1721	1695	1668		1721	1695	1554		1721	1695	1579
Q Serve(g_s), s		1.9	6.3	6.6		2.0	4.5	3.9		5.2	9.5	3.5
Cycle Q Clear(g_c), s		1.9	6.3	6.6		2.0	4.5	3.9		5.2	9.5	3.5
Prop In Lane		1.00		0.59		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h		173	586	288		184	895	274		622	1844	573
V/C Ratio(X)		0.58	0.60	0.63		0.59	0.44	0.38		0.49	0.51	0.21
Avail Cap(c_a), veh/h		1015	1754	863		1015	2630	804		1015	4953	1538
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		30.7	25.2	25.4		30.6	24.3	24.1		24.3	16.5	14.5
Incr Delay (d2), s/veh		1.2	0.4	0.8		1.1	0.1	0.3		0.2	0.1	0.1
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		0.9	3.0	3.1		1.0	2.1	1.7		2.5	4.4	1.5
LnGrp Delay(d),s/veh		31.9	25.6	26.2		31.7	24.4	24.4		24.5	16.6	14.6
LnGrp LOS		C	C	C		C	C	C		C	B	B
Approach Vol, veh/h			632				605				1363	
Approach Delay, s/veh			26.8				25.7				18.2	
Approach LOS			C				C				B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.5	22.4	8.8	17.4	10.3	29.6	9.0	17.2
Change Period (Y+Rc), s	5.5	* 5.6	5.5	5.8	5.5	* 5.6	5.5	5.8
Max Green Setting (Gmax), s	19.5	* 64	19.5	34.2	19.5	* 64	19.5	34.2
Max Q Clear Time (g_c+I1), s	7.2	12.0	3.9	6.5	5.0	11.5	4.0	8.6
Green Ext Time (p_c), s	0.2	4.3	0.0	2.0	0.1	4.3	0.0	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	22.4
HCM 2010 LOS	C

Notes

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Volume (veh/h)	5	137	410	227
Future Volume (veh/h)	5	137	410	227
Number		5	2	12
Initial Q (Qb), veh		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.99
Parking Bus, Adj		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1900
Adj Flow Rate, veh/h		159	477	264
Adj No. of Lanes		2	3	0
Peak Hour Factor		0.86	0.86	0.86
Percent Heavy Veh, %		2	2	2
Cap, veh/h		249	861	397
Arrive On Green		0.07	0.25	0.25
Sat Flow, veh/h		3442	3390	1561
Grp Volume(v), veh/h		159	477	264
Grp Sat Flow(s),veh/h/ln		1721	1695	1561
Q Serve(g_s), s		3.0	8.1	10.0
Cycle Q Clear(g_c), s		3.0	8.1	10.0
Prop In Lane		1.00		1.00
Lane Grp Cap(c), veh/h		249	861	397
V/C Ratio(X)		0.64	0.55	0.67
Avail Cap(c_a), veh/h		1015	3302	1521
HCM Platoon Ratio		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00
Uniform Delay (d), s/veh		29.8	21.4	22.1
Incr Delay (d2), s/veh		1.0	0.2	0.7
Initial Q Delay(d3),s/veh		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		1.4	3.8	4.4
LnGrp Delay(d),s/veh		30.9	21.6	22.9
LnGrp LOS		C	C	C
Approach Vol, veh/h			900	
Approach Delay, s/veh			23.6	
Approach LOS			C	
Timer				

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (veh/h)	3	219	95	10	1	36	116	233	3	53	972	34
Future Volume (veh/h)	3	219	95	10	1	36	116	233	3	53	972	34
Number		3	8	18		7	4	14		1	6	16
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.97		1.00		0.97		1.00		0.99
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1900		1863	1863	1863		1863	1863	1900
Adj Flow Rate, veh/h		255	110	12		37	120	240		62	1144	40
Adj No. of Lanes		2	3	0		2	1	2		2	3	0
Peak Hour Factor		0.86	0.86	0.86		0.97	0.97	0.97		0.85	0.85	0.85
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2
Cap, veh/h		318	1033	109		69	277	1167		106	1629	57
Arrive On Green		0.09	0.22	0.22		0.02	0.15	0.15		0.03	0.32	0.32
Sat Flow, veh/h		3442	4659	491		3548	1863	3062		3442	5044	176
Grp Volume(v), veh/h		255	79	43		37	120	240		62	769	415
Grp Sat Flow(s),veh/h/ln		1721	1695	1760		1774	1863	1531		1721	1695	1830
Q Serve(g_s), s		7.8	2.0	2.1		1.1	6.3	5.7		1.9	21.3	21.3
Cycle Q Clear(g_c), s		7.8	2.0	2.1		1.1	6.3	5.7		1.9	21.3	21.3
Prop In Lane		1.00		0.28		1.00		1.00		1.00		0.10
Lane Grp Cap(c), veh/h		318	752	390		69	277	1167		106	1095	591
V/C Ratio(X)		0.80	0.11	0.11		0.54	0.43	0.21		0.58	0.70	0.70
Avail Cap(c_a), veh/h		625	2020	1049		644	1118	2549		625	2048	1105
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		47.8	33.3	33.4		52.2	41.6	22.9		51.4	31.8	31.8
Incr Delay (d2), s/veh		1.8	0.0	0.0		2.4	0.4	0.0		1.9	0.3	0.6
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		3.8	0.9	1.0		0.6	3.3	2.4		0.9	10.0	10.8
LnGrp Delay(d),s/veh		49.6	33.3	33.4		54.6	42.0	22.9		53.3	32.2	32.4
LnGrp LOS		D	C	C		D	D	C		D	C	C
Approach Vol, veh/h			377				397				1246	
Approach Delay, s/veh			44.3				31.6				33.3	
Approach LOS			D				C				C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	61.2	15.4	22.0	29.6	40.4	7.6	29.8
Change Period (Y+Rc), s	5.5	* 5.7	5.5	* 6	5.5	* 5.7	5.5	* 6
Max Green Setting (Gmax), s	19.5	* 64	19.5	* 65	24.5	* 65	19.5	* 64
Max Q Clear Time (g_c+I1), s	3.9	48.3	9.8	8.3	24.1	23.3	3.1	4.1
Green Ext Time (p_c), s	0.0	7.2	0.1	0.6	0.0	9.2	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	33.4
HCM 2010 LOS	C

Notes

Movement	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (veh/h)	685	1319	696
Future Volume (veh/h)	685	1319	696
Number	5	2	12
Initial Q (Qb), veh	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863
Adj Flow Rate, veh/h	721	1388	733
Adj No. of Lanes	2	3	1
Peak Hour Factor	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2
Cap, veh/h	773	2628	804
Arrive On Green	0.22	0.52	0.52
Sat Flow, veh/h	3442	5085	1556
Grp Volume(v), veh/h	721	1388	733
Grp Sat Flow(s),veh/h/ln	1721	1695	1556
Q Serve(g_s), s	22.1	19.5	46.3
Cycle Q Clear(g_c), s	22.1	19.5	46.3
Prop In Lane	1.00		1.00
Lane Grp Cap(c), veh/h	773	2628	804
V/C Ratio(X)	0.93	0.53	0.91
Avail Cap(c_a), veh/h	785	3044	931
HCM Platoon Ratio	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	17.3	23.7
Incr Delay (d2), s/veh	17.4	0.1	11.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.4	9.1	22.2
LnGrp Delay(d),s/veh	58.3	17.3	34.8
LnGrp LOS	E	B	C
Approach Vol, veh/h		2842	
Approach Delay, s/veh		32.2	
Approach LOS		C	
Timer			

Movement	EBL2	EBL	EBT	EBR	WBR	WBR2	NBT	NBR	NBR2	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	345	1	913	1076	132	32	1075	457	11	1582	202
Future Volume (vph)	345	1	913	1076	132	32	1075	457	11	1582	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8	6.8	6.8	4.6		4.6			4.6	4.0
Lane Util. Factor		0.91	0.86	0.91	0.88		0.86			0.95	1.00
Frpb, ped/bikes		1.00	0.99	0.98	1.00		0.99			1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt		1.00	0.95	0.85	0.85		0.95			1.00	0.85
Flt Protected		0.95	1.00	1.00	1.00		1.00			1.00	1.00
Satd. Flow (prot)		1610	3025	1417	2787		6074			3539	1545
Flt Permitted		0.95	1.00	1.00	1.00		1.00			1.00	1.00
Satd. Flow (perm)		1610	3025	1417	2787		6074			3539	1545
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.93	0.93	0.93	0.85	0.85
Adj. Flow (vph)	388	1	1026	1209	148	36	1156	491	12	1861	238
RTOR Reduction (vph)	0	0	5	9	16	0	1	0	0	0	0
Lane Group Flow (vph)	0	389	1541	680	168	0	1658	0	0	1861	238
Confl. Peds. (#/hr)	6	6		6	3	3		3	3		6
Confl. Bikes (#/hr)								2	2		3
Turn Type	Split	Split	NA	Perm	Prot		NA			NA	Free
Protected Phases	4	4	4		2!		6!			2	
Permitted Phases				4	2						Free
Actuated Green, G (s)		48.2	48.2	48.2	65.4		65.4			65.4	125.0
Effective Green, g (s)		48.2	48.2	48.2	65.4		65.4			65.4	125.0
Actuated g/C Ratio		0.39	0.39	0.39	0.52		0.52			0.52	1.00
Clearance Time (s)		6.8	6.8	6.8	4.6		4.6			4.6	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.0			1.0	
Lane Grp Cap (vph)		620	1166	546	1458		3177			1851	1545
v/s Ratio Prot		0.24	c0.51		0.06		0.27			c0.53	
v/s Ratio Perm				0.48							0.15
v/c Ratio		0.63	1.32	1.25	0.12		0.52			1.01	0.15
Uniform Delay, d1		31.1	38.4	38.4	15.1		19.5			29.8	0.0
Progression Factor		1.00	1.00	1.00	1.00		1.00			1.22	1.00
Incremental Delay, d2		1.4	150.8	125.5	0.2		0.6			20.0	0.2
Delay (s)		32.6	189.2	163.9	15.3		20.2			56.2	0.2
Level of Service		C	F	F	B		C			E	A
Approach Delay (s)			159.4				20.2			49.9	
Approach LOS			F				C			D	

Intersection Summary			
HCM 2000 Control Delay	85.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	98.3%	ICU Level of Service	F
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	1000	0	161	0	912	637	0	794	346
Future Volume (veh/h)	0	0	0	1000	0	161	0	912	637	0	794	346
Number				3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h				1099	0	177	0	970	0	0	845	0
Adj No. of Lanes				2	0	1	0	3	2	0	2	1
Peak Hour Factor				0.91	0.91	0.91	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				1153	0	530	0	2918	1599	0	2031	909
Arrive On Green				0.33	0.00	0.33	0.00	0.57	0.00	0.00	0.57	0.00
Sat Flow, veh/h				3442	0	1583	0	5253	2787	0	3632	1583
Grp Volume(v), veh/h				1099	0	177	0	970	0	0	845	0
Grp Sat Flow(s),veh/h/ln				1721	0	1583	0	1695	1393	0	1770	1583
Q Serve(g_s), s				39.0	0.0	10.5	0.0	12.6	0.0	0.0	16.7	0.0
Cycle Q Clear(g_c), s				39.0	0.0	10.5	0.0	12.6	0.0	0.0	16.7	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				1153	0	530	0	2918	1599	0	2031	909
V/C Ratio(X)				0.95	0.00	0.33	0.00	0.33	0.00	0.00	0.42	0.00
Avail Cap(c_a), veh/h				1327	0	611	0	2918	1599	0	2031	909
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				40.6	0.0	31.1	0.0	14.0	0.0	0.0	14.9	0.0
Incr Delay (d2), s/veh				13.3	0.0	0.1	0.0	0.3	0.0	0.0	0.6	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				20.6	0.0	4.6	0.0	5.9	0.0	0.0	8.3	0.0
LnGrp Delay(d),s/veh				54.0	0.0	31.3	0.0	14.3	0.0	0.0	15.5	0.0
LnGrp LOS				D		C		B			B	
Approach Vol, veh/h					1276			970			845	
Approach Delay, s/veh					50.8			14.3			15.5	
Approach LOS					D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		76.3				76.3		48.7
Change Period (Y+Rc), s		4.6				4.6		6.8
Max Green Setting (Gmax), s		65.4				65.4		48.2
Max Q Clear Time (g_c+I1), s		18.7				14.6		41.0
Green Ext Time (p_c), s		4.9				4.9		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	29.7
HCM 2010 LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (veh/h)	45	110	168	78	1	147	301	139	42	309	1200	105
Future Volume (veh/h)	45	110	168	78	1	147	301	139	42	309	1200	105
Number		3	8	18		7	4	14		1	6	16
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.98		1.00		0.99		1.00		0.99
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1676	1676	1676		1676	1676	1676		1676	1676	1676
Adj Flow Rate, veh/h		118	181	84		156	320	148		336	1304	114
Adj No. of Lanes		2	2	1		2	3	1		2	3	1
Peak Hour Factor		0.93	0.93	0.93		0.94	0.94	0.94		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2
Cap, veh/h		163	518	227		203	802	248		381	2295	705
Arrive On Green		0.05	0.16	0.16		0.07	0.18	0.18		0.12	0.50	0.50
Sat Flow, veh/h		3097	3185	1397		3097	4577	1418		3097	4577	1406
Grp Volume(v), veh/h		118	181	84		156	320	148		336	1304	114
Grp Sat Flow(s),veh/h/ln		1549	1593	1397		1549	1526	1418		1549	1526	1406
Q Serve(g_s), s		4.8	6.5	6.9		6.4	8.0	12.4		13.7	25.6	5.7
Cycle Q Clear(g_c), s		4.8	6.5	6.9		6.4	8.0	12.4		13.7	25.6	5.7
Prop In Lane		1.00		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h		163	518	227		203	802	248		381	2295	705
V/C Ratio(X)		0.72	0.35	0.37		0.77	0.40	0.60		0.88	0.57	0.16
Avail Cap(c_a), veh/h		469	1584	695		469	1209	375		469	2295	705
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		60.0	47.8	48.0		59.2	47.1	48.9		55.5	22.4	17.4
Incr Delay (d2), s/veh		2.3	0.8	2.0		2.3	1.1	7.6		13.4	0.5	0.2
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		2.1	2.9	2.8		2.8	3.5	5.4		6.6	10.9	2.2
LnGrp Delay(d),s/veh		62.3	48.7	50.1		61.5	48.2	56.5		68.9	22.9	17.6
LnGrp LOS		E	D	D		E	D	E		E	C	B
Approach Vol, veh/h			383				624				1754	
Approach Delay, s/veh			53.2				53.5				31.4	
Approach LOS			D				D				C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.3	66.5	12.3	28.5	17.5	70.3	13.9	26.9
Change Period (Y+Rc), s	5.5	* 5.8	5.5	6.0	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	19.5	* 64	19.5	34.0	19.5	* 64	19.5	64.0
Max Q Clear Time (g_c+I1), s	15.7	24.9	6.8	14.4	11.9	27.6	8.4	8.9
Green Ext Time (p_c), s	0.1	35.8	0.1	7.8	0.1	33.9	0.1	11.0

Intersection Summary	
HCM 2010 Ctrl Delay	35.7
HCM 2010 LOS	D

Notes

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Volume (veh/h)	21	224	925	326
Future Volume (veh/h)	21	224	925	326
Number		5	2	12
Initial Q (Qb), veh		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.99
Parking Bus, Adj		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1676	1676	1676
Adj Flow Rate, veh/h		243	1005	354
Adj No. of Lanes		2	3	1
Peak Hour Factor		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2
Cap, veh/h		290	2160	662
Arrive On Green		0.09	0.47	0.47
Sat Flow, veh/h		3097	4577	1404
Grp Volume(v), veh/h		243	1005	354
Grp Sat Flow(s),veh/h/ln		1549	1526	1404
Q Serve(g_s), s		9.9	19.1	22.9
Cycle Q Clear(g_c), s		9.9	19.1	22.9
Prop In Lane		1.00		1.00
Lane Grp Cap(c), veh/h		290	2160	662
V/C Ratio(X)		0.84	0.47	0.53
Avail Cap(c_a), veh/h		469	2284	700
HCM Platoon Ratio		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00
Uniform Delay (d), s/veh		57.4	23.0	24.0
Incr Delay (d2), s/veh		3.5	0.3	1.4
Initial Q Delay(d3),s/veh		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		4.4	8.1	9.1
LnGrp Delay(d),s/veh		60.8	23.3	25.4
LnGrp LOS		E	C	C
Approach Vol, veh/h			1602	
Approach Delay, s/veh			29.5	
Approach LOS			C	
Timer				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	194	143	69	329	284	166	1	71	1222	115	226	2110
Future Volume (veh/h)	194	143	69	329	284	166	1	71	1222	115	226	2110
Number	3	8	18	7	4	14		1	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97		1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	204	151	73	378	354	172		75	1286	121	246	2293
Adj No. of Lanes	2	2	1	2	2	1		2	4	1	2	3
Peak Hour Factor	0.95	0.95	0.95	0.87	0.87	0.87		0.95	0.95	0.95	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2
Cap, veh/h	256	558	243	430	761	312		121	2940	725	298	2595
Arrive On Green	0.07	0.16	0.16	0.12	0.20	0.20		0.04	0.46	0.46	0.09	0.51
Sat Flow, veh/h	3442	3539	1544	3548	3725	1529		3442	6408	1579	3442	5085
Grp Volume(v), veh/h	204	151	73	378	354	172		75	1286	121	246	2293
Grp Sat Flow(s),veh/h/ln	1721	1770	1544	1774	1863	1529		1721	1602	1579	1721	1695
Q Serve(g_s), s	7.6	4.9	5.4	13.6	10.8	13.1		2.8	17.6	5.8	9.1	52.2
Cycle Q Clear(g_c), s	7.6	4.9	5.4	13.6	10.8	13.1		2.8	17.6	5.8	9.1	52.2
Prop In Lane	1.00		1.00	1.00		1.00		1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	256	558	243	430	761	312		121	2940	725	298	2595
V/C Ratio(X)	0.80	0.27	0.30	0.88	0.46	0.55		0.62	0.44	0.17	0.83	0.88
Avail Cap(c_a), veh/h	517	930	406	533	976	401		517	3171	782	517	2595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.1	48.1	48.3	56.0	45.4	46.3		61.7	23.8	20.6	58.3	28.3
Incr Delay (d2), s/veh	2.1	0.4	1.0	11.6	0.8	2.6		3.2	0.1	0.1	2.2	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	2.4	2.4	7.4	5.7	5.7		1.4	7.8	2.5	4.4	25.4
LnGrp Delay(d),s/veh	61.2	48.5	49.3	67.6	46.1	48.8		64.9	23.8	20.6	60.5	32.6
LnGrp LOS	E	D	D	E	D	D		E	C	C	E	C
Approach Vol, veh/h		428			904				1482			2857
Approach Delay, s/veh		54.7			55.6				25.6			33.6
Approach LOS		D			E				C			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	72.0	15.2	32.5	16.7	65.3	21.2	26.4
Change Period (Y+Rc), s	5.5	* 5.8	5.5	6.0	5.5	* 5.8	5.5	* 6
Max Green Setting (Gmax), s	19.5	* 64	19.5	34.0	19.5	* 64	19.5	* 34
Max Q Clear Time (g_c+I1), s	4.8	54.2	9.6	15.1	11.1	19.6	15.6	7.4
Green Ext Time (p_c), s	0.1	10.2	0.1	6.3	0.1	39.9	0.1	7.3

Intersection Summary	
HCM 2010 Ctrl Delay	36.6
HCM 2010 LOS	D

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	293
Future Volume (veh/h)	293
Number	12
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.99
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	318
Adj No. of Lanes	1
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	801
Arrive On Green	0.51
Sat Flow, veh/h	1569
Grp Volume(v), veh/h	318
Grp Sat Flow(s),veh/h/ln	1569
Q Serve(g_s), s	16.1
Cycle Q Clear(g_c), s	16.1
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	801
V/C Ratio(X)	0.40
Avail Cap(c_a), veh/h	801
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	19.5
Incr Delay (d2), s/veh	0.7
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	7.1
LnGrp Delay(d),s/veh	20.2
LnGrp LOS	C
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1222	0	531	0	0	0	0	1241	464	0	2053	441
Future Volume (veh/h)	1222	0	531	0	0	0	0	1241	464	0	2053	441
Number	7	4	14				1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	1300	0	565				0	1293	0	0	2161	0
Adj No. of Lanes	3	0	2				0	4	1	0	3	1
Peak Hour Factor	0.94	0.94	0.94				0.96	0.96	0.96	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	2				0	2	2	0	2	2
Cap, veh/h	1404	0	782				0	4588	975	0	3441	975
Arrive On Green	0.28	0.00	0.28				0.00	0.62	0.00	0.00	0.62	0.00
Sat Flow, veh/h	5003	0	2787				0	7451	1583	0	5588	1583
Grp Volume(v), veh/h	1300	0	565				0	1293	0	0	2161	0
Grp Sat Flow(s),veh/h/ln	1668	0	1393				0	1863	1583	0	1863	1583
Q Serve(g_s), s	27.8	0.0	20.1				0.0	8.9	0.0	0.0	26.7	0.0
Cycle Q Clear(g_c), s	27.8	0.0	20.1				0.0	8.9	0.0	0.0	26.7	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	1404	0	782				0	4588	975	0	3441	975
V/C Ratio(X)	0.93	0.00	0.72				0.00	0.28	0.00	0.00	0.63	0.00
Avail Cap(c_a), veh/h	1514	0	844				0	4588	975	0	3441	975
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	38.5	0.0	35.7				0.0	9.8	0.0	0.0	13.2	0.0
Incr Delay (d2), s/veh	9.3	0.0	2.3				0.0	0.2	0.0	0.0	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.0	0.0	8.0				0.0	4.5	0.0	0.0	13.9	0.0
LnGrp Delay(d),s/veh	47.7	0.0	38.0				0.0	10.0	0.0	0.0	14.1	0.0
LnGrp LOS	D		D					A			B	
Approach Vol, veh/h		1865						1293			2161	
Approach Delay, s/veh		44.8						10.0			14.1	
Approach LOS		D						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		72.4		37.6		72.4		
Change Period (Y+Rc), s		* 4.7		6.7		4.7		
Max Green Setting (Gmax), s		* 66		33.3		65.3		
Max Q Clear Time (g_c+I1), s		28.7		29.8		10.9		
Green Ext Time (p_c), s		14.8		1.1		16.3		

Intersection Summary	
HCM 2010 Ctrl Delay	23.9
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	407	0	427	0	2173	262	0	2097	1520
Future Volume (veh/h)	0	0	0	407	0	427	0	2173	262	0	2097	1520
Number				3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h				447	0	469	0	2264	0	0	2140	0
Adj No. of Lanes				2	0	2	0	3	1	0	3	2
Peak Hour Factor				0.91	0.91	0.91	0.96	0.96	0.96	0.98	0.98	0.98
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				651	0	527	0	3922	1111	0	3569	1956
Arrive On Green				0.19	0.00	0.19	0.00	0.70	0.00	0.00	0.70	0.00
Sat Flow, veh/h				3442	0	2787	0	5588	1583	0	5253	2787
Grp Volume(v), veh/h				447	0	469	0	2264	0	0	2140	0
Grp Sat Flow(s),veh/h/ln				1721	0	1393	0	1863	1583	0	1695	1393
Q Serve(g_s), s				13.3	0.0	18.1	0.0	22.3	0.0	0.0	23.8	0.0
Cycle Q Clear(g_c), s				13.3	0.0	18.1	0.0	22.3	0.0	0.0	23.8	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				651	0	527	0	3922	1111	0	3569	1956
V/C Ratio(X)				0.69	0.00	0.89	0.00	0.58	0.00	0.00	0.60	0.00
Avail Cap(c_a), veh/h				1032	0	836	0	3922	1111	0	3569	1956
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				41.6	0.0	43.5	0.0	8.2	0.0	0.0	8.4	0.0
Incr Delay (d2), s/veh				0.5	0.0	4.8	0.0	0.6	0.0	0.0	0.8	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.4	0.0	7.3	0.0	11.5	0.0	0.0	11.1	0.0
LnGrp Delay(d),s/veh				42.0	0.0	48.3	0.0	8.8	0.0	0.0	9.2	0.0
LnGrp LOS				D		D		A			A	
Approach Vol, veh/h					916			2264			2140	
Approach Delay, s/veh					45.3			8.8			9.2	
Approach LOS					D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		82.2				82.2		27.8
Change Period (Y+Rc), s		* 5				5.0		7.0
Max Green Setting (Gmax), s		* 65				65.0		33.0
Max Q Clear Time (g_c+I1), s		25.8				24.3		20.1
Green Ext Time (p_c), s		23.3				23.7		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	15.3
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	112	13	243	34	25	39	34	267	2338	20	36	3279
Future Volume (veh/h)	112	13	243	34	25	39	34	267	2338	20	36	3279
Number	7	4	14	3	8	18		1	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00		1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1900		1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	129	116	212	43	32	49		275	2410	21	39	3526
Adj No. of Lanes	0	1	1	1	1	0		2	3	0	1	3
Peak Hour Factor	0.87	0.87	0.87	0.79	0.79	0.79		0.97	0.97	0.97	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2
Cap, veh/h	152	136	249	119	44	68		328	3033	26	50	2613
Arrive On Green	0.16	0.16	0.16	0.07	0.07	0.07		0.10	0.58	0.58	0.03	0.51
Sat Flow, veh/h	956	859	1571	1774	663	1015		3442	5200	45	1774	5085
Grp Volume(v), veh/h	245	0	212	43	0	81		275	1570	861	39	3526
Grp Sat Flow(s),veh/h/ln	1815	0	1571	1774	0	1678		1721	1695	1855	1774	1695
Q Serve(g_s), s	16.7	0.0	16.7	2.9	0.0	6.0		10.0	45.6	45.8	2.8	65.2
Cycle Q Clear(g_c), s	16.7	0.0	16.7	2.9	0.0	6.0		10.0	45.6	45.8	2.8	65.2
Prop In Lane	0.53		1.00	1.00		0.60		1.00		0.02	1.00	
Lane Grp Cap(c), veh/h	288	0	249	119	0	112		328	1977	1082	50	2613
V/C Ratio(X)	0.85	0.00	0.85	0.36	0.00	0.72		0.84	0.79	0.80	0.78	1.35
Avail Cap(c_a), veh/h	493	0	427	482	0	456		540	1977	1082	282	2613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.9	0.0	51.9	56.6	0.0	58.0		56.4	20.5	20.6	61.3	30.9
Incr Delay (d2), s/veh	2.8	0.0	3.2	0.7	0.0	3.2		2.7	2.1	3.9	9.4	159.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	0.0	7.4	1.5	0.0	2.9		4.9	21.7	24.4	1.5	69.2
LnGrp Delay(d),s/veh	54.7	0.0	55.1	57.3	0.0	61.3		59.1	22.7	24.4	70.7	190.8
LnGrp LOS	D		E	E		E		E	C	C	E	F
Approach Vol, veh/h		457			124				2706			3650
Approach Delay, s/veh		54.9			59.9				26.9			185.4
Approach LOS		D			E				C			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.2	70.1		25.6	8.4	78.9		14.0
Change Period (Y+Rc), s	* 5.1	* 4.9		5.5	* 4.8	* 4.9		5.5
Max Green Setting (Gmax), s	* 20	* 65		34.5	* 20	* 65		34.5
Max Q Clear Time (g_c+I1), s	12.0	67.2		18.7	4.8	47.8		8.0
Green Ext Time (p_c), s	0.1	0.0		0.6	0.0	16.2		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	112.8
HCM 2010 LOS	F

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	79
Future Volume (veh/h)	79
Number	12
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.97
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	85
Adj No. of Lanes	1
Peak Hour Factor	0.93
Percent Heavy Veh, %	2
Cap, veh/h	793
Arrive On Green	0.51
Sat Flow, veh/h	1543
Grp Volume(v), veh/h	85
Grp Sat Flow(s),veh/h/ln	1543
Q Serve(g_s), s	3.6
Cycle Q Clear(g_c), s	3.6
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	793
V/C Ratio(X)	0.11
Avail Cap(c_a), veh/h	793
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	15.9
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	1.5
LnGrp Delay(d),s/veh	15.9
LnGrp LOS	B
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	36	3	10	764	1	408	338
Future Volume (veh/h)	36	3	10	764	1	408	338
Number	7	14	1	6		2	12
Initial Q (Qb), veh	0	0	0	0		0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00				1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00		1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863		1863	1863
Adj Flow Rate, veh/h	44	4	11	878		439	363
Adj No. of Lanes	2	1	1	2		2	1
Peak Hour Factor	0.81	0.81	0.87	0.87		0.93	0.93
Percent Heavy Veh, %	2	2	2	2		2	2
Cap, veh/h	114	66	16	1925		1230	603
Arrive On Green	0.03	0.03	0.01	0.54		0.35	0.35
Sat Flow, veh/h	3442	1583	1774	3632		3632	1583
Grp Volume(v), veh/h	44	4	11	878		439	363
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1770		1770	1583
Q Serve(g_s), s	0.4	0.1	0.2	4.4		2.7	5.4
Cycle Q Clear(g_c), s	0.4	0.1	0.2	4.4		2.7	5.4
Prop In Lane	1.00	1.00	1.00				1.00
Lane Grp Cap(c), veh/h	114	66	16	1925		1230	603
V/C Ratio(X)	0.39	0.06	0.71	0.46		0.36	0.60
Avail Cap(c_a), veh/h	6397	2957	1180	6446		6410	2920
HCM Platoon Ratio	1.00	1.00	1.00	1.00		1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00		1.00	1.00
Uniform Delay (d), s/veh	13.9	13.5	14.5	4.1		7.1	7.3
Incr Delay (d2), s/veh	0.8	0.1	19.5	0.1		0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.1	0.2	2.1		1.3	2.5
LnGrp Delay(d),s/veh	14.7	13.6	34.0	4.1		7.2	7.7
LnGrp LOS	B	B	C	A		A	A
Approach Vol, veh/h	48			889		802	
Approach Delay, s/veh	14.6			4.5		7.4	
Approach LOS	B			A		A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	5.8	17.1		6.5		22.8		
Change Period (Y+Rc), s	5.5	* 6.9		5.5		* 6.9		
Max Green Setting (Gmax), s	19.5	* 53		54.5		* 53		
Max Q Clear Time (g_c+I1), s	2.2	7.4		2.4		6.4		
Green Ext Time (p_c), s	0.0	2.8		0.0		2.8		

Intersection Summary	
HCM 2010 Ctrl Delay	6.1
HCM 2010 LOS	A

Notes

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (veh/h)	1	566	224	0	343	165	43	441
Future Volume (veh/h)	1	566	224	0	343	165	43	441
Number		1	6		2	12	3	18
Initial Q (Qb), veh		0	0		0	0	0	0
Ped-Bike Adj(A_pbT)		1.00				1.00	1.00	1.00
Parking Bus, Adj		1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863		1863	1863	1863	1863
Adj Flow Rate, veh/h		666	264		399	192	48	490
Adj No. of Lanes		1	2		2	1	1	1
Peak Hour Factor		0.85	0.85		0.86	0.86	0.90	0.90
Percent Heavy Veh, %		2	2		2	2	2	2
Cap, veh/h		584	1908		540	242	579	516
Arrive On Green		0.33	0.54		0.15	0.15	0.33	0.33
Sat Flow, veh/h		1774	3632		3632	1583	1774	1583
Grp Volume(v), veh/h		666	264		399	192	48	490
Grp Sat Flow(s),veh/h/ln		1774	1770		1770	1583	1774	1583
Q Serve(g_s), s		29.8	3.4		9.8	10.6	1.7	27.4
Cycle Q Clear(g_c), s		29.8	3.4		9.8	10.6	1.7	27.4
Prop In Lane		1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h		584	1908		540	242	579	516
V/C Ratio(X)		1.14	0.14		0.74	0.79	0.08	0.95
Avail Cap(c_a), veh/h		584	2478		2474	1107	676	603
HCM Platoon Ratio		1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		30.4	10.4		36.6	37.0	21.1	29.8
Incr Delay (d2), s/veh		82.6	0.0		0.7	2.2	0.0	21.8
Initial Q Delay(d3),s/veh		0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		27.8	1.7		4.8	4.8	0.8	15.0
LnGrp Delay(d),s/veh		113.0	10.4		37.4	39.2	21.2	51.5
LnGrp LOS		F	B		D	D	C	D
Approach Vol, veh/h			930		591		538	
Approach Delay, s/veh			83.9		38.0		48.8	
Approach LOS			F		D		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	35.0	20.5				55.5		35.0
Change Period (Y+Rc), s	* 5.2	* 6.7				* 6.7		5.5
Max Green Setting (Gmax), s	* 30	* 63				* 63		34.5
Max Q Clear Time (g_c+I1), s	31.8	12.6				5.4		29.4
Green Ext Time (p_c), s	0.0	1.2				1.2		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	61.5
HCM 2010 LOS	E

Notes

Jaeger Ranch
1: Bradshaw Rd & Jackson Rd/SR-16

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	168	421	198	38	275	86	11	106	750	24	4	198
Future Volume (veh/h)	168	421	198	38	275	86	11	106	750	24	4	198
Number	3	8	18	7	4	14		1	6	16		5
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0		0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00		1.00		1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		1863	1863	1900		1863
Adj Flow Rate, veh/h	179	448	211	41	299	93		115	815	26		208
Adj No. of Lanes	1	1	1	1	1	1		1	2	0		1
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92		0.92	0.92	0.92		0.95
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2		2
Cap, veh/h	203	488	415	53	330	280		138	1378	44		232
Arrive On Green	0.11	0.26	0.26	0.03	0.18	0.18		0.08	0.39	0.39		0.13
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583		1774	3501	112		1774
Grp Volume(v), veh/h	179	448	211	41	299	93		115	412	429		208
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583		1774	1770	1843		1774
Q Serve(g_s), s	13.9	32.8	15.9	3.2	22.1	7.2		9.0	25.8	25.8		16.2
Cycle Q Clear(g_c), s	13.9	32.8	15.9	3.2	22.1	7.2		9.0	25.8	25.8		16.2
Prop In Lane	1.00		1.00	1.00		1.00		1.00		0.06		1.00
Lane Grp Cap(c), veh/h	203	488	415	53	330	280		138	697	726		232
V/C Ratio(X)	0.88	0.92	0.51	0.78	0.91	0.33		0.83	0.59	0.59		0.90
Avail Cap(c_a), veh/h	310	488	415	247	433	368		247	790	823		310
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	61.1	50.3	44.1	67.5	56.5	50.4		63.7	33.6	33.6		60.0
Incr Delay (d2), s/veh	12.0	22.1	0.4	8.7	16.4	0.3		4.9	0.4	0.4		19.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
%ile BackOfQ(50%),veh/ln	7.5	19.8	7.0	1.7	12.9	3.2		4.6	12.7	13.2		9.1
LnGrp Delay(d),s/veh	73.1	72.4	44.5	76.2	72.9	50.7		68.6	34.0	34.0		79.0
LnGrp LOS	E	E	D	E	E	D		E	C	C		E
Approach Vol, veh/h		838			433				956			
Approach Delay, s/veh		65.5			68.4				38.2			
Approach LOS		E			E				D			

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.4	70.0	21.6	32.2	23.8	62.6	9.7	44.1
Change Period (Y+Rc), s	5.5	7.4	5.5	7.4	5.5	7.4	5.5	* 7.4
Max Green Setting (Gmax), s	19.5	62.6	24.5	32.6	24.5	62.6	19.5	* 33
Max Q Clear Time (g_c+I1), s	11.0	64.6	15.9	24.1	18.2	27.8	5.2	34.8
Green Ext Time (p_c), s	0.1	0.0	0.1	0.8	0.1	17.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	79.1
HCM 2010 LOS	E

Notes

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	1711	153
Future Volume (veh/h)	1711	153
Number	2	12
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	1801	0
Adj No. of Lanes	2	1
Peak Hour Factor	0.95	0.95
Percent Heavy Veh, %	2	2
Cap, veh/h	1580	707
Arrive On Green	0.45	0.00
Sat Flow, veh/h	3539	1583
Grp Volume(v), veh/h	1801	0
Grp Sat Flow(s),veh/h/ln	1770	1583
Q Serve(g_s), s	62.6	0.0
Cycle Q Clear(g_c), s	62.6	0.0
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1580	707
V/C Ratio(X)	1.14	0.00
Avail Cap(c_a), veh/h	1580	707
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	38.8	0.0
Incr Delay (d2), s/veh	71.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	46.1	0.0
LnGrp Delay(d),s/veh	109.8	0.0
LnGrp LOS	F	
Approach Vol, veh/h	2009	
Approach Delay, s/veh	106.6	
Approach LOS	F	
Timer		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	450	78	126	295	5	29	87	90	11	537	67
Future Volume (veh/h)	71	450	78	126	295	5	29	87	90	11	537	67
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	72	455	79	143	335	6	34	101	105	12	610	76
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.99	0.99	0.99	0.88	0.88	0.88	0.86	0.86	0.86	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	853	147	181	1183	21	41	259	269	68	526	66
Arrive On Green	0.05	0.28	0.28	0.10	0.33	0.33	0.02	0.31	0.31	0.04	0.32	0.32
Sat Flow, veh/h	1774	3019	521	1774	3557	64	1774	838	871	1774	1625	202
Grp Volume(v), veh/h	72	266	268	143	166	175	34	0	206	12	0	686
Grp Sat Flow(s),veh/h/ln	1774	1770	1771	1774	1770	1852	1774	0	1709	1774	0	1827
Q Serve(g_s), s	2.5	8.0	8.1	5.0	4.4	4.4	1.2	0.0	6.0	0.4	0.0	20.5
Cycle Q Clear(g_c), s	2.5	8.0	8.1	5.0	4.4	4.4	1.2	0.0	6.0	0.4	0.0	20.5
Prop In Lane	1.00		0.29	1.00		0.03	1.00		0.51	1.00		0.11
Lane Grp Cap(c), veh/h	92	500	500	181	589	616	41	0	528	68	0	592
V/C Ratio(X)	0.79	0.53	0.54	0.79	0.28	0.28	0.84	0.00	0.39	0.18	0.00	1.16
Avail Cap(c_a), veh/h	308	1553	1554	308	1553	1624	308	0	554	308	0	592
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.6	19.2	19.2	27.7	15.5	15.6	30.8	0.0	17.2	29.5	0.0	21.4
Incr Delay (d2), s/veh	5.4	1.2	1.3	2.9	0.4	0.4	15.3	0.0	2.2	0.5	0.0	89.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	4.1	4.1	2.6	2.2	2.3	0.8	0.0	3.1	0.2	0.0	24.9
LnGrp Delay(d),s/veh	35.1	20.4	20.5	30.7	15.9	15.9	46.1	0.0	19.4	29.9	0.0	110.6
LnGrp LOS	D	C	C	C	B	B	D		B	C		F
Approach Vol, veh/h		606			484			240			698	
Approach Delay, s/veh		22.2			20.3			23.1			109.2	
Approach LOS		C			C			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	25.5	5.4	25.0	10.4	22.4	6.4	24.0
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.5
Max Green Setting (Gmax), s	11.0	55.5	11.0	20.5	11.0	55.5	11.0	20.5
Max Q Clear Time (g_c+I1), s	4.5	6.4	3.2	22.5	7.0	10.1	2.4	8.0
Green Ext Time (p_c), s	0.0	7.8	0.0	0.0	0.0	7.8	0.0	9.9

Intersection Summary	
HCM 2010 Ctrl Delay	51.8
HCM 2010 LOS	D

Notes

Jaeger Ranch
3: Eagles Nest Rd & Jackson Rd/SR-16

Intersection	
Int Delay, s/veh	20.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	539	0	15	307	2	4	6	1	0	158	115
Future Vol, veh/h	19	539	0	15	307	2	4	6	1	0	158	115
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	350	-	-	350	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	79	79	79	70	70	70	73	73	73
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	580	0	19	389	3	6	9	1	0	216	158

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	391	0	0	580	0	0	1156	1049	580	1053	1048	390
Stage 1	-	-	-	-	-	-	620	620	-	428	428	-
Stage 2	-	-	-	-	-	-	536	429	-	625	620	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1168	-	-	994	-	-	174	227	514	204	228	658
Stage 1	-	-	-	-	-	-	476	480	-	605	585	-
Stage 2	-	-	-	-	-	-	529	584	-	473	480	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1168	-	-	994	-	-	11	219	514	192	220	658
Mov Cap-2 Maneuver	-	-	-	-	-	-	11	219	-	192	220	-
Stage 1	-	-	-	-	-	-	468	472	-	595	574	-
Stage 2	-	-	-	-	-	-	246	573	-	455	472	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.4	231.2	64.7
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	26	514	1168	-	-	994	-	-	220	658
HCM Lane V/C Ratio	0.549	0.003	0.017	-	-	0.019	-	-	0.984	0.239
HCM Control Delay (s)	253.1	12	8.1	-	-	8.7	-	-	102.9	12.2
HCM Lane LOS	F	B	A	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	1.7	0	0.1	-	-	0.1	-	-	8.8	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	453	12	28	250	131	7	285	23	223	815	85
Future Volume (veh/h)	113	453	12	28	250	131	7	285	23	223	815	85
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	120	482	13	30	269	141	7	294	24	228	832	87
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.97	0.97	0.97	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	147	518	441	37	404	343	47	609	50	256	886	884
Arrive On Green	0.08	0.28	0.28	0.02	0.22	0.22	0.03	0.36	0.36	0.14	0.48	0.48
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	1700	139	1774	1863	1583
Grp Volume(v), veh/h	120	482	13	30	269	141	7	0	318	228	832	87
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	0	1838	1774	1863	1583
Q Serve(g_s), s	7.5	28.2	0.7	1.9	14.8	8.6	0.4	0.0	15.1	14.1	47.4	2.9
Cycle Q Clear(g_c), s	7.5	28.2	0.7	1.9	14.8	8.6	0.4	0.0	15.1	14.1	47.4	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	147	518	441	37	404	343	47	0	658	256	886	884
V/C Ratio(X)	0.82	0.93	0.03	0.80	0.67	0.41	0.15	0.00	0.48	0.89	0.94	0.10
Avail Cap(c_a), veh/h	324	552	469	324	552	469	324	0	1043	388	1064	1035
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.6	39.4	29.4	54.6	40.2	37.7	53.3	0.0	27.9	47.1	27.8	11.6
Incr Delay (d2), s/veh	4.2	21.2	0.0	13.6	0.7	0.3	0.5	0.0	0.2	11.2	12.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	17.5	0.3	1.1	7.7	3.8	0.2	0.0	7.6	7.7	27.4	1.2
LnGrp Delay(d),s/veh	54.8	60.5	29.4	68.2	40.9	38.0	53.8	0.0	28.1	58.2	40.6	11.6
LnGrp LOS	D	E	C	E	D	D	D		C	E	D	B
Approach Vol, veh/h		615			440			325			1147	
Approach Delay, s/veh		58.8			41.8			28.7			41.9	
Approach LOS		E			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	31.1	7.5	59.7	6.9	38.0	20.7	46.5
Change Period (Y+Rc), s	4.5	6.8	4.5	* 6.4	4.5	6.8	4.5	6.4
Max Green Setting (Gmax), s	20.5	33.2	20.5	* 64	20.5	33.2	24.5	63.6
Max Q Clear Time (g_c+I1), s	9.5	16.8	2.4	49.4	3.9	30.2	16.1	17.1
Green Ext Time (p_c), s	0.0	2.4	0.0	3.9	0.0	1.0	0.1	4.7

Intersection Summary	
HCM 2010 Ctrl Delay	44.3
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	32	657	3	1	53	338	41	3	324	67	61	378
Future Volume (veh/h)	32	657	3	1	53	338	41	3	324	67	61	378
Number	1	6	16		5	2	12	3	8	18	7	4
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		0.98	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900		1863	1863	1900	1900	1863	1900	1900	1863
Adj Flow Rate, veh/h	36	738	3		62	393	48	3	352	73	69	430
Adj No. of Lanes	1	1	0		1	1	0	0	1	0	0	1
Peak Hour Factor	0.89	0.89	0.89		0.86	0.86	0.86	0.92	0.92	0.92	0.88	0.88
Percent Heavy Veh, %	2	2	2		2	2	2	2	2	2	2	2
Cap, veh/h	46	684	3		78	628	77	3	328	68	50	312
Arrive On Green	0.03	0.37	0.37		0.04	0.39	0.39	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1774	1854	8		1774	1624	198	13	1487	308	226	1409
Grp Volume(v), veh/h	36	0	741		62	0	441	428	0	0	555	0
Grp Sat Flow(s),veh/h/ln	1774	0	1861		1774	0	1823	1808	0	0	1819	0
Q Serve(g_s), s	3.5	0.0	63.6		6.0	0.0	33.8	38.0	0.0	0.0	38.2	0.0
Cycle Q Clear(g_c), s	3.5	0.0	63.6		6.0	0.0	33.8	38.0	0.0	0.0	38.2	0.0
Prop In Lane	1.00		0.00		1.00		0.11	0.01		0.17	0.12	
Lane Grp Cap(c), veh/h	46	0	686		78	0	705	398	0	0	403	0
V/C Ratio(X)	0.78	0.00	1.08		0.80	0.00	0.63	1.07	0.00	0.00	1.38	0.00
Avail Cap(c_a), veh/h	262	0	686		211	0	705	398	0	0	403	0
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00		1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	83.5	0.0	54.4		81.7	0.0	42.8	67.2	0.0	0.0	67.1	0.0
Incr Delay (d2), s/veh	9.8	0.0	57.8		6.7	0.0	1.3	66.5	0.0	0.0	184.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	43.6		3.1	0.0	17.3	26.3	0.0	0.0	39.8	0.0
LnGrp Delay(d),s/veh	93.3	0.0	112.3		88.4	0.0	44.1	133.7	0.0	0.0	252.0	0.0
LnGrp LOS	F		F		F		D	F			F	
Approach Vol, veh/h		777				503			428			555
Approach Delay, s/veh		111.4				49.6			133.7			252.0
Approach LOS		F				D			F			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	73.5		45.0	12.1	70.4		45.0
Change Period (Y+Rc), s	4.5	6.8		6.8	4.5	* 6.8		7.0
Max Green Setting (Gmax), s	25.5	63.2		38.2	20.5	* 64		38.0
Max Q Clear Time (g_c+I1), s	5.5	35.8		40.2	8.0	65.6		40.0
Green Ext Time (p_c), s	0.0	4.4		0.0	0.0	0.0		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		136.4
HCM 2010 LOS		F

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	49
Future Volume (veh/h)	49
Number	14
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1900
Adj Flow Rate, veh/h	56
Adj No. of Lanes	0
Peak Hour Factor	0.88
Percent Heavy Veh, %	2
Cap, veh/h	41
Arrive On Green	0.22
Sat Flow, veh/h	184
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.10
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	0.0
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	79	29	5	254	754	141
Future Volume (veh/h)	79	29	5	254	754	141
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	86	32	6	295	769	144
Adj No. of Lanes	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.86	0.86	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	127	113	9	1253	836	157
Arrive On Green	0.07	0.07	0.00	0.67	0.55	0.55
Sat Flow, veh/h	1774	1583	1774	1863	1521	285
Grp Volume(v), veh/h	86	32	6	295	0	913
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	0	1805
Q Serve(g_s), s	2.2	0.9	0.2	2.9	0.0	21.4
Cycle Q Clear(g_c), s	2.2	0.9	0.2	2.9	0.0	21.4
Prop In Lane	1.00	1.00	1.00			0.16
Lane Grp Cap(c), veh/h	127	113	9	1253	0	993
V/C Ratio(X)	0.68	0.28	0.70	0.24	0.00	0.92
Avail Cap(c_a), veh/h	1319	1177	800	2561	0	2463
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.1	20.5	23.1	3.0	0.0	9.5
Incr Delay (d2), s/veh	2.4	0.5	32.2	0.0	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.4	0.2	1.4	0.0	10.8
LnGrp Delay(d),s/veh	23.4	21.0	55.3	3.0	0.0	11.1
LnGrp LOS	C	C	E	A		B
Approach Vol, veh/h	118			301	913	
Approach Delay, s/veh	22.8			4.0	11.1	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	5.7	32.1				37.8		8.7
Change Period (Y+Rc), s	5.5	* 6.5				* 6.5		5.4
Max Green Setting (Gmax), s	21.0	* 64				* 64		34.6
Max Q Clear Time (g_c+I1), s	2.2	23.4				4.9		4.2
Green Ext Time (p_c), s	0.0	2.2				2.2		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	10.6
HCM 2010 LOS	B

Notes

Intersection	
Intersection Delay, s/veh	27.2
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	2	0	14	0	31	0	384	4	176	452	2
Future Vol, veh/h	3	2	0	14	0	31	0	384	4	176	452	2
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.96	0.96	0.96	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	3	0	20	0	44	0	400	4	198	508	2
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.9	9.9	13.9	36.6
HCM LOS	A	A	B	E

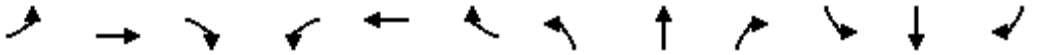
Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	60%	31%	28%
Vol Thru, %	99%	40%	0%	72%
Vol Right, %	1%	0%	69%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	388	5	45	630
LT Vol	0	3	14	176
Through Vol	384	2	0	452
RT Vol	4	0	31	2
Lane Flow Rate	404	7	64	708
Geometry Grp	1	1	1	1
Degree of Util (X)	0.551	0.013	0.109	0.915
Departure Headway (Hd)	4.904	6.793	6.126	4.654
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	728	530	589	772
Service Time	2.978	4.797	4.126	2.716
HCM Lane V/C Ratio	0.555	0.013	0.109	0.917
HCM Control Delay	13.9	9.9	9.9	36.6
HCM Lane LOS	B	A	A	E
HCM 95th-tile Q	3.4	0	0.4	12.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	245	352	7	1	443	9	7	9	1	11	31	748
Future Volume (veh/h)	245	352	7	1	443	9	7	9	1	11	31	748
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	263	378	0	1	461	9	8	11	1	12	33	804
Adj No. of Lanes	1	1	1	1	1	0	0	1	0	0	1	1
Peak Hour Factor	0.93	0.93	0.93	0.96	0.96	0.96	0.85	0.85	0.85	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	292	820	697	2	502	10	22	30	3	160	439	766
Arrive On Green	0.16	0.44	0.00	0.00	0.28	0.28	0.03	0.03	0.03	0.33	0.33	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1820	36	724	996	91	490	1348	1550
Grp Volume(v), veh/h	263	378	0	1	0	470	20	0	0	45	0	804
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1856	1811	0	0	1838	0	1550
Q Serve(g_s), s	15.4	15.1	0.0	0.1	0.0	25.9	1.1	0.0	0.0	1.8	0.0	34.4
Cycle Q Clear(g_c), s	15.4	15.1	0.0	0.1	0.0	25.9	1.1	0.0	0.0	1.8	0.0	34.4
Prop In Lane	1.00		1.00	1.00		0.02	0.40		0.05	0.27		1.00
Lane Grp Cap(c), veh/h	292	820	697	2	0	512	54	0	0	599	0	766
V/C Ratio(X)	0.90	0.46	0.00	0.60	0.00	0.92	0.37	0.00	0.00	0.08	0.00	1.05
Avail Cap(c_a), veh/h	412	1132	962	328	0	1124	610	0	0	599	0	766
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.3	20.8	0.0	52.7	0.0	37.1	50.3	0.0	0.0	24.6	0.0	27.0
Incr Delay (d2), s/veh	14.1	0.2	0.0	85.8	0.0	2.9	1.5	0.0	0.0	0.0	0.0	46.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	7.8	0.0	0.1	0.0	13.7	0.6	0.0	0.0	0.9	0.0	32.0
LnGrp Delay(d),s/veh	57.4	20.9	0.0	138.5	0.0	40.0	51.8	0.0	0.0	24.6	0.0	73.5
LnGrp LOS	E	C		F		D	D			C		F
Approach Vol, veh/h		641			471			20			849	
Approach Delay, s/veh		35.9			40.2			51.8			70.9	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	22.9	35.2		40.0	5.6	52.5		7.6
Change Period (Y+Rc), s	5.5	6.0		* 5.6	5.5	* 6		4.4
Max Green Setting (Gmax), s	24.5	64.0		* 34	19.5	* 64		35.6
Max Q Clear Time (g_c+I1), s	17.4	27.9		36.4	2.1	17.1		3.1
Green Ext Time (p_c), s	0.1	1.2		0.0	0.0	1.2		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		52.1
HCM 2010 LOS		D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	263	18	58	178	200	5	54	29	517	156	362
Future Volume (veh/h)	67	263	18	58	178	200	5	54	29	517	156	362
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	73	286	20	76	234	263	6	68	37	574	173	402
Adj No. of Lanes	1	2	0	1	1	1	1	1	0	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.76	0.76	0.76	0.79	0.79	0.79	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	734	51	96	397	337	9	124	67	708	577	491
Arrive On Green	0.05	0.22	0.22	0.05	0.21	0.21	0.00	0.11	0.11	0.21	0.31	0.31
Sat Flow, veh/h	1774	3352	233	1774	1863	1583	1774	1136	618	3442	1863	1583
Grp Volume(v), veh/h	73	150	156	76	234	263	6	0	105	574	173	402
Grp Sat Flow(s),veh/h/ln	1774	1770	1815	1774	1863	1583	1774	0	1754	1721	1863	1583
Q Serve(g_s), s	2.0	3.6	3.7	2.1	5.6	7.8	0.2	0.0	2.8	7.9	3.5	11.7
Cycle Q Clear(g_c), s	2.0	3.6	3.7	2.1	5.6	7.8	0.2	0.0	2.8	7.9	3.5	11.7
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.35	1.00		1.00
Lane Grp Cap(c), veh/h	92	387	397	96	397	337	9	0	191	708	577	491
V/C Ratio(X)	0.80	0.39	0.39	0.79	0.59	0.78	0.70	0.00	0.55	0.81	0.30	0.82
Avail Cap(c_a), veh/h	693	2307	2367	707	2433	2068	693	0	2290	1344	2421	2058
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	16.6	16.7	23.3	17.7	18.5	24.8	0.0	21.1	18.9	13.1	15.9
Incr Delay (d2), s/veh	5.8	0.2	0.2	5.5	0.5	1.5	32.5	0.0	0.9	0.9	0.1	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.8	1.8	1.2	2.9	3.5	0.2	0.0	1.4	3.8	1.8	5.3
LnGrp Delay(d),s/veh	29.2	16.9	16.9	28.8	18.2	20.0	57.3	0.0	22.0	19.8	13.2	17.2
LnGrp LOS	C	B	B	C	B	C	E		C	B	B	B
Approach Vol, veh/h		379			573			111			1149	
Approach Delay, s/veh		19.3			20.4			23.9			17.9	
Approach LOS		B			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	15.5	5.7	20.6	7.8	15.8	15.8	10.5
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	19.5	* 65	19.5	* 65	* 20	* 65	19.5	* 65
Max Q Clear Time (g_c+I1), s	4.0	9.8	2.2	13.7	4.1	5.7	9.9	4.8
Green Ext Time (p_c), s	0.0	0.8	0.0	0.6	0.0	0.8	0.3	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	19.1
HCM 2010 LOS	B

Notes

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (veh/h)	5	58	305	417	114	107	104	3	155	543	96	3
Future Volume (veh/h)	5	58	305	417	114	107	104	3	155	543	96	3
Number		7	4	14	3	8	18		5	2	12	
Initial Q (Qb), veh		0	0	0	0	0	0		0	0	0	
Ped-Bike Adj(A_pbT)		1.00		1.00	1.00		0.99		1.00		0.99	
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln		1863	1863	1863	1863	1863	1863		1863	1863	1863	
Adj Flow Rate, veh/h		60	318	434	139	130	127		170	597	105	
Adj No. of Lanes		2	3	1	2	2	1		2	3	1	
Peak Hour Factor		0.96	0.96	0.96	0.82	0.82	0.82		0.91	0.91	0.91	
Percent Heavy Veh, %		2	2	2	2	2	2		2	2	2	
Cap, veh/h		101	1418	442	194	1082	478		226	1830	563	
Arrive On Green		0.03	0.28	0.28	0.06	0.31	0.31		0.07	0.36	0.36	
Sat Flow, veh/h		3442	5085	1583	3442	3539	1563		3442	5085	1563	
Grp Volume(v), veh/h		60	318	434	139	130	127		170	597	105	
Grp Sat Flow(s),veh/h/ln		1721	1695	1583	1721	1770	1563		1721	1695	1563	
Q Serve(g_s), s		2.1	5.7	32.5	4.7	3.2	7.3		5.8	10.2	5.5	
Cycle Q Clear(g_c), s		2.1	5.7	32.5	4.7	3.2	7.3		5.8	10.2	5.5	
Prop In Lane		1.00		1.00	1.00		1.00		1.00		1.00	
Lane Grp Cap(c), veh/h		101	1418	442	194	1082	478		226	1830	563	
V/C Ratio(X)		0.59	0.22	0.98	0.72	0.12	0.27		0.75	0.33	0.19	
Avail Cap(c_a), veh/h		562	1418	442	562	1082	478		562	2670	821	
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Upstream Filter(I)		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Uniform Delay (d), s/veh		57.2	33.1	42.8	55.4	29.9	31.3		54.8	27.7	26.2	
Incr Delay (d2), s/veh		2.0	0.0	38.1	1.8	0.0	0.1		1.9	0.0	0.1	
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln		1.0	2.7	18.9	2.3	1.6	3.2		2.8	4.8	2.4	
LnGrp Delay(d),s/veh		59.3	33.2	80.9	57.2	29.9	31.4		56.7	27.8	26.3	
LnGrp LOS		E	C	F	E	C	C		E	C	C	
Approach Vol, veh/h			812			396				872		
Approach Delay, s/veh			60.6			40.0				33.2		
Approach LOS			E			D				C		

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.7	50.4	12.2	40.1	13.3	53.7	9.0	43.3
Change Period (Y+Rc), s	5.5	* 7.4	5.5	* 6.8	5.5	* 7.4	5.5	6.8
Max Green Setting (Gmax), s	19.5	* 63	19.5	* 33	19.5	* 63	19.5	33.2
Max Q Clear Time (g_c+I1), s	11.1	12.2	6.7	34.5	7.8	40.1	4.1	9.3
Green Ext Time (p_c), s	0.1	6.7	0.1	0.0	0.1	6.2	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	41.5
HCM 2010 LOS	D

Notes

Movement	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (veh/h)	243	1586	124
Future Volume (veh/h)	243	1586	124
Number	1	6	16
Initial Q (Qb), veh	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863
Adj Flow Rate, veh/h	267	1743	136
Adj No. of Lanes	2	3	1
Peak Hour Factor	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2
Cap, veh/h	323	1973	614
Arrive On Green	0.09	0.39	0.39
Sat Flow, veh/h	3442	5085	1583
Grp Volume(v), veh/h	267	1743	136
Grp Sat Flow(s),veh/h/ln	1721	1695	1583
Q Serve(g_s), s	9.1	38.1	6.9
Cycle Q Clear(g_c), s	9.1	38.1	6.9
Prop In Lane	1.00		1.00
Lane Grp Cap(c), veh/h	323	1973	614
V/C Ratio(X)	0.83	0.88	0.22
Avail Cap(c_a), veh/h	562	2666	830
HCM Platoon Ratio	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.1	34.0	24.5
Incr Delay (d2), s/veh	2.1	2.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	18.2	3.0
LnGrp Delay(d),s/veh	55.2	36.4	24.5
LnGrp LOS	E	D	C
Approach Vol, veh/h		2146	
Approach Delay, s/veh		38.0	
Approach LOS		D	
Timer			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	174	120	37	403	501	155
Future Volume (veh/h)	174	120	37	403	501	155
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1900
Adj Flow Rate, veh/h	193	133	40	433	611	189
Adj No. of Lanes	0	0	1	1	1	0
Peak Hour Factor	0.90	0.90	0.93	0.93	0.82	0.82
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	221	153	48	1104	664	206
Arrive On Green	0.22	0.22	0.03	0.59	0.49	0.49
Sat Flow, veh/h	998	688	1774	1863	1366	422
Grp Volume(v), veh/h	327	0	40	433	0	800
Grp Sat Flow(s),veh/h/ln	1691	0	1774	1863	0	1788
Q Serve(g_s), s	10.9	0.0	1.3	7.2	0.0	24.2
Cycle Q Clear(g_c), s	10.9	0.0	1.3	7.2	0.0	24.2
Prop In Lane	0.59	0.41	1.00			0.24
Lane Grp Cap(c), veh/h	375	0	48	1104	0	870
V/C Ratio(X)	0.87	0.00	0.83	0.39	0.00	0.92
Avail Cap(c_a), veh/h	1026	0	622	2055	0	1963
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.8	0.0	28.2	6.3	0.0	13.9
Incr Delay (d2), s/veh	2.5	0.0	12.7	0.1	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	0.8	3.6	0.0	12.2
LnGrp Delay(d),s/veh	24.3	0.0	40.8	6.4	0.0	15.7
LnGrp LOS	C		D	A		B
Approach Vol, veh/h	327			473	800	
Approach Delay, s/veh	24.3			9.3	15.7	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.2	34.4				40.6		17.6
Change Period (Y+Rc), s	* 4.6	* 6.1				* 6.1		4.7
Max Green Setting (Gmax), s	* 20	* 64				* 64		35.3
Max Q Clear Time (g_c+I1), s	3.3	26.2				9.2		12.9
Green Ext Time (p_c), s	0.0	2.1				2.1		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	15.6
HCM 2010 LOS	B

Notes

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	2	20	907	178	392	659	27	180	167	687	18	54
Future Volume (veh/h)	2	20	907	178	392	659	27	180	167	687	18	54
Number		1	6	16	5	2	12	3	8	18	7	4
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00	1.00		0.97	1.00		0.96	1.00	
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863
Adj Flow Rate, veh/h		24	1093	0	431	724	30	202	476	494	24	72
Adj No. of Lanes		1	2	1	2	2	0	1	1	1	0	2
Peak Hour Factor		0.83	0.83	0.83	0.91	0.91	0.91	0.87	0.87	0.87	0.75	0.75
Percent Heavy Veh, %		2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h		30	1194	534	476	1585	66	456	479	609	79	240
Arrive On Green		0.02	0.34	0.00	0.14	0.46	0.46	0.26	0.26	0.26	0.12	0.12
Sat Flow, veh/h		1774	3539	1583	3442	3459	143	1774	1863	1518	690	2085
Grp Volume(v), veh/h		24	1093	0	431	370	384	202	476	494	64	0
Grp Sat Flow(s),veh/h/ln		1774	1770	1583	1721	1770	1833	1774	1863	1518	1828	0
Q Serve(g_s), s		1.8	40.1	0.0	16.7	19.4	19.4	12.9	34.5	34.8	4.3	0.0
Cycle Q Clear(g_c), s		1.8	40.1	0.0	16.7	19.4	19.4	12.9	34.5	34.8	4.3	0.0
Prop In Lane		1.00		1.00	1.00		0.08	1.00		1.00	0.38	
Lane Grp Cap(c), veh/h		30	1194	534	476	811	840	456	479	609	210	0
V/C Ratio(X)		0.80	0.92	0.00	0.91	0.46	0.46	0.44	0.99	0.81	0.30	0.00
Avail Cap(c_a), veh/h		258	1707	764	503	855	885	456	479	609	466	0
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh		66.3	43.0	0.0	57.5	25.1	25.1	42.2	50.2	36.7	54.9	0.0
Incr Delay (d2), s/veh		16.7	4.9	0.0	18.6	0.1	0.1	0.3	39.5	7.6	0.3	0.0
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		1.0	20.4	0.0	9.2	9.5	9.8	6.4	23.0	17.7	2.2	0.0
LnGrp Delay(d),s/veh		83.1	47.9	0.0	76.1	25.3	25.3	42.4	89.6	44.3	55.2	0.0
LnGrp LOS		F	D		E	C	C	D	F	D	E	
Approach Vol, veh/h			1117			1185			1172			120
Approach Delay, s/veh			48.6			43.8			62.4			55.2
Approach LOS			D			D			E			E

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.6	66.7		21.1	23.9	50.4		40.0
Change Period (Y+Rc), s	* 5.3	* 4.7		5.5	* 5.2	* 4.7		5.2
Max Green Setting (Gmax), s	* 20	* 65		34.5	* 20	* 65		34.8
Max Q Clear Time (g_c+I1), s	3.8	21.4		6.3	18.7	42.1		36.8
Green Ext Time (p_c), s	0.0	3.7		0.1	0.0	3.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	51.7
HCM 2010 LOS	D

Notes

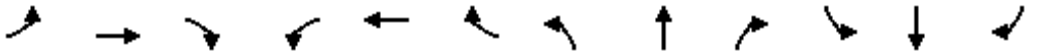
Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	18
Future Volume (veh/h)	18
Number	14
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.90
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1900
Adj Flow Rate, veh/h	24
Adj No. of Lanes	0
Peak Hour Factor	0.75
Percent Heavy Veh, %	2
Cap, veh/h	81
Arrive On Green	0.12
Sat Flow, veh/h	701
Grp Volume(v), veh/h	56
Grp Sat Flow(s),veh/h/ln	1648
Q Serve(g_s), s	4.2
Cycle Q Clear(g_c), s	4.2
Prop In Lane	0.43
Lane Grp Cap(c), veh/h	190
V/C Ratio(X)	0.30
Avail Cap(c_a), veh/h	420
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	54.9
Incr Delay (d2), s/veh	0.3
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	2.0
LnGrp Delay(d),s/veh	55.2
LnGrp LOS	E
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	343	0	310	0	1098	1055	0	562	326
Future Volume (veh/h)	0	0	0	343	0	310	0	1098	1055	0	562	326
Number				3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	0	1863	1900	0	1863	1900
Adj Flow Rate, veh/h				371	27	352	0	1132	0	0	677	0
Adj No. of Lanes				1	1	0	0	2	0	0	2	0
Peak Hour Factor				0.88	0.88	0.88	0.97	0.97	0.97	0.83	0.83	0.83
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				463	29	380	0	2297	0	0	2297	0
Arrive On Green				0.26	0.26	0.26	0.00	0.65	0.00	0.00	0.65	0.00
Sat Flow, veh/h				1774	112	1456	0	3725	0	0	3725	0
Grp Volume(v), veh/h				371	0	379	0	1132	0	0	677	0
Grp Sat Flow(s),veh/h/ln				1774	0	1568	0	1770	0	0	1770	0
Q Serve(g_s), s				21.5	0.0	25.9	0.0	18.2	0.0	0.0	9.1	0.0
Cycle Q Clear(g_c), s				21.5	0.0	25.9	0.0	18.2	0.0	0.0	9.1	0.0
Prop In Lane				1.00		0.93	0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				463	0	409	0	2297	0	0	2297	0
V/C Ratio(X)				0.80	0.00	0.93	0.00	0.49	0.00	0.00	0.29	0.00
Avail Cap(c_a), veh/h				566	0	500	0	2297	0	0	2297	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				38.0	0.0	39.6	0.0	10.0	0.0	0.0	8.4	0.0
Incr Delay (d2), s/veh				5.4	0.0	19.3	0.0	0.8	0.0	0.0	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				11.2	0.0	13.4	0.0	9.0	0.0	0.0	4.5	0.0
LnGrp Delay(d),s/veh				43.4	0.0	58.9	0.0	10.7	0.0	0.0	8.7	0.0
LnGrp LOS				D		E		B			A	
Approach Vol, veh/h					750			1132			677	
Approach Delay, s/veh					51.2			10.7			8.7	
Approach LOS					D			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		76.4				76.4		33.6
Change Period (Y+Rc), s		* 5				5.0		4.9
Max Green Setting (Gmax), s		* 66				65.0		35.1
Max Q Clear Time (g_c+I1), s		11.1				20.2		27.9
Green Ext Time (p_c), s		4.8				4.8		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	22.1
HCM 2010 LOS	C

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	534	0	608	0	0	0	0	1519	828	0	658	215
Future Volume (veh/h)	534	0	608	0	0	0	0	1519	828	0	658	215
Number	7	4	14				1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	816	0	437				0	1766	0	0	700	0
Adj No. of Lanes	2	0	1				0	3	0	0	2	1
Peak Hour Factor	0.90	0.90	0.90				0.86	0.86	0.86	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	1041	0	463				0	3112	0	0	2166	969
Arrive On Green	0.29	0.00	0.29				0.00	0.61	0.00	0.00	0.61	0.00
Sat Flow, veh/h	3548	0	1578				0	5421	0	0	3632	1583
Grp Volume(v), veh/h	816	0	437				0	1766	0	0	700	0
Grp Sat Flow(s),veh/h/ln	1774	0	1578				0	1695	0	0	1770	1583
Q Serve(g_s), s	23.2	0.0	29.8				0.0	22.7	0.0	0.0	10.5	0.0
Cycle Q Clear(g_c), s	23.2	0.0	29.8				0.0	22.7	0.0	0.0	10.5	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	1041	0	463				0	3112	0	0	2166	969
V/C Ratio(X)	0.78	0.00	0.94				0.00	0.57	0.00	0.00	0.32	0.00
Avail Cap(c_a), veh/h	1116	0	497				0	3112	0	0	2166	969
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	35.7	0.0	38.0				0.0	12.7	0.0	0.0	10.3	0.0
Incr Delay (d2), s/veh	3.1	0.0	25.3				0.0	0.8	0.0	0.0	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.8	0.0	16.2				0.0	10.7	0.0	0.0	5.2	0.0
LnGrp Delay(d),s/veh	38.7	0.0	63.3				0.0	13.4	0.0	0.0	10.7	0.0
LnGrp LOS	D		E					B			B	
Approach Vol, veh/h		1253						1766			700	
Approach Delay, s/veh		47.3						13.4			10.7	
Approach LOS		D						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		72.3		37.7		72.3		
Change Period (Y+Rc), s		* 5		* 5.4		5.0		
Max Green Setting (Gmax), s		* 66		* 35		65.0		
Max Q Clear Time (g_c+I1), s		12.5		31.8		24.7		
Green Ext Time (p_c), s		8.2		0.5		8.1		

Intersection Summary	
HCM 2010 Ctrl Delay	24.3
HCM 2010 LOS	C

Notes

Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (veh/h)	693	234	7	142	1115	623	102
Future Volume (veh/h)	693	234	7	142	1115	623	102
Number	6	16		5	2	3	18
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900		1863	1863	1863	1863
Adj Flow Rate, veh/h	806	0		160	1253	890	146
Adj No. of Lanes	3	0		1	3	2	1
Peak Hour Factor	0.86	0.86		0.89	0.89	0.70	0.70
Percent Heavy Veh, %	2	2		2	2	2	2
Cap, veh/h	2459	0		190	3255	955	439
Arrive On Green	0.48	0.00		0.11	0.64	0.28	0.28
Sat Flow, veh/h	5421	0		1774	5253	3442	1583
Grp Volume(v), veh/h	806	0		160	1253	890	146
Grp Sat Flow(s),veh/h/ln	1695	0		1774	1695	1721	1583
Q Serve(g_s), s	10.0	0.0		9.1	12.1	26.0	7.6
Cycle Q Clear(g_c), s	10.0	0.0		9.1	12.1	26.0	7.6
Prop In Lane		0.00		1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2459	0		190	3255	955	439
V/C Ratio(X)	0.33	0.00		0.84	0.38	0.93	0.33
Avail Cap(c_a), veh/h	3207	0		343	3255	1219	561
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.3	0.0		45.2	8.9	36.3	29.6
Incr Delay (d2), s/veh	0.2	0.0		3.8	0.2	9.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0		4.7	5.6	13.7	3.3
LnGrp Delay(d),s/veh	16.5	0.0		49.0	9.0	46.2	29.8
LnGrp LOS	B			D	A	D	C
Approach Vol, veh/h	806				1413	1036	
Approach Delay, s/veh	16.5				13.5	43.9	
Approach LOS	B				B	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		71.0			16.1	54.8		32.1
Change Period (Y+Rc), s		5.0			* 5.1	5.0		3.5
Max Green Setting (Gmax), s		65.0			* 20	65.0		36.5
Max Q Clear Time (g_c+I1), s		14.1			11.1	12.0		28.0
Green Ext Time (p_c), s		38.2			0.0	37.8		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	23.9
HCM 2010 LOS	C

Notes

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (veh/h)	14	321	423	253	30	184	468	149	14	112	460	75
Future Volume (veh/h)	14	321	423	253	30	184	468	149	14	112	460	75
Number		3	8	18		7	4	14		1	6	16
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.97		1.00		0.96		1.00		0.97
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1900		1863	1863	1863		1863	1863	1863
Adj Flow Rate, veh/h		401	529	316		224	571	182		117	479	78
Adj No. of Lanes		2	3	0		2	3	1		2	3	1
Peak Hour Factor		0.80	0.80	0.80		0.82	0.82	0.82		0.96	0.96	0.96
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2
Cap, veh/h		473	905	410		296	1096	328		423	1666	505
Arrive On Green		0.14	0.27	0.27		0.09	0.22	0.22		0.12	0.33	0.33
Sat Flow, veh/h		3442	3390	1537		3442	5085	1520		3442	5085	1541
Grp Volume(v), veh/h		401	529	316		224	571	182		117	479	78
Grp Sat Flow(s),veh/h/ln		1721	1695	1537		1721	1695	1520		1721	1695	1541
Q Serve(g_s), s		10.6	12.6	17.6		5.9	9.2	9.9		2.9	6.5	3.3
Cycle Q Clear(g_c), s		10.6	12.6	17.6		5.9	9.2	9.9		2.9	6.5	3.3
Prop In Lane		1.00		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h		473	905	410		296	1096	328		423	1666	505
V/C Ratio(X)		0.85	0.58	0.77		0.76	0.52	0.56		0.28	0.29	0.15
Avail Cap(c_a), veh/h		723	1249	566		723	1874	560		723	3528	1069
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		39.1	29.6	31.4		41.5	32.2	32.4		37.0	23.2	22.1
Incr Delay (d2), s/veh		3.7	0.2	2.7		1.5	0.1	0.5		0.1	0.0	0.1
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		5.3	5.9	7.8		2.9	4.3	4.2		1.4	3.0	1.4
LnGrp Delay(d),s/veh		42.7	29.8	34.1		42.9	32.3	33.0		37.1	23.2	22.2
LnGrp LOS		D	C	C		D	C	C		D	C	C
Approach Vol, veh/h			1246				977				674	
Approach Delay, s/veh			35.0				34.9				25.5	
Approach LOS			D				C				C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.9	31.9	18.2	25.8	12.7	36.0	13.5	30.6
Change Period (Y+Rc), s	5.5	* 5.6	5.5	5.8	5.5	* 5.6	5.5	5.8
Max Green Setting (Gmax), s	19.5	* 64	19.5	34.2	19.5	* 64	19.5	34.2
Max Q Clear Time (g_c+I1), s	4.9	21.4	12.6	11.9	7.2	8.5	7.9	19.6
Green Ext Time (p_c), s	0.1	4.0	0.2	3.4	0.1	4.0	0.1	3.2

Intersection Summary	
HCM 2010 Ctrl Delay	32.9
HCM 2010 LOS	C

Notes

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Volume (veh/h)	8	173	843	162
Future Volume (veh/h)	8	173	843	162
Number		5	2	12
Initial Q (Qb), veh		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.97
Parking Bus, Adj		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1900
Adj Flow Rate, veh/h		197	958	184
Adj No. of Lanes		2	3	0
Peak Hour Factor		0.88	0.88	0.88
Percent Heavy Veh, %		2	2	2
Cap, veh/h		269	1206	231
Arrive On Green		0.08	0.28	0.28
Sat Flow, veh/h		3442	4263	816
Grp Volume(v), veh/h		197	761	381
Grp Sat Flow(s),veh/h/ln		1721	1695	1689
Q Serve(g_s), s		5.2	19.3	19.4
Cycle Q Clear(g_c), s		5.2	19.3	19.4
Prop In Lane		1.00		0.48
Lane Grp Cap(c), veh/h		269	959	478
V/C Ratio(X)		0.73	0.79	0.80
Avail Cap(c_a), veh/h		723	2352	1171
HCM Platoon Ratio		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00
Uniform Delay (d), s/veh		41.8	30.8	30.8
Incr Delay (d2), s/veh		1.5	0.6	1.2
Initial Q Delay(d3),s/veh		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		2.5	9.1	9.1
LnGrp Delay(d),s/veh		43.3	31.4	32.0
LnGrp LOS		D	C	C
Approach Vol, veh/h			1339	
Approach Delay, s/veh			33.3	
Approach LOS			C	
Timer				

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	1	476	230	22	3	68	174	649	43	1137	11	337
Future Volume (veh/h)	1	476	230	22	3	68	174	649	43	1137	11	337
Number		3	8	18		7	4	14	1	6	16	5
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.99		1.00		0.97	1.00		0.98	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1900		1863	1863	1863	1863	1863	1900	1863
Adj Flow Rate, veh/h		501	242	23		78	200	746	46	1223	12	347
Adj No. of Lanes		2	3	0		2	1	2	2	3	0	2
Peak Hour Factor		0.95	0.95	0.95		0.87	0.87	0.87	0.93	0.93	0.93	0.97
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		551	1728	161		127	449	1112	81	1511	15	404
Arrive On Green		0.16	0.37	0.37		0.04	0.24	0.24	0.02	0.29	0.29	0.12
Sat Flow, veh/h		3442	4730	440		3548	1863	3074	3442	5192	51	3442
Grp Volume(v), veh/h		501	172	93		78	200	746	46	799	436	347
Grp Sat Flow(s),veh/h/ln		1721	1695	1780		1774	1863	1537	1721	1695	1853	1721
Q Serve(g_s), s		17.0	4.0	4.2		2.6	10.9	24.5	1.6	26.0	26.0	11.8
Cycle Q Clear(g_c), s		17.0	4.0	4.2		2.6	10.9	24.5	1.6	26.0	26.0	11.8
Prop In Lane		1.00		0.25		1.00		1.00	1.00		0.03	1.00
Lane Grp Cap(c), veh/h		551	1238	650		127	449	1112	81	987	539	404
V/C Ratio(X)		0.91	0.14	0.14		0.61	0.45	0.67	0.57	0.81	0.81	0.86
Avail Cap(c_a), veh/h		564	1822	957		581	1009	2036	564	1848	1010	708
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		49.2	25.3	25.3		56.6	38.4	32.4	57.5	39.2	39.2	51.6
Incr Delay (d2), s/veh		18.0	0.0	0.0		1.8	0.3	0.3	2.3	0.6	1.1	2.1
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		9.5	1.9	2.0		1.3	5.6	10.4	0.8	12.3	13.5	5.7
LnGrp Delay(d),s/veh		67.2	25.3	25.4		58.4	38.7	32.7	59.8	39.8	40.3	53.7
LnGrp LOS		E	C	C		E	D	C	E	D	D	D
Approach Vol, veh/h			766				1024			1281		
Approach Delay, s/veh			52.7				35.8			40.7		
Approach LOS			D				D			D		

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	51.5	24.6	34.7	19.5	40.4	9.8	49.5
Change Period (Y+Rc), s	5.5	* 5.7	5.5	* 6	5.5	* 5.7	5.5	* 6
Max Green Setting (Gmax), s	19.5	* 64	19.5	* 65	24.5	* 65	19.5	* 64
Max Q Clear Time (g_c+I1), s	3.6	20.5	19.0	26.5	13.8	28.0	4.6	6.2
Green Ext Time (p_c), s	0.0	6.7	0.0	1.5	0.2	6.6	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	39.1
HCM 2010 LOS	D

Notes

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	995	237
Future Volume (veh/h)	995	237
Number	2	12
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		0.99
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	1026	244
Adj No. of Lanes	3	1
Peak Hour Factor	0.97	0.97
Percent Heavy Veh, %	2	2
Cap, veh/h	1957	604
Arrive On Green	0.38	0.38
Sat Flow, veh/h	5085	1569
Grp Volume(v), veh/h	1026	244
Grp Sat Flow(s),veh/h/ln	1695	1569
Q Serve(g_s), s	18.5	13.5
Cycle Q Clear(g_c), s	18.5	13.5
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1957	604
V/C Ratio(X)	0.52	0.40
Avail Cap(c_a), veh/h	2746	847
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	28.2	26.7
Incr Delay (d2), s/veh	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	5.9
LnGrp Delay(d),s/veh	28.3	26.9
LnGrp LOS	C	C
Approach Vol, veh/h	1617	
Approach Delay, s/veh	33.5	
Approach LOS	C	

Timer

Jaeger Ranch
19: Zinfandel Dr & US-50 EB Ramps & Gold Center Dr

Movement	EBL2	EBL	EBT	EBR	WBR	WBR2	NBT	NBR	NBR2	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	658	1	120	622	870	119	1812	411	4	996	135
Future Volume (vph)	658	1	120	622	870	119	1812	411	4	996	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8	6.8	6.8	4.6		4.6			4.6	4.0
Lane Util. Factor	0.95	0.95	0.95	0.95	0.88		0.86			0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	0.98	1.00		1.00			1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.90	0.85	0.85		0.97			1.00	0.85
Flt Protected	0.95	0.95	1.00	1.00	1.00		1.00			1.00	1.00
Satd. Flow (prot)	1681	1681	1562	1469	2787		6198			3539	1540
Flt Permitted	0.95	0.95	1.00	1.00	1.00		1.00			1.00	1.00
Satd. Flow (perm)	1681	1681	1562	1469	2787		6198			3539	1540
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.86	0.86	0.88	0.88	0.88	0.92	0.92
Adj. Flow (vph)	693	1	126	655	1012	138	2059	467	5	1083	147
RTOR Reduction (vph)	0	0	47	47	12	0	0	0	0	0	0
Lane Group Flow (vph)	346	348	354	333	1138	0	2531	0	0	1083	147
Confl. Peds. (#/hr)	11	11		11	3	3		3	3		11
Confl. Bikes (#/hr)								8	8		5
Turn Type	Split	Split	NA	Perm	Prot		NA			NA	Free
Protected Phases	4	4	4		2!		6!			2	
Permitted Phases				4	2						Free
Actuated Green, G (s)	34.8	34.8	34.8	34.8	78.8		78.8			78.8	125.0
Effective Green, g (s)	34.8	34.8	34.8	34.8	78.8		78.8			78.8	125.0
Actuated g/C Ratio	0.28	0.28	0.28	0.28	0.63		0.63			0.63	1.00
Clearance Time (s)	6.8	6.8	6.8	6.8	4.6		4.6			4.6	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0		1.0			1.0	
Lane Grp Cap (vph)	467	467	434	408	1756		3907			2230	1540
v/s Ratio Prot	0.21	0.21	0.23		0.41		c0.41			0.31	
v/s Ratio Perm				c0.23							0.10
v/c Ratio	0.74	0.75	0.82	0.82	0.65		0.65			0.49	0.10
Uniform Delay, d1	41.0	41.1	42.1	42.1	14.4		14.4			12.3	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00			1.21	1.00
Incremental Delay, d2	5.5	5.6	10.7	11.3	1.9		0.8			0.7	0.1
Delay (s)	46.5	46.7	52.8	53.5	16.3		15.3			15.6	0.1
Level of Service	D	D	D	D	B		B			B	A
Approach Delay (s)			50.0				15.3			13.8	
Approach LOS			D				B			B	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	99.8%	ICU Level of Service	F
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	398	0	293	1	0	1627	1720	0	710
Future Volume (veh/h)	0	0	0	398	0	293	1	0	1627	1720	0	710
Number				3	8	18		1	6	16	5	2
Initial Q (Qb), veh				0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00		1.00		1.00	1.00	
Parking Bus, Adj				1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863		0	1863	1863	0	1863
Adj Flow Rate, veh/h				428	0	315		0	1660	0	0	747
Adj No. of Lanes				2	0	1		0	3	2	0	2
Peak Hour Factor				0.93	0.93	0.93		0.98	0.98	0.98	0.95	0.95
Percent Heavy Veh, %				2	0	2		0	2	2	0	2
Cap, veh/h				740	0	340		0	3528	1933	0	2456
Arrive On Green				0.21	0.00	0.21		0.00	0.69	0.00	0.00	0.69
Sat Flow, veh/h				3442	0	1583		0	5253	2787	0	3632
Grp Volume(v), veh/h				428	0	315		0	1660	0	0	747
Grp Sat Flow(s),veh/h/ln				1721	0	1583		0	1695	1393	0	1770
Q Serve(g_s), s				13.9	0.0	24.4		0.0	18.5	0.0	0.0	10.2
Cycle Q Clear(g_c), s				13.9	0.0	24.4		0.0	18.5	0.0	0.0	10.2
Prop In Lane				1.00		1.00		0.00		1.00	0.00	
Lane Grp Cap(c), veh/h				740	0	340		0	3528	1933	0	2456
V/C Ratio(X)				0.58	0.00	0.93		0.00	0.47	0.00	0.00	0.30
Avail Cap(c_a), veh/h				1327	0	611		0	3528	1933	0	2456
HCM Platoon Ratio				1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00		0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				44.0	0.0	48.1		0.0	8.7	0.0	0.0	7.4
Incr Delay (d2), s/veh				0.3	0.0	6.1		0.0	0.5	0.0	0.0	0.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.7	0.0	11.2		0.0	8.8	0.0	0.0	5.1
LnGrp Delay(d),s/veh				44.3	0.0	54.2		0.0	9.2	0.0	0.0	7.7
LnGrp LOS				D		D			A			A
Approach Vol, veh/h					743				1660			747
Approach Delay, s/veh					48.5				9.2			7.7
Approach LOS					D				A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		91.3				91.3		33.7
Change Period (Y+Rc), s		4.6				4.6		6.8
Max Green Setting (Gmax), s		65.4				65.4		48.2
Max Q Clear Time (g_c+I1), s		12.2				20.5		26.4
Green Ext Time (p_c), s		7.8				7.8		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	18.1
HCM 2010 LOS	B

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	500
Future Volume (veh/h)	500
Number	12
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	0
Adj No. of Lanes	1
Peak Hour Factor	0.95
Percent Heavy Veh, %	2
Cap, veh/h	1099
Arrive On Green	0.00
Sat Flow, veh/h	1583
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	1583
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	1099
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	1099
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	0.0
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (veh/h)	35	251	565	245	11	242	297	213	71	218	867	212
Future Volume (veh/h)	35	251	565	245	11	242	297	213	71	218	867	212
Number		3	8	18		7	4	14		1	6	16
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.99		1.00		1.00		1.00		1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1676	1676	1676		1676	1676	1676		1676	1676	1676
Adj Flow Rate, veh/h		295	665	288		299	367	263		240	953	233
Adj No. of Lanes		2	2	1		2	3	1		2	3	1
Peak Hour Factor		0.85	0.85	0.85		0.81	0.81	0.81		0.91	0.91	0.91
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2
Cap, veh/h		330	889	395		334	1284	399		276	1733	537
Arrive On Green		0.11	0.28	0.28		0.11	0.28	0.28		0.09	0.38	0.38
Sat Flow, veh/h		3097	3185	1416		3097	4577	1422		3097	4577	1418
Grp Volume(v), veh/h		295	665	288		299	367	263		240	953	233
Grp Sat Flow(s),veh/h/ln		1549	1593	1416		1549	1526	1422		1549	1526	1418
Q Serve(g_s), s		15.5	31.3	30.2		15.7	10.3	26.8		12.6	26.8	20.1
Cycle Q Clear(g_c), s		15.5	31.3	30.2		15.7	10.3	26.8		12.6	26.8	20.1
Prop In Lane		1.00		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h		330	889	395		334	1284	399		276	1733	537
V/C Ratio(X)		0.89	0.75	0.73		0.90	0.29	0.66		0.87	0.55	0.43
Avail Cap(c_a), veh/h		368	1241	551		368	1284	399		368	1794	556
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		72.5	54.0	53.6		72.4	46.2	52.2		73.9	40.0	37.9
Incr Delay (d2), s/veh		20.5	2.8	5.5		21.0	0.4	6.9		12.8	0.6	1.1
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		7.6	14.1	12.4		7.7	4.4	11.3		5.9	11.4	8.0
LnGrp Delay(d),s/veh		93.0	56.8	59.0		93.4	46.7	59.1		86.7	40.7	39.1
LnGrp LOS		F	E	E		F	D	E		F	D	D
Approach Vol, veh/h			1248				929				1426	
Approach Delay, s/veh			65.8				65.2				48.1	
Approach LOS			E				E				D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.1	69.1	23.0	52.1	21.2	68.0	23.2	51.9
Change Period (Y+Rc), s	5.5	* 5.8	5.5	6.0	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	19.5	* 64	19.5	34.0	19.5	* 64	19.5	64.0
Max Q Clear Time (g_c+I1), s	14.6	45.5	17.5	28.8	15.6	28.8	17.7	33.3
Green Ext Time (p_c), s	0.1	17.8	0.1	4.5	0.1	32.6	0.1	12.6

Intersection Summary	
HCM 2010 Ctrl Delay	56.5
HCM 2010 LOS	E

Notes

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Volume (veh/h)	36	226	1199	132
Future Volume (veh/h)	36	226	1199	132
Number		5	2	12
Initial Q (Qb), veh		0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00
Parking Bus, Adj		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1676	1676	1676
Adj Flow Rate, veh/h		260	1378	152
Adj No. of Lanes		2	3	1
Peak Hour Factor		0.87	0.87	0.87
Percent Heavy Veh, %		2	2	2
Cap, veh/h		296	1763	546
Arrive On Green		0.10	0.39	0.39
Sat Flow, veh/h		3097	4577	1418
Grp Volume(v), veh/h		260	1378	152
Grp Sat Flow(s),veh/h/ln		1549	1526	1418
Q Serve(g_s), s		13.6	43.5	12.1
Cycle Q Clear(g_c), s		13.6	43.5	12.1
Prop In Lane		1.00		1.00
Lane Grp Cap(c), veh/h		296	1763	546
V/C Ratio(X)		0.88	0.78	0.28
Avail Cap(c_a), veh/h		368	1788	554
HCM Platoon Ratio		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00
Uniform Delay (d), s/veh		73.4	44.4	34.8
Incr Delay (d2), s/veh		15.8	2.6	0.6
Initial Q Delay(d3),s/veh		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		6.5	18.8	4.9
LnGrp Delay(d),s/veh		89.2	47.1	35.4
LnGrp LOS		F	D	D
Approach Vol, veh/h			1790	
Approach Delay, s/veh			52.2	
Approach LOS			D	
Timer				

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (veh/h)	422	401	90	1	187	266	247	2	50	1119	154	1
Future Volume (veh/h)	422	401	90	1	187	266	247	2	50	1119	154	1
Number	3	8	18		7	4	14		1	6	16	
Initial Q (Qb), veh	0	0	0		0	0	0		0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.98		1.00		0.98		1.00		0.99	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	1863	1863		1863	1863	1863		1863	1863	1863	
Adj Flow Rate, veh/h	474	451	101		203	412	186		66	1472	203	
Adj No. of Lanes	2	2	1		2	2	1		2	4	1	
Peak Hour Factor	0.89	0.89	0.89		0.92	0.92	0.92		0.76	0.76	0.76	
Percent Heavy Veh, %	2	2	2		2	2	2		2	2	2	
Cap, veh/h	486	912	401		254	701	291		108	2711	661	
Arrive On Green	0.14	0.26	0.26		0.07	0.19	0.19		0.03	0.42	0.42	
Sat Flow, veh/h	3442	3539	1554		3548	3725	1546		3442	6408	1562	
Grp Volume(v), veh/h	474	451	101		203	412	186		66	1472	203	
Grp Sat Flow(s),veh/h/ln	1721	1770	1554		1774	1863	1546		1721	1602	1562	
Q Serve(g_s), s	18.9	15.0	7.1		7.8	13.9	15.3		2.6	23.8	11.9	
Cycle Q Clear(g_c), s	18.9	15.0	7.1		7.8	13.9	15.3		2.6	23.8	11.9	
Prop In Lane	1.00		1.00		1.00		1.00		1.00		1.00	
Lane Grp Cap(c), veh/h	486	912	401		254	701	291		108	2711	661	
V/C Ratio(X)	0.98	0.49	0.25		0.80	0.59	0.64		0.61	0.54	0.31	
Avail Cap(c_a), veh/h	486	912	401		501	917	381		486	2979	726	
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Uniform Delay (d), s/veh	59.0	43.6	40.7		63.1	51.2	51.7		66.1	29.8	26.4	
Incr Delay (d2), s/veh	34.2	0.6	0.5		2.2	1.3	4.0		3.4	0.1	0.2	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	11.3	7.4	3.1		3.9	7.3	6.9		1.3	10.5	5.1	
LnGrp Delay(d),s/veh	93.3	44.2	41.2		65.3	52.5	55.7		69.5	29.9	26.6	
LnGrp LOS	F	D	D		E	D	E		E	C	C	
Approach Vol, veh/h		1026				801				1741		
Approach Delay, s/veh		66.6				56.5				31.0		
Approach LOS		E				E				C		

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	71.3	25.0	32.0	16.9	64.2	15.4	41.6
Change Period (Y+Rc), s	5.5	* 5.8	5.5	6.0	5.5	* 5.8	5.5	* 6
Max Green Setting (Gmax), s	19.5	* 64	19.5	34.0	19.5	* 64	19.5	* 34
Max Q Clear Time (g_c+I1), s	4.6	27.5	20.9	17.3	11.3	25.8	9.8	17.0
Green Ext Time (p_c), s	0.1	32.5	0.0	7.7	0.1	32.7	0.1	9.2

Intersection Summary	
HCM 2010 Ctrl Delay	41.5
HCM 2010 LOS	D

Notes

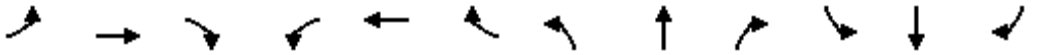
Movement	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (veh/h)	216	1215	257
Future Volume (veh/h)	216	1215	257
Number	5	2	12
Initial Q (Qb), veh	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863
Adj Flow Rate, veh/h	235	1321	279
Adj No. of Lanes	2	3	1
Peak Hour Factor	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2
Cap, veh/h	284	2412	748
Arrive On Green	0.08	0.47	0.47
Sat Flow, veh/h	3442	5085	1578
Grp Volume(v), veh/h	235	1321	279
Grp Sat Flow(s),veh/h/ln	1721	1695	1578
Q Serve(g_s), s	9.3	25.5	15.6
Cycle Q Clear(g_c), s	9.3	25.5	15.6
Prop In Lane	1.00		1.00
Lane Grp Cap(c), veh/h	284	2412	748
V/C Ratio(X)	0.83	0.55	0.37
Avail Cap(c_a), veh/h	486	2412	748
HCM Platoon Ratio	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.4	25.8	23.2
Incr Delay (d2), s/veh	2.4	0.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	12.0	6.9
LnGrp Delay(d),s/veh	64.8	26.2	23.8
LnGrp LOS	E	C	C
Approach Vol, veh/h		1835	
Approach Delay, s/veh		30.8	
Approach LOS		C	
Timer			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1230	0	322	0	0	0	0	1590	179	0	1362	403
Future Volume (veh/h)	1230	0	322	0	0	0	0	1590	179	0	1362	403
Number	7	4	14				1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	1337	0	350				0	1787	0	0	1480	0
Adj No. of Lanes	3	0	2				0	4	1	0	3	1
Peak Hour Factor	0.92	0.92	0.92				0.89	0.89	0.89	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2				0	2	2	0	2	2
Cap, veh/h	1431	0	797				0	4548	966	0	3411	966
Arrive On Green	0.29	0.00	0.29				0.00	0.61	0.00	0.00	0.61	0.00
Sat Flow, veh/h	5003	0	2787				0	7451	1583	0	5588	1583
Grp Volume(v), veh/h	1337	0	350				0	1787	0	0	1480	0
Grp Sat Flow(s),veh/h/ln	1668	0	1393				0	1863	1583	0	1863	1583
Q Serve(g_s), s	28.6	0.0	11.3				0.0	13.5	0.0	0.0	15.4	0.0
Cycle Q Clear(g_c), s	28.6	0.0	11.3				0.0	13.5	0.0	0.0	15.4	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	1431	0	797				0	4548	966	0	3411	966
V/C Ratio(X)	0.93	0.00	0.44				0.00	0.39	0.00	0.00	0.43	0.00
Avail Cap(c_a), veh/h	1514	0	844				0	4548	966	0	3411	966
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	38.3	0.0	32.1				0.0	11.0	0.0	0.0	11.4	0.0
Incr Delay (d2), s/veh	10.4	0.0	0.1				0.0	0.3	0.0	0.0	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.5	0.0	4.3				0.0	7.0	0.0	0.0	7.9	0.0
LnGrp Delay(d),s/veh	48.7	0.0	32.2				0.0	11.2	0.0	0.0	11.8	0.0
LnGrp LOS	D		C					B			B	
Approach Vol, veh/h		1687						1787			1480	
Approach Delay, s/veh		45.3						11.2			11.8	
Approach LOS		D						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		71.8		38.2		71.8		
Change Period (Y+Rc), s		* 4.7		6.7		4.7		
Max Green Setting (Gmax), s		* 66		33.3		65.3		
Max Q Clear Time (g_c+I1), s		17.4		30.6		15.5		
Green Ext Time (p_c), s		13.8		0.8		13.9		

Intersection Summary	
HCM 2010 Ctrl Delay	23.0
HCM 2010 LOS	C

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	417	0	453	0	2431	359	0	1413	1217
Future Volume (veh/h)	0	0	0	417	0	453	0	2431	359	0	1413	1217
Number				3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h				496	0	539	0	2731	0	0	1519	0
Adj No. of Lanes				2	0	2	0	3	1	0	3	2
Peak Hour Factor				0.84	0.84	0.84	0.89	0.89	0.89	0.93	0.93	0.93
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				737	0	597	0	3782	1071	0	3441	1886
Arrive On Green				0.21	0.00	0.21	0.00	0.68	0.00	0.00	0.68	0.00
Sat Flow, veh/h				3442	0	2787	0	5588	1583	0	5253	2787
Grp Volume(v), veh/h				496	0	539	0	2731	0	0	1519	0
Grp Sat Flow(s),veh/h/ln				1721	0	1393	0	1863	1583	0	1695	1393
Q Serve(g_s), s				14.6	0.0	20.7	0.0	34.0	0.0	0.0	15.1	0.0
Cycle Q Clear(g_c), s				14.6	0.0	20.7	0.0	34.0	0.0	0.0	15.1	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				737	0	597	0	3782	1071	0	3441	1886
V/C Ratio(X)				0.67	0.00	0.90	0.00	0.72	0.00	0.00	0.44	0.00
Avail Cap(c_a), veh/h				1032	0	836	0	3782	1071	0	3441	1886
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				39.7	0.0	42.1	0.0	11.2	0.0	0.0	8.2	0.0
Incr Delay (d2), s/veh				0.4	0.0	8.2	0.0	1.2	0.0	0.0	0.4	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.9	0.0	8.7	0.0	17.6	0.0	0.0	7.2	0.0
LnGrp Delay(d),s/veh				40.1	0.0	50.3	0.0	12.5	0.0	0.0	8.6	0.0
LnGrp LOS				D		D		B			A	
Approach Vol, veh/h					1035			2731			1519	
Approach Delay, s/veh					45.4			12.5			8.6	
Approach LOS					D			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		79.4				79.4		30.6
Change Period (Y+Rc), s		* 5				5.0		7.0
Max Green Setting (Gmax), s		* 65				65.0		33.0
Max Q Clear Time (g_c+I1), s		17.1				36.0		22.7
Green Ext Time (p_c), s		25.1				19.0		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	17.8
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	186	36	173	61	23	57	33	151	2609	23	2	62
Future Volume (veh/h)	186	36	173	61	23	57	33	151	2609	23	2	62
Number	7	4	14	3	8	18		1	6	16		5
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0		0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.96		1.00		0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1900		1863	1863	1900		1863
Adj Flow Rate, veh/h	224	43	208	79	30	74		162	2805	25		68
Adj No. of Lanes	0	1	1	1	1	0		2	3	0		1
Peak Hour Factor	0.83	0.83	0.83	0.77	0.77	0.77		0.93	0.93	0.93		0.91
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2		2
Cap, veh/h	260	50	272	181	47	117		214	2685	24		87
Arrive On Green	0.17	0.17	0.17	0.10	0.10	0.10		0.06	0.52	0.52		0.05
Sat Flow, veh/h	1500	288	1567	1774	464	1145		3442	5198	46		1774
Grp Volume(v), veh/h	267	0	208	79	0	104		162	1827	1003		68
Grp Sat Flow(s),veh/h/ln	1788	0	1567	1774	0	1609		1721	1695	1854		1774
Q Serve(g_s), s	18.9	0.0	16.5	5.4	0.0	8.1		6.0	67.2	67.2		4.9
Cycle Q Clear(g_c), s	18.9	0.0	16.5	5.4	0.0	8.1		6.0	67.2	67.2		4.9
Prop In Lane	0.84		1.00	1.00		0.71		1.00		0.02		1.00
Lane Grp Cap(c), veh/h	310	0	272	181	0	164		214	1751	958		87
V/C Ratio(X)	0.86	0.00	0.76	0.44	0.00	0.63		0.76	1.04	1.05		0.79
Avail Cap(c_a), veh/h	474	0	415	470	0	426		526	1751	958		275
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	52.2	0.0	51.2	54.9	0.0	56.1		60.1	31.5	31.5		61.2
Incr Delay (d2), s/veh	6.4	0.0	1.7	0.6	0.0	1.5		2.1	33.7	42.4		5.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
%ile BackOfQ(50%),veh/ln	9.9	0.0	7.3	2.7	0.0	3.7		2.9	39.6	45.6		2.6
LnGrp Delay(d),s/veh	58.6	0.0	53.0	55.5	0.0	57.6		62.1	65.2	73.8		67.0
LnGrp LOS	E		D	E		E		E	F	F		E
Approach Vol, veh/h		475			183				2992			
Approach Delay, s/veh		56.1			56.7				67.9			
Approach LOS		E			E				E			

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.2	70.1		28.1	11.2	72.1		18.8
Change Period (Y+Rc), s	* 5.1	* 4.9		5.5	* 4.8	* 4.9		5.5
Max Green Setting (Gmax), s	* 20	* 65		34.5	* 20	* 65		34.5
Max Q Clear Time (g_c+I1), s	8.0	67.0		20.9	6.9	69.2		10.1
Green Ext Time (p_c), s	0.1	0.0		0.6	0.0	0.0		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	58.6
HCM 2010 LOS	E

Notes

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	2314	96
Future Volume (veh/h)	2314	96
Number	2	12
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		0.99
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	2543	105
Adj No. of Lanes	3	1
Peak Hour Factor	0.91	0.91
Percent Heavy Veh, %	2	2
Cap, veh/h	2548	787
Arrive On Green	0.50	0.50
Sat Flow, veh/h	5085	1571
Grp Volume(v), veh/h	2543	105
Grp Sat Flow(s),veh/h/ln	1695	1571
Q Serve(g_s), s	65.0	4.7
Cycle Q Clear(g_c), s	65.0	4.7
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	2548	787
V/C Ratio(X)	1.00	0.13
Avail Cap(c_a), veh/h	2548	787
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	32.4	17.4
Incr Delay (d2), s/veh	17.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	34.5	2.0
LnGrp Delay(d),s/veh	49.8	17.4
LnGrp LOS	D	B
Approach Vol, veh/h	2716	
Approach Delay, s/veh	49.0	
Approach LOS	D	
Timer		

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	689	22	6	586	0	687	46
Future Volume (veh/h)	689	22	6	586	0	687	46
Number	7	14	1	6		2	12
Initial Q (Qb), veh	0	0	0	0		0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00				1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00		1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863		1863	1863
Adj Flow Rate, veh/h	861	28	6	604		799	53
Adj No. of Lanes	2	1	1	2		2	1
Peak Hour Factor	0.80	0.80	0.97	0.97		0.86	0.86
Percent Heavy Veh, %	2	2	2	2		2	2
Cap, veh/h	1012	473	9	1536		1093	954
Arrive On Green	0.29	0.29	0.00	0.43		0.31	0.31
Sat Flow, veh/h	3442	1583	1774	3632		3632	1583
Grp Volume(v), veh/h	861	28	6	604		799	53
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1770		1770	1583
Q Serve(g_s), s	10.7	0.6	0.2	5.3		9.2	0.6
Cycle Q Clear(g_c), s	10.7	0.6	0.2	5.3		9.2	0.6
Prop In Lane	1.00	1.00	1.00				1.00
Lane Grp Cap(c), veh/h	1012	473	9	1536		1093	954
V/C Ratio(X)	0.85	0.06	0.70	0.39		0.73	0.06
Avail Cap(c_a), veh/h	4111	1899	758	4142		4119	2309
HCM Platoon Ratio	1.00	1.00	1.00	1.00		1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00		1.00	1.00
Uniform Delay (d), s/veh	15.2	11.4	22.7	8.8		14.1	3.7
Incr Delay (d2), s/veh	0.8	0.0	32.1	0.1		0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.6	0.1	2.6		4.5	0.5
LnGrp Delay(d),s/veh	16.0	11.4	54.8	8.9		14.4	3.7
LnGrp LOS	B	B	D	A		B	A
Approach Vol, veh/h	889			610		852	
Approach Delay, s/veh	15.8			9.3		13.8	
Approach LOS	B			A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	5.7	21.0		18.9		26.7		
Change Period (Y+Rc), s	5.5	* 6.9		5.5		* 6.9		
Max Green Setting (Gmax), s	19.5	* 53		54.5		* 53		
Max Q Clear Time (g_c+I1), s	2.2	11.2		12.7		7.3		
Green Ext Time (p_c), s	0.0	2.9		0.7		2.9		

Intersection Summary	
HCM 2010 Ctrl Delay	13.4
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	659	643	3	208	115	143	464
Future Volume (veh/h)	659	643	3	208	115	143	464
Number	1	6		2	12	3	18
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863		1863	1863	1863	1863
Adj Flow Rate, veh/h	716	699		257	142	155	504
Adj No. of Lanes	1	2		2	1	1	1
Peak Hour Factor	0.92	0.92		0.81	0.81	0.92	0.92
Percent Heavy Veh, %	2	2		2	2	2	2
Cap, veh/h	599	1862		458	205	595	531
Arrive On Green	0.34	0.53		0.13	0.13	0.34	0.34
Sat Flow, veh/h	1774	3632		3632	1583	1774	1583
Grp Volume(v), veh/h	716	699		257	142	155	504
Grp Sat Flow(s),veh/h/ln	1774	1770		1770	1583	1774	1583
Q Serve(g_s), s	29.8	10.3		6.0	7.6	5.6	27.4
Cycle Q Clear(g_c), s	29.8	10.3		6.0	7.6	5.6	27.4
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	599	1862		458	205	595	531
V/C Ratio(X)	1.19	0.38		0.56	0.69	0.26	0.95
Avail Cap(c_a), veh/h	599	2543		2539	1136	694	619
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.2	12.3		36.0	36.7	21.3	28.6
Incr Delay (d2), s/veh	103.3	0.0		0.4	1.6	0.1	21.4
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	31.7	5.0		3.0	3.4	2.8	15.0
LnGrp Delay(d),s/veh	132.5	12.4		36.4	38.3	21.4	50.0
LnGrp LOS	F	B		D	D	C	D
Approach Vol, veh/h		1415		399		659	
Approach Delay, s/veh		73.2		37.1		43.3	
Approach LOS		E		D		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	35.0	18.1				53.1		35.1
Change Period (Y+Rc), s	* 5.2	* 6.7				* 6.7		5.5
Max Green Setting (Gmax), s	* 30	* 63				* 63		34.5
Max Q Clear Time (g_c+I1), s	31.8	9.6				12.3		29.4
Green Ext Time (p_c), s	0.0	1.9				1.9		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	59.4
HCM 2010 LOS	E

Notes

Appendix C

Analysis Worksheets for
Existing (2017) plus Proposed Project Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	311	251	90	15	324	127	1	190	1644	23	8	61
Future Volume (veh/h)	311	251	90	15	324	127	1	190	1644	23	8	61
Number	3	8	18	7	4	14		1	6	16		5
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0		0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00		1.00		0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		1863	1863	1900		1863
Adj Flow Rate, veh/h	362	292	105	16	356	140		216	1868	26		67
Adj No. of Lanes	1	1	1	1	1	1		1	2	0		1
Peak Hour Factor	0.86	0.86	0.86	0.91	0.91	0.91		0.88	0.88	0.88		0.91
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2		2
Cap, veh/h	288	662	563	19	380	323		229	1482	21		85
Arrive On Green	0.16	0.36	0.36	0.01	0.20	0.20		0.13	0.41	0.41		0.05
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583		1774	3573	50		1774
Grp Volume(v), veh/h	362	292	105	16	356	140		216	923	971		67
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583		1774	1770	1853		1774
Q Serve(g_s), s	24.5	18.1	6.9	1.4	28.4	11.7		18.2	62.6	62.6		5.6
Cycle Q Clear(g_c), s	24.5	18.1	6.9	1.4	28.4	11.7		18.2	62.6	62.6		5.6
Prop In Lane	1.00		1.00	1.00		1.00		1.00		0.03		1.00
Lane Grp Cap(c), veh/h	288	662	563	19	380	323		229	734	769		85
V/C Ratio(X)	1.26	0.44	0.19	0.83	0.94	0.43		0.94	1.26	1.26		0.79
Avail Cap(c_a), veh/h	288	662	563	229	402	342		229	734	769		288
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	63.2	37.2	33.6	74.5	59.1	52.5		65.1	44.2	44.2		71.1
Incr Delay (d2), s/veh	140.7	0.2	0.1	26.7	28.0	0.3		43.1	126.7	128.8		6.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
%ile BackOfQ(50%),veh/ln	23.3	9.4	3.0	0.8	17.6	5.1		11.7	56.4	59.5		2.9
LnGrp Delay(d),s/veh	203.9	37.3	33.6	101.2	87.1	52.8		108.2	170.9	173.0		77.1
LnGrp LOS	F	D	C	F	F	D		F	F	F		E
Approach Vol, veh/h		759			512				2110			
Approach Delay, s/veh		116.3			78.2				165.4			
Approach LOS		F			E				F			

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	57.7	30.0	38.2	12.7	70.0	7.1	61.0
Change Period (Y+Rc), s	5.5	7.4	5.5	7.4	5.5	7.4	5.5	* 7.4
Max Green Setting (Gmax), s	19.5	62.6	24.5	32.6	24.5	62.6	19.5	* 33
Max Q Clear Time (g_c+I1), s	20.2	27.1	26.5	30.4	7.6	64.6	3.4	20.1
Green Ext Time (p_c), s	0.0	9.0	0.0	0.4	0.1	0.0	0.0	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	123.3
HCM 2010 LOS	F

Notes

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	643	294
Future Volume (veh/h)	643	294
Number	2	12
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	707	0
Adj No. of Lanes	2	1
Peak Hour Factor	0.91	0.91
Percent Heavy Veh, %	2	2
Cap, veh/h	1180	528
Arrive On Green	0.33	0.00
Sat Flow, veh/h	3539	1583
Grp Volume(v), veh/h	707	0
Grp Sat Flow(s),veh/h/ln	1770	1583
Q Serve(g_s), s	25.1	0.0
Cycle Q Clear(g_c), s	25.1	0.0
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1180	528
V/C Ratio(X)	0.60	0.00
Avail Cap(c_a), veh/h	1468	657
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	41.9	0.0
Incr Delay (d2), s/veh	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.3	0.0
LnGrp Delay(d),s/veh	42.3	0.0
LnGrp LOS	D	
Approach Vol, veh/h	774	
Approach Delay, s/veh	45.3	
Approach LOS	D	
Timer		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	219	21	120	377	7	67	625	128	4	75	47
Future Volume (veh/h)	45	219	21	120	377	7	67	625	128	4	75	47
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	58	281	27	135	424	8	73	679	139	5	88	55
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.78	0.78	0.78	0.89	0.89	0.89	0.92	0.92	0.92	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	72	710	68	172	972	18	93	533	109	64	364	227
Arrive On Green	0.04	0.22	0.22	0.10	0.27	0.27	0.05	0.35	0.35	0.04	0.34	0.34
Sat Flow, veh/h	1774	3266	311	1774	3554	67	1774	1501	307	1774	1073	671
Grp Volume(v), veh/h	58	151	157	135	211	221	73	0	818	5	0	143
Grp Sat Flow(s),veh/h/ln	1774	1770	1808	1774	1770	1851	1774	0	1809	1774	0	1744
Q Serve(g_s), s	1.9	4.2	4.3	4.3	5.7	5.7	2.3	0.0	20.5	0.2	0.0	3.4
Cycle Q Clear(g_c), s	1.9	4.2	4.3	4.3	5.7	5.7	2.3	0.0	20.5	0.2	0.0	3.4
Prop In Lane	1.00		0.17	1.00		0.04	1.00		0.17	1.00		0.38
Lane Grp Cap(c), veh/h	72	385	393	172	484	506	93	0	642	64	0	591
V/C Ratio(X)	0.80	0.39	0.40	0.78	0.44	0.44	0.79	0.00	1.27	0.08	0.00	0.24
Avail Cap(c_a), veh/h	338	1701	1737	338	1701	1779	338	0	642	338	0	619
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.5	19.3	19.4	25.5	17.3	17.3	27.1	0.0	18.6	26.9	0.0	13.7
Incr Delay (d2), s/veh	7.5	0.9	0.9	2.9	0.9	0.8	5.5	0.0	135.3	0.2	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.2	2.2	2.2	2.9	3.0	1.3	0.0	34.1	0.1	0.0	1.8
LnGrp Delay(d),s/veh	34.9	20.3	20.3	28.4	18.2	18.1	32.5	0.0	153.9	27.1	0.0	14.7
LnGrp LOS	C	C	C	C	B	B	C		F	C		B
Approach Vol, veh/h		366			567			891			148	
Approach Delay, s/veh		22.6			20.6			143.9			15.1	
Approach LOS		C			C			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	20.3	7.0	24.1	9.6	17.0	6.1	25.0
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.5
Max Green Setting (Gmax), s	11.0	55.5	11.0	20.5	11.0	55.5	11.0	20.5
Max Q Clear Time (g_c+I1), s	3.9	7.7	4.3	5.4	6.3	6.3	2.2	22.5
Green Ext Time (p_c), s	0.0	6.2	0.0	12.4	0.0	6.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	76.3
HCM 2010 LOS	E

Notes

Intersection	
Int Delay, s/veh	18.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	59	325	4	5	459	1	9	142	31	0	2	12
Future Vol, veh/h	59	325	4	5	459	1	9	142	31	0	2	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	350	-	-	350	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	92	92	92	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	65	357	4	5	499	1	13	203	44	0	3	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	500	0	0	362	0	0	1001	1000	359	1100	1001	499
Stage 1	-	-	-	-	-	-	489	489	-	510	510	-
Stage 2	-	-	-	-	-	-	512	511	-	590	491	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1064	-	-	1197	-	-	222	243	685	190	243	572
Stage 1	-	-	-	-	-	-	561	549	-	546	538	-
Stage 2	-	-	-	-	-	-	545	537	-	494	548	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1064	-	-	1197	-	-	203	227	685	39	227	572
Mov Cap-2 Maneuver	-	-	-	-	-	-	203	227	-	39	227	-
Stage 1	-	-	-	-	-	-	527	515	-	513	536	-
Stage 2	-	-	-	-	-	-	524	535	-	263	515	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.1	80.9	12.9
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	225	685	1064	-	-	1197	-	-	227	572
HCM Lane V/C Ratio	0.959	0.065	0.061	-	-	0.005	-	-	0.013	0.03
HCM Control Delay (s)	95.3	10.6	8.6	-	-	8	-	-	21.1	11.5
HCM Lane LOS	F	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	8.4	0.2	0.2	-	-	0	-	-	0	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	181	3	21	403	293	7	761	16	131	450	114
Future Volume (veh/h)	114	181	3	21	403	293	7	761	16	131	450	114
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	125	199	3	23	433	315	8	855	18	139	479	121
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.91	0.91	0.91	0.93	0.93	0.93	0.89	0.89	0.89	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	147	554	471	29	429	365	37	802	17	162	953	942
Arrive On Green	0.08	0.30	0.30	0.02	0.23	0.23	0.02	0.44	0.44	0.09	0.51	0.51
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	1818	38	1774	1863	1583
Grp Volume(v), veh/h	125	199	3	23	433	315	8	0	873	139	479	121
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	0	1856	1774	1863	1583
Q Serve(g_s), s	10.0	12.1	0.2	1.9	33.2	27.5	0.6	0.0	63.6	11.1	24.4	4.8
Cycle Q Clear(g_c), s	10.0	12.1	0.2	1.9	33.2	27.5	0.6	0.0	63.6	11.1	24.4	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	147	554	471	29	429	365	37	0	819	162	953	942
V/C Ratio(X)	0.85	0.36	0.01	0.80	1.01	0.86	0.22	0.00	1.07	0.86	0.50	0.13
Avail Cap(c_a), veh/h	252	554	471	252	429	365	252	0	819	302	953	942
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.2	39.9	35.7	70.7	55.5	53.3	69.4	0.0	40.3	64.6	23.1	12.8
Incr Delay (d2), s/veh	5.1	0.1	0.0	17.2	45.7	18.1	1.1	0.0	50.5	5.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	6.3	0.1	1.1	22.5	13.9	0.3	0.0	44.0	5.7	12.6	2.1
LnGrp Delay(d),s/veh	70.3	40.0	35.7	87.9	101.2	71.4	70.5	0.0	90.8	69.5	23.3	12.8
LnGrp LOS	E	D	D	F	F	E	E		F	E	C	B
Approach Vol, veh/h		327			771			881			739	
Approach Delay, s/veh		51.5			88.6			90.6			30.3	
Approach LOS		D			F			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	40.0	7.5	80.2	6.8	49.6	17.7	70.0
Change Period (Y+Rc), s	4.5	6.8	4.5	* 6.4	4.5	6.8	4.5	6.4
Max Green Setting (Gmax), s	20.5	33.2	20.5	* 64	20.5	33.2	24.5	63.6
Max Q Clear Time (g_c+I1), s	12.0	35.2	2.6	26.4	3.9	14.1	13.1	65.6
Green Ext Time (p_c), s	0.0	0.0	0.0	5.8	0.0	2.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	68.9
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	283	0	66	695	66	3	353	25	22	261	30
Future Volume (veh/h)	38	283	0	66	695	66	3	353	25	22	261	30
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	43	322	0	74	781	74	3	380	27	25	293	34
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.88	0.88	0.88	0.89	0.89	0.89	0.93	0.93	0.93	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	55	674	0	92	641	61	3	392	28	27	311	36
Arrive On Green	0.03	0.36	0.00	0.05	0.38	0.38	0.23	0.23	0.23	0.21	0.21	0.21
Sat Flow, veh/h	1774	1863	0	1774	1676	159	13	1706	121	130	1519	176
Grp Volume(v), veh/h	43	322	0	74	0	855	410	0	0	352	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1774	0	1835	1841	0	0	1825	0	0
Q Serve(g_s), s	4.0	22.1	0.0	6.8	0.0	63.2	36.5	0.0	0.0	31.4	0.0	0.0
Cycle Q Clear(g_c), s	4.0	22.1	0.0	6.8	0.0	63.2	36.5	0.0	0.0	31.4	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.09	0.01		0.07	0.07		0.10
Lane Grp Cap(c), veh/h	55	674	0	92	0	701	423	0	0	374	0	0
V/C Ratio(X)	0.78	0.48	0.00	0.81	0.00	1.22	0.97	0.00	0.00	0.94	0.00	0.00
Avail Cap(c_a), veh/h	274	716	0	220	0	701	423	0	0	422	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	79.5	40.7	0.0	77.6	0.0	51.1	63.1	0.0	0.0	64.7	0.0	0.0
Incr Delay (d2), s/veh	8.4	0.2	0.0	6.1	0.0	111.3	35.5	0.0	0.0	26.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	11.4	0.0	3.5	0.0	53.6	22.7	0.0	0.0	18.6	0.0	0.0
LnGrp Delay(d),s/veh	87.9	40.9	0.0	83.7	0.0	162.4	98.6	0.0	0.0	91.3	0.0	0.0
LnGrp LOS	F	D		F		F	F			F		
Approach Vol, veh/h		365			929			410			352	
Approach Delay, s/veh		46.5			156.2			98.6			91.3	
Approach LOS		D			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.7	70.0		40.7	13.0	66.6		45.0
Change Period (Y+Rc), s	4.5	6.8		6.8	4.5	* 6.8		7.0
Max Green Setting (Gmax), s	25.5	63.2		38.2	20.5	* 64		38.0
Max Q Clear Time (g_c+I1), s	6.0	65.2		33.4	8.8	24.1		38.5
Green Ext Time (p_c), s	0.0	0.0		0.5	0.0	4.7		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		114.1
HCM 2010 LOS		F

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	200	0	0	519	0	0
Future Volume (veh/h)	200	0	0	519	0	0
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1900	1863	1863	1863
Adj Flow Rate, veh/h	217	0	0	564	0	0
Adj No. of Lanes	1	0	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1176	0	0	1176	15	13
Arrive On Green	0.63	0.00	0.00	0.63	0.00	0.00
Sat Flow, veh/h	1863	0	0	1863	1774	1583
Grp Volume(v), veh/h	217	0	0	564	0	0
Grp Sat Flow(s),veh/h/ln	1863	0	0	1863	1774	1583
Q Serve(g_s), s	0.6	0.0	0.0	2.0	0.0	0.0
Cycle Q Clear(g_c), s	0.6	0.0	0.0	2.0	0.0	0.0
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	1176	0	0	1176	15	13
V/C Ratio(X)	0.18	0.00	0.00	0.48	0.00	0.00
Avail Cap(c_a), veh/h	2747	0	0	2747	727	649
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.9	0.0	0.0	1.2	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	1.0	0.0	0.0
LnGrp Delay(d),s/veh	1.0	0.0	0.0	1.5	0.0	0.0
LnGrp LOS	A			A		
Approach Vol, veh/h	217			564	0	
Approach Delay, s/veh	1.0			1.5	0.0	
Approach LOS	A			A		

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		0.0		12.2				12.2
Change Period (Y+Rc), s		4.5		4.5				4.5
Max Green Setting (Gmax), s		5.0		18.0				18.0
Max Q Clear Time (g_c+I1), s		0.0		2.6				4.0
Green Ext Time (p_c), s		0.0		4.5				4.3

Intersection Summary	
HCM 2010 Ctrl Delay	1.4
HCM 2010 LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	128	9	28	696	348	132
Future Volume (veh/h)	128	9	28	696	348	132
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	160	11	30	740	419	159
Adj No. of Lanes	1	1	1	1	1	0
Peak Hour Factor	0.80	0.80	0.94	0.94	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	210	188	38	1057	516	196
Arrive On Green	0.12	0.12	0.02	0.57	0.40	0.40
Sat Flow, veh/h	1774	1583	1774	1863	1288	489
Grp Volume(v), veh/h	160	11	30	740	0	578
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	0	1777
Q Serve(g_s), s	3.3	0.2	0.6	10.8	0.0	10.9
Cycle Q Clear(g_c), s	3.3	0.2	0.6	10.8	0.0	10.9
Prop In Lane	1.00	1.00	1.00			0.28
Lane Grp Cap(c), veh/h	210	188	38	1057	0	712
V/C Ratio(X)	0.76	0.06	0.79	0.70	0.00	0.81
Avail Cap(c_a), veh/h	1621	1446	984	3147	0	2978
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.2	14.8	18.4	5.9	0.0	10.1
Incr Delay (d2), s/veh	2.1	0.0	12.5	0.3	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.1	0.4	5.4	0.0	5.5
LnGrp Delay(d),s/veh	18.3	14.9	30.9	6.2	0.0	11.0
LnGrp LOS	B	B	C	A		B
Approach Vol, veh/h	171			770	578	
Approach Delay, s/veh	18.1			7.2	11.0	
Approach LOS	B			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.3	21.7				28.0		9.9
Change Period (Y+Rc), s	5.5	* 6.5				* 6.5		5.4
Max Green Setting (Gmax), s	21.0	* 64				* 64		34.6
Max Q Clear Time (g_c+I1), s	2.6	12.9				12.8		5.3
Green Ext Time (p_c), s	0.0	2.2				2.2		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A

Notes

Intersection	
Intersection Delay, s/veh	15.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	13	1	126	0	463	18	21	269	0
Future Vol, veh/h	0	0	0	13	1	126	0	463	18	21	269	0
Peak Hour Factor	0.97	0.97	0.97	0.70	0.70	0.70	0.95	0.95	0.95	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	19	1	180	0	487	19	24	306	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	0	10.8	18.6	12.8
HCM LOS	-	B	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	9%	7%
Vol Thru, %	96%	100%	1%	93%
Vol Right, %	4%	0%	90%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	481	0	140	290
LT Vol	0	0	13	21
Through Vol	463	0	1	269
RT Vol	18	0	126	0
Lane Flow Rate	506	0	200	330
Geometry Grp	1	1	1	1
Degree of Util (X)	0.698	0	0.301	0.475
Departure Headway (Hd)	4.962	6.443	5.424	5.184
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	734	0	662	695
Service Time	2.962	4.505	3.468	3.213
HCM Lane V/C Ratio	0.689	0	0.302	0.475
HCM Control Delay	18.6	9.5	10.8	12.8
HCM Lane LOS	C	N	B	B
HCM 95th-tile Q	5.7	0	1.3	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	694	403	8	0	320	8	7	33	5	3	8	348
Future Volume (veh/h)	694	403	8	0	320	8	7	33	5	3	8	348
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	708	411	0	0	438	11	7	34	5	4	10	414
Adj No. of Lanes	1	1	1	1	1	0	0	1	0	0	1	1
Peak Hour Factor	0.98	0.98	0.98	0.73	0.73	0.73	0.98	0.98	0.98	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	448	1074	913	2	484	12	13	61	9	111	278	736
Arrive On Green	0.25	0.58	0.00	0.00	0.27	0.27	0.05	0.05	0.05	0.21	0.21	0.21
Sat Flow, veh/h	1774	1863	1583	1774	1809	45	275	1336	196	525	1312	1583
Grp Volume(v), veh/h	708	411	0	0	0	449	46	0	0	14	0	414
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1855	1808	0	0	1837	0	1583
Q Serve(g_s), s	24.5	11.6	0.0	0.0	0.0	22.7	2.4	0.0	0.0	0.6	0.0	18.4
Cycle Q Clear(g_c), s	24.5	11.6	0.0	0.0	0.0	22.7	2.4	0.0	0.0	0.6	0.0	18.4
Prop In Lane	1.00		1.00	1.00		0.02	0.15		0.11	0.29		1.00
Lane Grp Cap(c), veh/h	448	1074	913	2	0	496	83	0	0	390	0	736
V/C Ratio(X)	1.58	0.38	0.00	0.00	0.00	0.91	0.55	0.00	0.00	0.04	0.00	0.56
Avail Cap(c_a), veh/h	448	1233	1048	357	0	1224	664	0	0	651	0	962
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.2	11.1	0.0	0.0	0.0	34.3	45.3	0.0	0.0	30.3	0.0	18.8
Incr Delay (d2), s/veh	271.3	0.1	0.0	0.0	0.0	2.6	2.1	0.0	0.0	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	45.7	6.0	0.0	0.0	0.0	12.0	1.3	0.0	0.0	0.3	0.0	8.1
LnGrp Delay(d),s/veh	307.6	11.2	0.0	0.0	0.0	37.0	47.4	0.0	0.0	30.3	0.0	19.1
LnGrp LOS	F	B				D	D			C		B
Approach Vol, veh/h		1119			449			46			428	
Approach Delay, s/veh		198.7			37.0			47.4			19.4	
Approach LOS		F			D			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	30.0	31.9		26.2	0.0	61.9		8.9
Change Period (Y+Rc), s	5.5	6.0		* 5.6	5.5	* 6		4.4
Max Green Setting (Gmax), s	24.5	64.0		* 34	19.5	* 64		35.6
Max Q Clear Time (g_c+I1), s	26.5	24.7		20.4	0.0	13.6		4.4
Green Ext Time (p_c), s	0.0	1.2		0.2	0.0	1.2		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		122.2
HCM 2010 LOS		F

Notes

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	354	197	14	1	29	396	432	7	179	47	148	28
Future Volume (veh/h)	354	197	14	1	29	396	432	7	179	47	148	28
Number	1	6	16		5	2	12	3	8	18	7	4
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		0.98	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900		1863	1863	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	389	216	15		33	450	491	8	195	51	183	35
Adj No. of Lanes	1	2	0		1	1	1	1	1	0	2	1
Peak Hour Factor	0.91	0.91	0.91		0.88	0.88	0.88	0.92	0.92	0.92	0.81	0.81
Percent Heavy Veh, %	2	2	2		2	2	2	2	2	2	2	2
Cap, veh/h	365	1770	122		41	633	526	11	227	59	253	423
Arrive On Green	0.21	0.53	0.53		0.02	0.34	0.34	0.01	0.16	0.16	0.07	0.23
Sat Flow, veh/h	1774	3360	232		1774	1863	1548	1774	1424	373	3442	1863
Grp Volume(v), veh/h	389	113	118		33	450	491	8	0	246	183	35
Grp Sat Flow(s),veh/h/ln	1774	1770	1822		1774	1863	1548	1774	0	1797	1721	1863
Q Serve(g_s), s	19.5	3.1	3.1		1.8	19.9	29.1	0.4	0.0	12.6	4.9	1.4
Cycle Q Clear(g_c), s	19.5	3.1	3.1		1.8	19.9	29.1	0.4	0.0	12.6	4.9	1.4
Prop In Lane	1.00		0.13		1.00		1.00	1.00		0.21	1.00	
Lane Grp Cap(c), veh/h	365	932	960		41	633	526	11	0	287	253	423
V/C Ratio(X)	1.07	0.12	0.12		0.81	0.71	0.93	0.75	0.00	0.86	0.72	0.08
Avail Cap(c_a), veh/h	365	1215	1251		372	1281	1064	365	0	1235	708	1275
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.7	11.3	11.4		46.1	27.2	30.2	47.1	0.0	38.8	43.0	28.9
Incr Delay (d2), s/veh	65.9	0.0	0.0		12.9	0.6	3.4	31.6	0.0	2.9	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.2	1.5	1.5		1.0	10.3	12.9	0.3	0.0	6.5	2.4	0.7
LnGrp Delay(d),s/veh	103.5	11.4	11.4		59.0	27.8	33.7	78.7	0.0	41.7	44.5	28.9
LnGrp LOS	F	B	B		E	C	C	E		D	D	C
Approach Vol, veh/h		620				974			254			304
Approach Delay, s/veh		69.2				31.8			42.9			38.6
Approach LOS		E				C			D			D

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	37.1	6.1	26.6	7.3	54.9	12.5	20.2
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	19.5	* 65	19.5	* 65	* 20	* 65	19.5	* 65
Max Q Clear Time (g_c+I1), s	21.5	31.1	2.4	6.2	3.8	5.1	6.9	14.6
Green Ext Time (p_c), s	0.0	1.2	0.0	0.5	0.0	1.2	0.1	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	44.8
HCM 2010 LOS	D

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	70
Future Volume (veh/h)	70
Number	14
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	86
Adj No. of Lanes	1
Peak Hour Factor	0.81
Percent Heavy Veh, %	2
Cap, veh/h	359
Arrive On Green	0.23
Sat Flow, veh/h	1583
Grp Volume(v), veh/h	86
Grp Sat Flow(s),veh/h/ln	1583
Q Serve(g_s), s	4.2
Cycle Q Clear(g_c), s	4.2
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	359
V/C Ratio(X)	0.24
Avail Cap(c_a), veh/h	1083
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	30.0
Incr Delay (d2), s/veh	0.1
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	1.9
LnGrp Delay(d),s/veh	30.1
LnGrp LOS	C
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (veh/h)	5	187	95	145	3	72	477	66	6	533	1875	122
Future Volume (veh/h)	5	187	95	145	3	72	477	66	6	533	1875	122
Number		7	4	14		3	8	18		5	2	12
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00		1.00		0.99
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863		1863	1863	1863		1863	1863	1863
Adj Flow Rate, veh/h		205	104	159		81	536	74		579	2038	133
Adj No. of Lanes		2	3	1		2	2	1		2	3	1
Peak Hour Factor		0.91	0.91	0.91		0.89	0.89	0.89		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2
Cap, veh/h		270	1107	345		133	629	282		636	2344	721
Arrive On Green		0.08	0.22	0.22		0.04	0.18	0.18		0.18	0.46	0.46
Sat Flow, veh/h		3442	5085	1583		3442	3539	1583		3442	5085	1564
Grp Volume(v), veh/h		205	104	159		81	536	74		579	2038	133
Grp Sat Flow(s),veh/h/ln		1721	1695	1583		1721	1770	1583		1721	1695	1564
Q Serve(g_s), s		6.0	1.7	9.0		2.4	15.1	4.2		17.0	37.2	5.2
Cycle Q Clear(g_c), s		6.0	1.7	9.0		2.4	15.1	4.2		17.0	37.2	5.2
Prop In Lane		1.00		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h		270	1107	345		133	629	282		636	2344	721
V/C Ratio(X)		0.76	0.09	0.46		0.61	0.85	0.26		0.91	0.87	0.18
Avail Cap(c_a), veh/h		651	1643	512		651	1140	510		651	3093	951
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		46.5	32.2	35.1		48.8	41.1	36.5		41.2	25.0	16.4
Incr Delay (d2), s/veh		1.7	0.0	0.4		1.7	1.3	0.2		16.4	1.8	0.0
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		2.9	0.8	3.9		1.2	7.5	1.8		9.5	17.8	2.2
LnGrp Delay(d),s/veh		48.2	32.2	35.4		50.4	42.3	36.7		57.6	26.8	16.4
LnGrp LOS		D	C	D		D	D	D		E	C	B
Approach Vol, veh/h			468				691				2750	
Approach Delay, s/veh			40.3				42.7				32.8	
Approach LOS			D				D				C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	54.9	9.5	29.2	24.5	39.8	13.6	25.1
Change Period (Y+Rc), s	5.5	* 7.4	5.5	* 6.8	5.5	* 7.4	5.5	6.8
Max Green Setting (Gmax), s	19.5	* 63	19.5	* 33	19.5	* 63	19.5	33.2
Max Q Clear Time (g_c+I1), s	4.4	39.2	4.4	11.0	19.0	14.9	8.0	17.1
Green Ext Time (p_c), s	0.0	8.4	0.0	1.2	0.0	9.4	0.1	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	34.4
HCM 2010 LOS	C

Notes

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Volume (veh/h)	3	64	629	66
Future Volume (veh/h)	3	64	629	66
Number		1	6	16
Initial Q (Qb), veh		0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00
Parking Bus, Adj		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863
Adj Flow Rate, veh/h		80	786	82
Adj No. of Lanes		2	3	1
Peak Hour Factor		0.80	0.80	0.80
Percent Heavy Veh, %		2	2	2
Cap, veh/h		132	1600	498
Arrive On Green		0.04	0.31	0.31
Sat Flow, veh/h		3442	5085	1583
Grp Volume(v), veh/h		80	786	82
Grp Sat Flow(s),veh/h/ln		1721	1695	1583
Q Serve(g_s), s		2.4	12.9	3.9
Cycle Q Clear(g_c), s		2.4	12.9	3.9
Prop In Lane		1.00		1.00
Lane Grp Cap(c), veh/h		132	1600	498
V/C Ratio(X)		0.61	0.49	0.16
Avail Cap(c_a), veh/h		651	3088	962
HCM Platoon Ratio		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00
Uniform Delay (d), s/veh		48.8	28.6	25.5
Incr Delay (d2), s/veh		1.7	0.1	0.1
Initial Q Delay(d3),s/veh		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		1.2	6.1	1.7
LnGrp Delay(d),s/veh		50.5	28.7	25.6
LnGrp LOS		D	C	C
Approach Vol, veh/h			948	
Approach Delay, s/veh			30.3	
Approach LOS			C	
Timer				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	243	21	108	487	288	104
Future Volume (veh/h)	243	21	108	487	288	104
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1900
Adj Flow Rate, veh/h	283	24	121	547	335	121
Adj No. of Lanes	0	0	1	1	1	0
Peak Hour Factor	0.86	0.86	0.89	0.89	0.86	0.86
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	343	29	154	972	420	152
Arrive On Green	0.21	0.21	0.09	0.52	0.32	0.32
Sat Flow, veh/h	1615	137	1774	1863	1307	472
Grp Volume(v), veh/h	308	0	121	547	0	456
Grp Sat Flow(s),veh/h/ln	1758	0	1774	1863	0	1779
Q Serve(g_s), s	6.8	0.0	2.7	8.1	0.0	9.5
Cycle Q Clear(g_c), s	6.8	0.0	2.7	8.1	0.0	9.5
Prop In Lane	0.92	0.08	1.00			0.27
Lane Grp Cap(c), veh/h	373	0	154	972	0	572
V/C Ratio(X)	0.83	0.00	0.78	0.56	0.00	0.80
Avail Cap(c_a), veh/h	1529	0	892	2947	0	2802
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.3	0.0	18.2	6.6	0.0	12.6
Incr Delay (d2), s/veh	1.8	0.0	3.3	0.2	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	1.5	4.2	0.0	4.7
LnGrp Delay(d),s/veh	17.1	0.0	21.4	6.8	0.0	13.6
LnGrp LOS	B		C	A		B
Approach Vol, veh/h	308			668	456	
Approach Delay, s/veh	17.1			9.4	13.6	
Approach LOS	B			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.1	19.1				27.3		13.3
Change Period (Y+Rc), s	* 4.6	* 6.1				* 6.1		4.7
Max Green Setting (Gmax), s	* 20	* 64				* 64		35.3
Max Q Clear Time (g_c+I1), s	4.7	11.5				10.1		8.8
Green Ext Time (p_c), s	0.0	1.5				1.5		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	12.4
HCM 2010 LOS	B

Notes

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	2	12	468	196	478	749	23	238	103	464	6	74
Future Volume (veh/h)	2	12	468	196	478	749	23	238	103	464	6	74
Number		1	6	16	5	2	12	3	8	18	7	4
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00	1.00		0.98	1.00		0.98	1.00	
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863
Adj Flow Rate, veh/h		15	571	0	493	772	24	251	407	398	8	92
Adj No. of Lanes		1	2	1	2	2	0	1	1	1	0	2
Peak Hour Factor		0.82	0.82	0.82	0.97	0.97	0.97	0.77	0.77	0.77	0.80	0.80
Percent Heavy Veh, %		2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h		19	821	367	567	1347	42	445	467	651	22	255
Arrive On Green		0.01	0.23	0.00	0.16	0.38	0.38	0.25	0.25	0.25	0.10	0.10
Sat Flow, veh/h		1774	3539	1583	3442	3501	109	1774	1863	1557	218	2524
Grp Volume(v), veh/h		15	571	0	493	390	406	251	407	398	68	0
Grp Sat Flow(s),veh/h/ln		1774	1770	1583	1721	1770	1841	1774	1863	1557	1852	0
Q Serve(g_s), s		0.7	12.1	0.0	11.4	14.2	14.3	10.1	17.1	16.4	2.8	0.0
Cycle Q Clear(g_c), s		0.7	12.1	0.0	11.4	14.2	14.3	10.1	17.1	16.4	2.8	0.0
Prop In Lane		1.00		1.00	1.00		0.06	1.00		1.00	0.12	
Lane Grp Cap(c), veh/h		19	821	367	567	681	708	445	467	651	187	0
V/C Ratio(X)		0.80	0.70	0.00	0.87	0.57	0.57	0.56	0.87	0.61	0.36	0.00
Avail Cap(c_a), veh/h		427	2823	1263	832	1414	1470	754	792	922	780	0
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh		40.4	28.8	0.0	33.3	19.9	19.9	26.8	29.4	18.8	34.3	0.0
Incr Delay (d2), s/veh		24.0	0.4	0.0	4.9	0.3	0.3	0.4	2.6	0.3	0.4	0.0
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		0.5	5.9	0.0	5.8	7.0	7.3	5.0	9.2	7.1	1.5	0.0
LnGrp Delay(d),s/veh		64.4	29.2	0.0	38.2	20.2	20.2	27.2	32.0	19.1	34.8	0.0
LnGrp LOS		E	C		D	C	C	C	C	B	C	
Approach Vol, veh/h			586			1289			1056			128
Approach Delay, s/veh			30.1			27.1			26.0			34.8
Approach LOS			C			C			C			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.2	36.2		13.8	18.7	23.7		25.7
Change Period (Y+Rc), s	* 5.3	* 4.7		5.5	* 5.2	* 4.7		5.2
Max Green Setting (Gmax), s	* 20	* 65		34.5	* 20	* 65		34.8
Max Q Clear Time (g_c+I1), s	2.7	16.3		4.8	13.4	14.1		19.1
Green Ext Time (p_c), s	0.0	2.3		0.1	0.0	2.3		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	27.6
HCM 2010 LOS	C

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	22
Future Volume (veh/h)	22
Number	14
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.94
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1900
Adj Flow Rate, veh/h	28
Adj No. of Lanes	0
Peak Hour Factor	0.80
Percent Heavy Veh, %	2
Cap, veh/h	78
Arrive On Green	0.10
Sat Flow, veh/h	776
Grp Volume(v), veh/h	60
Grp Sat Flow(s),veh/h/ln	1667
Q Serve(g_s), s	2.8
Cycle Q Clear(g_c), s	2.8
Prop In Lane	0.47
Lane Grp Cap(c), veh/h	168
V/C Ratio(X)	0.36
Avail Cap(c_a), veh/h	702
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	34.3
Incr Delay (d2), s/veh	0.5
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	1.3
LnGrp Delay(d),s/veh	34.8
LnGrp LOS	C
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	996	0	300	0	749	528	0	724	278
Future Volume (veh/h)	0	0	0	996	0	300	0	749	528	0	724	278
Number				3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	0	1863	1900	0	1863	1900
Adj Flow Rate, veh/h				754	566	349	0	842	0	0	746	0
Adj No. of Lanes				1	1	0	0	2	0	0	2	0
Peak Hour Factor				0.86	0.86	0.86	0.89	0.89	0.89	0.97	0.97	0.97
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				566	343	211	0	2857	0	0	2857	0
Arrive On Green				0.32	0.32	0.32	0.00	0.81	0.00	0.00	0.81	0.00
Sat Flow, veh/h				1774	1074	662	0	3725	0	0	3725	0
Grp Volume(v), veh/h				754	0	915	0	842	0	0	746	0
Grp Sat Flow(s),veh/h/ln				1774	0	1736	0	1770	0	0	1770	0
Q Serve(g_s), s				35.1	0.0	35.1	0.0	6.6	0.0	0.0	5.7	0.0
Cycle Q Clear(g_c), s				35.1	0.0	35.1	0.0	6.6	0.0	0.0	5.7	0.0
Prop In Lane				1.00		0.38	0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				566	0	554	0	2857	0	0	2857	0
V/C Ratio(X)				1.33	0.00	1.65	0.00	0.29	0.00	0.00	0.26	0.00
Avail Cap(c_a), veh/h				566	0	554	0	2857	0	0	2857	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				37.5	0.0	37.5	0.0	2.7	0.0	0.0	2.6	0.0
Incr Delay (d2), s/veh				161.2	0.0	301.2	0.0	0.3	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				42.5	0.0	63.1	0.0	3.3	0.0	0.0	2.8	0.0
LnGrp Delay(d),s/veh				198.7	0.0	338.7	0.0	2.9	0.0	0.0	2.8	0.0
LnGrp LOS				F		F		A			A	
Approach Vol, veh/h					1669			842			746	
Approach Delay, s/veh					275.4			2.9			2.8	
Approach LOS					F			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		94.5				94.5		40.0
Change Period (Y+Rc), s		* 5				5.0		4.9
Max Green Setting (Gmax), s		* 66				65.0		35.1
Max Q Clear Time (g_c+I1), s		7.7				8.6		37.1
Green Ext Time (p_c), s		3.9				3.9		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		142.5
HCM 2010 LOS		F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	0	1096	0	0	0	0	996	324	0	1473	273
Future Volume (veh/h)	250	0	1096	0	0	0	0	996	324	0	1473	273
Number	7	4	14				1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	175	0	1248				0	1132	0	0	1637	0
Adj No. of Lanes	1	0	2				0	3	0	0	2	1
Peak Hour Factor	0.95	0.95	0.95				0.88	0.88	0.88	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	558	0	993				0	3791	0	0	2638	1180
Arrive On Green	0.31	0.00	0.31				0.00	0.75	0.00	0.00	0.75	0.00
Sat Flow, veh/h	1774	0	3157				0	5421	0	0	3632	1583
Grp Volume(v), veh/h	175	0	1248				0	1132	0	0	1637	0
Grp Sat Flow(s),veh/h/ln	1774	0	1578				0	1695	0	0	1770	1583
Q Serve(g_s), s	8.3	0.0	34.6				0.0	8.0	0.0	0.0	24.1	0.0
Cycle Q Clear(g_c), s	8.3	0.0	34.6				0.0	8.0	0.0	0.0	24.1	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	558	0	993				0	3791	0	0	2638	1180
V/C Ratio(X)	0.31	0.00	1.26				0.00	0.30	0.00	0.00	0.62	0.00
Avail Cap(c_a), veh/h	558	0	993				0	3791	0	0	2638	1180
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	28.7	0.0	37.7				0.0	4.6	0.0	0.0	6.6	0.0
Incr Delay (d2), s/veh	0.1	0.0	123.9				0.0	0.2	0.0	0.0	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.0	32.1				0.0	3.7	0.0	0.0	12.0	0.0
LnGrp Delay(d),s/veh	28.8	0.0	161.6				0.0	4.8	0.0	0.0	7.7	0.0
LnGrp LOS	C		F					A			A	
Approach Vol, veh/h		1423						1132			1637	
Approach Delay, s/veh		145.3						4.8			7.7	
Approach LOS		F						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		87.5		40.0		87.5		
Change Period (Y+Rc), s		* 5		* 5.4		5.0		
Max Green Setting (Gmax), s		* 66		* 35		65.0		
Max Q Clear Time (g_c+I1), s		26.1		36.6		10.0		
Green Ext Time (p_c), s		10.0		0.0		10.3		

Intersection Summary	
HCM 2010 Ctrl Delay	53.6
HCM 2010 LOS	D

Notes

Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (veh/h)	1020	745	18	85	683	269	62
Future Volume (veh/h)	1020	745	18	85	683	269	62
Number	6	16		5	2	3	18
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900		1863	1863	1863	1863
Adj Flow Rate, veh/h	1133	0		99	794	313	72
Adj No. of Lanes	3	0		1	3	2	1
Peak Hour Factor	0.90	0.90		0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2		2	2	2	2
Cap, veh/h	3210	0		127	3916	405	186
Arrive On Green	0.63	0.00		0.07	0.77	0.12	0.12
Sat Flow, veh/h	5421	0		1774	5253	3442	1583
Grp Volume(v), veh/h	1133	0		99	794	313	72
Grp Sat Flow(s),veh/h/ln	1695	0		1774	1695	1721	1583
Q Serve(g_s), s	8.0	0.0		4.2	3.2	6.7	3.2
Cycle Q Clear(g_c), s	8.0	0.0		4.2	3.2	6.7	3.2
Prop In Lane		0.00		1.00		1.00	1.00
Lane Grp Cap(c), veh/h	3210	0		127	3916	405	186
V/C Ratio(X)	0.35	0.00		0.78	0.20	0.77	0.39
Avail Cap(c_a), veh/h	4369	0		467	4369	1660	764
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.6	0.0		34.5	2.4	32.4	30.9
Incr Delay (d2), s/veh	0.1	0.0		3.9	0.1	1.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0		2.2	1.5	3.2	1.4
LnGrp Delay(d),s/veh	6.8	0.0		38.4	2.4	33.6	31.3
LnGrp LOS	A			D	A	C	C
Approach Vol, veh/h	1133				893	385	
Approach Delay, s/veh	6.8				6.4	33.2	
Approach LOS	A				A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		63.3			10.5	52.8		12.4
Change Period (Y+Rc), s		5.0			* 5.1	5.0		3.5
Max Green Setting (Gmax), s		65.0			* 20	65.0		36.5
Max Q Clear Time (g_c+I1), s		5.2			6.2	10.0		8.7
Green Ext Time (p_c), s		39.9			0.0	37.8		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	10.8
HCM 2010 LOS	B

Notes

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (veh/h)	10	91	392	96	16	101	389	202	19	291	901	116
Future Volume (veh/h)	10	91	392	96	16	101	389	202	19	291	901	116
Number		3	8	18		7	4	14		1	6	16
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.98		1.00		0.98		1.00		1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1900		1863	1863	1863		1863	1863	1863
Adj Flow Rate, veh/h		101	436	107		109	418	217		303	939	121
Adj No. of Lanes		2	3	0		2	3	1		2	3	1
Peak Hour Factor		0.90	0.90	0.90		0.93	0.93	0.93		0.96	0.96	0.96
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2
Cap, veh/h		172	807	192		183	1020	312		598	1716	533
Arrive On Green		0.05	0.20	0.20		0.05	0.20	0.20		0.17	0.34	0.34
Sat Flow, veh/h		3442	4092	971		3442	5085	1556		3442	5085	1579
Grp Volume(v), veh/h		101	359	184		109	418	217		303	939	121
Grp Sat Flow(s),veh/h/ln		1721	1695	1673		1721	1695	1556		1721	1695	1579
Q Serve(g_s), s		2.0	6.5	6.8		2.1	4.9	8.9		5.5	10.3	3.8
Cycle Q Clear(g_c), s		2.0	6.5	6.8		2.1	4.9	8.9		5.5	10.3	3.8
Prop In Lane		1.00		0.58		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h		172	669	330		183	1020	312		598	1716	533
V/C Ratio(X)		0.59	0.54	0.56		0.60	0.41	0.70		0.51	0.55	0.23
Avail Cap(c_a), veh/h		974	1683	831		974	2525	772		974	4754	1476
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		32.0	24.8	24.9		31.9	24.0	25.6		25.8	18.5	16.4
Incr Delay (d2), s/veh		1.2	0.2	0.6		1.2	0.1	1.0		0.2	0.1	0.1
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		1.0	3.1	3.2		1.0	2.3	3.9		2.6	4.8	1.6
LnGrp Delay(d),s/veh		33.2	25.1	25.5		33.0	24.1	26.6		26.0	18.6	16.5
LnGrp LOS		C	C	C		C	C	C		C	B	B
Approach Vol, veh/h			644				744				1363	
Approach Delay, s/veh			26.5				26.1				20.1	
Approach LOS			C				C				C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.5	22.9	8.9	19.6	11.5	28.8	9.2	19.4
Change Period (Y+Rc), s	5.5	* 5.6	5.5	5.8	5.5	* 5.6	5.5	5.8
Max Green Setting (Gmax), s	19.5	* 64	19.5	34.2	19.5	* 64	19.5	34.2
Max Q Clear Time (g_c+I1), s	7.5	12.5	4.0	10.9	6.0	12.3	4.1	8.8
Green Ext Time (p_c), s	0.2	4.3	0.0	2.1	0.1	4.3	0.0	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	23.7
HCM 2010 LOS	C

Notes

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Volume (veh/h)	5	177	410	227
Future Volume (veh/h)	5	177	410	227
Number		5	2	12
Initial Q (Qb), veh		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.99
Parking Bus, Adj		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1900
Adj Flow Rate, veh/h		206	477	264
Adj No. of Lanes		2	3	0
Peak Hour Factor		0.86	0.86	0.86
Percent Heavy Veh, %		2	2	2
Cap, veh/h		299	850	391
Arrive On Green		0.09	0.25	0.25
Sat Flow, veh/h		3442	3390	1561
Grp Volume(v), veh/h		206	477	264
Grp Sat Flow(s),veh/h/ln		1721	1695	1561
Q Serve(g_s), s		4.0	8.5	10.5
Cycle Q Clear(g_c), s		4.0	8.5	10.5
Prop In Lane		1.00		1.00
Lane Grp Cap(c), veh/h		299	850	391
V/C Ratio(X)		0.69	0.56	0.67
Avail Cap(c_a), veh/h		974	3170	1459
HCM Platoon Ratio		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00
Uniform Delay (d), s/veh		30.5	22.5	23.3
Incr Delay (d2), s/veh		1.1	0.2	0.8
Initial Q Delay(d3),s/veh		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		1.9	4.0	4.6
LnGrp Delay(d),s/veh		31.6	22.7	24.0
LnGrp LOS		C	C	C
Approach Vol, veh/h			947	
Approach Delay, s/veh			25.0	
Approach LOS			C	
Timer				

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (veh/h)	3	219	95	10	1	36	116	233	3	53	1076	34
Future Volume (veh/h)	3	219	95	10	1	36	116	233	3	53	1076	34
Number		3	8	18		7	4	14		1	6	16
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.97		1.00		0.97		1.00		0.99
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1900		1863	1863	1863		1863	1863	1900
Adj Flow Rate, veh/h		255	110	12		37	120	240		62	1266	40
Adj No. of Lanes		2	3	0		2	1	2		2	3	0
Peak Hour Factor		0.86	0.86	0.86		0.97	0.97	0.97		0.85	0.85	0.85
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2
Cap, veh/h		316	1019	107		69	272	1153		106	1685	53
Arrive On Green		0.09	0.22	0.22		0.02	0.15	0.15		0.03	0.33	0.33
Sat Flow, veh/h		3442	4659	491		3548	1863	3060		3442	5063	160
Grp Volume(v), veh/h		255	79	43		37	120	240		62	848	458
Grp Sat Flow(s),veh/h/ln		1721	1695	1760		1774	1863	1530		1721	1695	1833
Q Serve(g_s), s		8.0	2.1	2.2		1.1	6.5	5.9		2.0	24.5	24.5
Cycle Q Clear(g_c), s		8.0	2.1	2.2		1.1	6.5	5.9		2.0	24.5	24.5
Prop In Lane		1.00		0.28		1.00		1.00		1.00		0.09
Lane Grp Cap(c), veh/h		316	742	385		69	272	1153		106	1128	610
V/C Ratio(X)		0.81	0.11	0.11		0.54	0.44	0.21		0.59	0.75	0.75
Avail Cap(c_a), veh/h		610	1972	1024		629	1092	2499		610	2000	1081
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		49.0	34.4	34.4		53.5	42.9	23.8		52.6	32.6	32.6
Incr Delay (d2), s/veh		1.9	0.0	0.0		2.4	0.4	0.0		1.9	0.4	0.7
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		3.9	1.0	1.1		0.6	3.4	2.5		1.0	11.5	12.5
LnGrp Delay(d),s/veh		50.8	34.4	34.5		55.9	43.3	23.8		54.5	33.0	33.4
LnGrp LOS		D	C	C		E	D	C		D	C	C
Approach Vol, veh/h			377				397				1368	
Approach Delay, s/veh			45.5				32.7				34.1	
Approach LOS			D				C				C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	63.4	15.6	22.1	30.0	42.3	7.6	30.1
Change Period (Y+Rc), s	5.5	* 5.7	5.5	* 6	5.5	* 5.7	5.5	* 6
Max Green Setting (Gmax), s	19.5	* 64	19.5	* 65	24.5	* 65	19.5	* 64
Max Q Clear Time (g_c+I1), s	4.0	48.6	10.0	8.5	24.7	26.5	3.1	4.2
Green Ext Time (p_c), s	0.0	7.7	0.1	0.6	0.0	10.1	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	33.9
HCM 2010 LOS	C

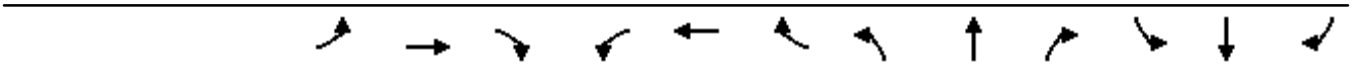
Notes

Movement	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (veh/h)	685	1359	696
Future Volume (veh/h)	685	1359	696
Number	5	2	12
Initial Q (Qb), veh	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863
Adj Flow Rate, veh/h	721	1431	733
Adj No. of Lanes	2	3	1
Peak Hour Factor	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2
Cap, veh/h	766	2669	816
Arrive On Green	0.22	0.52	0.52
Sat Flow, veh/h	3442	5085	1556
Grp Volume(v), veh/h	721	1431	733
Grp Sat Flow(s),veh/h/ln	1721	1695	1556
Q Serve(g_s), s	22.7	20.5	46.6
Cycle Q Clear(g_c), s	22.7	20.5	46.6
Prop In Lane	1.00		1.00
Lane Grp Cap(c), veh/h	766	2669	816
V/C Ratio(X)	0.94	0.54	0.90
Avail Cap(c_a), veh/h	766	2972	909
HCM Platoon Ratio	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.0	17.3	23.5
Incr Delay (d2), s/veh	19.3	0.1	10.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.9	9.6	22.1
LnGrp Delay(d),s/veh	61.3	17.3	33.7
LnGrp LOS	E	B	C
Approach Vol, veh/h		2885	
Approach Delay, s/veh		32.5	
Approach LOS		C	
Timer			

Movement	EBL2	EBL	EBT	EBR	WBR	WBR2	NBT	NBR	NBR2	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	345	1	913	1110	132	32	1179	457	11	1588	202
Future Volume (vph)	345	1	913	1110	132	32	1179	457	11	1588	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8	6.8	6.8	4.6		4.6			4.6	4.0
Lane Util. Factor		0.91	0.86	0.91	0.88		0.86			0.95	1.00
Frpb, ped/bikes		1.00	0.99	0.98	1.00		0.99			1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt		1.00	0.95	0.85	0.85		0.96			1.00	0.85
Flt Protected		0.95	1.00	1.00	1.00		1.00			1.00	1.00
Satd. Flow (prot)		1610	3022	1417	2787		6095			3539	1545
Flt Permitted		0.95	1.00	1.00	1.00		1.00			1.00	1.00
Satd. Flow (perm)		1610	3022	1417	2787		6095			3539	1545
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.93	0.93	0.93	0.85	0.85
Adj. Flow (vph)	388	1	1026	1247	148	36	1268	491	12	1868	238
RTOR Reduction (vph)	0	0	5	9	16	0	0	0	0	0	0
Lane Group Flow (vph)	0	389	1557	702	168	0	1771	0	0	1868	238
Confl. Peds. (#/hr)	6	6		6	3	3		3	3		6
Confl. Bikes (#/hr)								2	2		3
Turn Type	Split	Split	NA	Perm	Prot		NA			NA	Free
Protected Phases	4	4	4		2!		6!			2	
Permitted Phases				4	2						Free
Actuated Green, G (s)		48.2	48.2	48.2	65.4		65.4			65.4	125.0
Effective Green, g (s)		48.2	48.2	48.2	65.4		65.4			65.4	125.0
Actuated g/C Ratio		0.39	0.39	0.39	0.52		0.52			0.52	1.00
Clearance Time (s)		6.8	6.8	6.8	4.6		4.6			4.6	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.0			1.0	
Lane Grp Cap (vph)		620	1165	546	1458		3188			1851	1545
v/s Ratio Prot		0.24	c0.52		0.06		0.29			c0.53	
v/s Ratio Perm				0.50							0.15
v/c Ratio		0.63	1.34	1.29	0.12		0.56			1.01	0.15
Uniform Delay, d1		31.1	38.4	38.4	15.1		20.0			29.8	0.0
Progression Factor		1.00	1.00	1.00	1.00		1.00			1.07	1.00
Incremental Delay, d2		1.4	157.4	142.3	0.2		0.7			20.9	0.2
Delay (s)		32.6	195.8	180.7	15.3		20.7			52.7	0.2
Level of Service		C	F	F	B		C			D	A
Approach Delay (s)			167.9				20.7			46.8	
Approach LOS			F				C			D	

Intersection Summary			
HCM 2000 Control Delay	87.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	99.9%	ICU Level of Service	F
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	1000	0	161	0	928	725	0	800	346
Future Volume (veh/h)	0	0	0	1000	0	161	0	928	725	0	800	346
Number				3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h				1099	0	177	0	987	0	0	851	0
Adj No. of Lanes				2	0	1	0	3	2	0	2	1
Peak Hour Factor				0.91	0.91	0.91	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				1153	0	530	0	2918	1599	0	2031	909
Arrive On Green				0.33	0.00	0.33	0.00	0.57	0.00	0.00	0.57	0.00
Sat Flow, veh/h				3442	0	1583	0	5253	2787	0	3632	1583
Grp Volume(v), veh/h				1099	0	177	0	987	0	0	851	0
Grp Sat Flow(s),veh/h/ln				1721	0	1583	0	1695	1393	0	1770	1583
Q Serve(g_s), s				39.0	0.0	10.5	0.0	12.8	0.0	0.0	16.9	0.0
Cycle Q Clear(g_c), s				39.0	0.0	10.5	0.0	12.8	0.0	0.0	16.9	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				1153	0	530	0	2918	1599	0	2031	909
V/C Ratio(X)				0.95	0.00	0.33	0.00	0.34	0.00	0.00	0.42	0.00
Avail Cap(c_a), veh/h				1327	0	611	0	2918	1599	0	2031	909
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				40.6	0.0	31.1	0.0	14.1	0.0	0.0	14.9	0.0
Incr Delay (d2), s/veh				13.3	0.0	0.1	0.0	0.3	0.0	0.0	0.6	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				20.6	0.0	4.6	0.0	6.0	0.0	0.0	8.3	0.0
LnGrp Delay(d),s/veh				54.0	0.0	31.3	0.0	14.4	0.0	0.0	15.6	0.0
LnGrp LOS				D		C		B			B	
Approach Vol, veh/h					1276			987			851	
Approach Delay, s/veh					50.8			14.4			15.6	
Approach LOS					D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		76.3				76.3		48.7
Change Period (Y+Rc), s		4.6				4.6		6.8
Max Green Setting (Gmax), s		65.4				65.4		48.2
Max Q Clear Time (g_c+I1), s		18.9				14.8		41.0
Green Ext Time (p_c), s		5.0				5.0		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	29.6
HCM 2010 LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (veh/h)	45	110	168	82	1	149	301	139	42	319	1421	110
Future Volume (veh/h)	45	110	168	82	1	149	301	139	42	319	1421	110
Number		3	8	18		7	4	14		1	6	16
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.98		1.00		0.99		1.00		0.99
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1676	1676	1676		1676	1676	1676		1676	1676	1676
Adj Flow Rate, veh/h		118	181	88		159	320	148		347	1545	120
Adj No. of Lanes		2	2	1		2	3	1		2	3	1
Peak Hour Factor		0.93	0.93	0.93		0.94	0.94	0.94		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2
Cap, veh/h		163	519	228		205	809	251		391	2299	706
Arrive On Green		0.05	0.16	0.16		0.07	0.18	0.18		0.13	0.50	0.50
Sat Flow, veh/h		3097	3185	1397		3097	4577	1418		3097	4577	1406
Grp Volume(v), veh/h		118	181	88		159	320	148		347	1545	120
Grp Sat Flow(s),veh/h/ln		1549	1593	1397		1549	1526	1418		1549	1526	1406
Q Serve(g_s), s		4.9	6.6	7.3		6.6	8.1	12.5		14.4	33.0	6.1
Cycle Q Clear(g_c), s		4.9	6.6	7.3		6.6	8.1	12.5		14.4	33.0	6.1
Prop In Lane		1.00		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h		163	519	228		205	809	251		391	2299	706
V/C Ratio(X)		0.73	0.35	0.39		0.78	0.40	0.59		0.89	0.67	0.17
Avail Cap(c_a), veh/h		464	1565	686		464	1195	370		464	2299	706
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		60.8	48.4	48.7		59.9	47.5	49.3		56.0	24.3	17.6
Incr Delay (d2), s/veh		2.3	0.8	2.2		2.4	1.1	7.4		15.0	1.0	0.2
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		2.1	2.9	3.0		2.9	3.5	5.4		7.0	14.1	2.4
LnGrp Delay(d),s/veh		63.1	49.2	50.9		62.2	48.5	56.7		71.0	25.4	17.9
LnGrp LOS		E	D	D		E	D	E		E	C	B
Approach Vol, veh/h			387				627				2012	
Approach Delay, s/veh			53.8				53.9				32.8	
Approach LOS			D				D				C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	66.9	12.3	29.0	17.7	71.2	14.1	27.2
Change Period (Y+Rc), s	5.5	* 5.8	5.5	6.0	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	19.5	* 64	19.5	34.0	19.5	* 64	19.5	64.0
Max Q Clear Time (g_c+I1), s	16.4	25.3	6.9	14.5	12.1	35.0	8.6	9.3
Green Ext Time (p_c), s	0.1	35.8	0.1	7.8	0.1	28.3	0.1	11.1

Intersection Summary	
HCM 2010 Ctrl Delay	36.4
HCM 2010 LOS	D

Notes

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Volume (veh/h)	21	224	1009	326
Future Volume (veh/h)	21	224	1009	326
Number		5	2	12
Initial Q (Qb), veh		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.99
Parking Bus, Adj		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1676	1676	1676
Adj Flow Rate, veh/h		243	1097	354
Adj No. of Lanes		2	3	1
Peak Hour Factor		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2
Cap, veh/h		289	2148	659
Arrive On Green		0.09	0.47	0.47
Sat Flow, veh/h		3097	4577	1404
Grp Volume(v), veh/h		243	1097	354
Grp Sat Flow(s),veh/h/ln		1549	1526	1404
Q Serve(g_s), s		10.1	21.8	23.3
Cycle Q Clear(g_c), s		10.1	21.8	23.3
Prop In Lane		1.00		1.00
Lane Grp Cap(c), veh/h		289	2148	659
V/C Ratio(X)		0.84	0.51	0.54
Avail Cap(c_a), veh/h		464	2256	692
HCM Platoon Ratio		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00
Uniform Delay (d), s/veh		58.1	24.1	24.5
Incr Delay (d2), s/veh		3.9	0.4	1.4
Initial Q Delay(d3),s/veh		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		4.5	9.2	9.2
LnGrp Delay(d),s/veh		62.0	24.5	26.0
LnGrp LOS		E	C	C
Approach Vol, veh/h			1694	
Approach Delay, s/veh			30.2	
Approach LOS			C	
Timer				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	194	143	73	333	284	166	1	81	1402	125	226	2178
Future Volume (veh/h)	194	143	73	333	284	166	1	81	1402	125	226	2178
Number	3	8	18	7	4	14		1	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97		1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	204	151	77	383	354	172		85	1476	132	246	2367
Adj No. of Lanes	2	2	1	2	2	1		2	4	1	2	3
Peak Hour Factor	0.95	0.95	0.95	0.87	0.87	0.87		0.95	0.95	0.95	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2
Cap, veh/h	256	559	244	435	768	315		133	2941	725	297	2577
Arrive On Green	0.07	0.16	0.16	0.12	0.21	0.21		0.04	0.46	0.46	0.09	0.51
Sat Flow, veh/h	3442	3539	1544	3548	3725	1529		3442	6408	1579	3442	5085
Grp Volume(v), veh/h	204	151	77	383	354	172		85	1476	132	246	2367
Grp Sat Flow(s),veh/h/ln	1721	1770	1544	1774	1863	1529		1721	1602	1579	1721	1695
Q Serve(g_s), s	7.6	4.9	5.8	13.9	10.9	13.2		3.2	21.2	6.5	9.2	56.2
Cycle Q Clear(g_c), s	7.6	4.9	5.8	13.9	10.9	13.2		3.2	21.2	6.5	9.2	56.2
Prop In Lane	1.00		1.00	1.00		1.00		1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	256	559	244	435	768	315		133	2941	725	297	2577
V/C Ratio(X)	0.80	0.27	0.32	0.88	0.46	0.55		0.64	0.50	0.18	0.83	0.92
Avail Cap(c_a), veh/h	513	922	402	528	967	397		513	3142	774	513	2577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.6	48.5	48.8	56.5	45.6	46.5		62.0	24.9	20.9	58.8	29.8
Incr Delay (d2), s/veh	2.2	0.4	1.1	12.3	0.7	2.5		3.1	0.1	0.1	2.3	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	2.4	2.5	7.6	5.7	5.8		1.6	9.3	2.8	4.5	27.5
LnGrp Delay(d),s/veh	61.8	48.9	49.9	68.8	46.3	49.0		65.1	25.0	21.0	61.1	35.9
LnGrp LOS	E	D	D	E	D	D		E	C	C	E	D
Approach Vol, veh/h		432			909				1693			2931
Approach Delay, s/veh		55.2			56.3				26.7			36.4
Approach LOS		E			E				C			D

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	72.1	15.2	33.0	16.8	65.9	21.5	26.7
Change Period (Y+Rc), s	5.5	* 5.8	5.5	6.0	5.5	* 5.8	5.5	* 6
Max Green Setting (Gmax), s	19.5	* 64	19.5	34.0	19.5	* 64	19.5	* 34
Max Q Clear Time (g_c+I1), s	5.2	58.2	9.6	15.2	11.2	23.2	15.9	7.8
Green Ext Time (p_c), s	0.1	6.1	0.1	6.3	0.1	36.9	0.1	7.2

Intersection Summary	
HCM 2010 Ctrl Delay	38.0
HCM 2010 LOS	D

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	293
Future Volume (veh/h)	293
Number	12
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.99
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	318
Adj No. of Lanes	1
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	795
Arrive On Green	0.51
Sat Flow, veh/h	1569
Grp Volume(v), veh/h	318
Grp Sat Flow(s),veh/h/ln	1569
Q Serve(g_s), s	16.4
Cycle Q Clear(g_c), s	16.4
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	795
V/C Ratio(X)	0.40
Avail Cap(c_a), veh/h	795
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	20.0
Incr Delay (d2), s/veh	0.7
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	7.3
LnGrp Delay(d),s/veh	20.6
LnGrp LOS	C
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1222	0	531	0	0	0	0	1348	537	0	2121	441
Future Volume (veh/h)	1222	0	531	0	0	0	0	1348	537	0	2121	441
Number	7	4	14				1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	1300	0	565				0	1404	0	0	2233	0
Adj No. of Lanes	3	0	2				0	4	1	0	3	1
Peak Hour Factor	0.94	0.94	0.94				0.96	0.96	0.96	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	2				0	2	2	0	2	2
Cap, veh/h	1404	0	782				0	4588	975	0	3441	975
Arrive On Green	0.28	0.00	0.28				0.00	0.62	0.00	0.00	0.62	0.00
Sat Flow, veh/h	5003	0	2787				0	7451	1583	0	5588	1583
Grp Volume(v), veh/h	1300	0	565				0	1404	0	0	2233	0
Grp Sat Flow(s),veh/h/ln	1668	0	1393				0	1863	1583	0	1863	1583
Q Serve(g_s), s	27.8	0.0	20.1				0.0	9.8	0.0	0.0	28.1	0.0
Cycle Q Clear(g_c), s	27.8	0.0	20.1				0.0	9.8	0.0	0.0	28.1	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	1404	0	782				0	4588	975	0	3441	975
V/C Ratio(X)	0.93	0.00	0.72				0.00	0.31	0.00	0.00	0.65	0.00
Avail Cap(c_a), veh/h	1514	0	844				0	4588	975	0	3441	975
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	38.5	0.0	35.7				0.0	10.0	0.0	0.0	13.5	0.0
Incr Delay (d2), s/veh	9.3	0.0	2.3				0.0	0.2	0.0	0.0	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.0	0.0	8.0				0.0	5.0	0.0	0.0	14.6	0.0
LnGrp Delay(d),s/veh	47.7	0.0	38.0				0.0	10.2	0.0	0.0	14.5	0.0
LnGrp LOS	D		D					B			B	
Approach Vol, veh/h		1865						1404			2233	
Approach Delay, s/veh		44.8						10.2			14.5	
Approach LOS		D						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		72.4		37.6		72.4		
Change Period (Y+Rc), s		* 4.7		6.7		4.7		
Max Green Setting (Gmax), s		* 66		33.3		65.3		
Max Q Clear Time (g_c+I1), s		30.1		29.8		11.8		
Green Ext Time (p_c), s		16.0		1.1		18.1		

Intersection Summary	
HCM 2010 Ctrl Delay	23.7
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	435	0	427	0	2280	262	0	2137	1520
Future Volume (veh/h)	0	0	0	435	0	427	0	2280	262	0	2137	1520
Number				3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h				478	0	469	0	2375	0	0	2181	0
Adj No. of Lanes				2	0	2	0	3	1	0	3	2
Peak Hour Factor				0.91	0.91	0.91	0.96	0.96	0.96	0.98	0.98	0.98
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				651	0	527	0	3921	1111	0	3568	1955
Arrive On Green				0.19	0.00	0.19	0.00	0.70	0.00	0.00	0.70	0.00
Sat Flow, veh/h				3442	0	2787	0	5588	1583	0	5253	2787
Grp Volume(v), veh/h				478	0	469	0	2375	0	0	2181	0
Grp Sat Flow(s),veh/h/ln				1721	0	1393	0	1863	1583	0	1695	1393
Q Serve(g_s), s				14.4	0.0	18.0	0.0	24.3	0.0	0.0	24.6	0.0
Cycle Q Clear(g_c), s				14.4	0.0	18.0	0.0	24.3	0.0	0.0	24.6	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				651	0	527	0	3921	1111	0	3568	1955
V/C Ratio(X)				0.73	0.00	0.89	0.00	0.61	0.00	0.00	0.61	0.00
Avail Cap(c_a), veh/h				1032	0	836	0	3921	1111	0	3568	1955
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				42.0	0.0	43.5	0.0	8.5	0.0	0.0	8.6	0.0
Incr Delay (d2), s/veh				0.6	0.0	4.8	0.0	0.7	0.0	0.0	0.8	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.9	0.0	7.3	0.0	12.6	0.0	0.0	11.6	0.0
LnGrp Delay(d),s/veh				42.6	0.0	48.3	0.0	9.2	0.0	0.0	9.4	0.0
LnGrp LOS				D		D		A			A	
Approach Vol, veh/h					947			2375			2181	
Approach Delay, s/veh					45.4			9.2			9.4	
Approach LOS					D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		82.2				82.2		27.8
Change Period (Y+Rc), s		* 5				5.0		7.0
Max Green Setting (Gmax), s		* 65				65.0		33.0
Max Q Clear Time (g_c+I1), s		26.6				26.3		20.0
Green Ext Time (p_c), s		24.3				24.4		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	15.5
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	112	13	245	34	25	39	34	272	2440	20	36	3317
Future Volume (veh/h)	112	13	245	34	25	39	34	272	2440	20	36	3317
Number	7	4	14	3	8	18		1	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00		1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1900		1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	129	118	213	43	32	49		280	2515	21	39	3567
Adj No. of Lanes	0	1	1	1	1	0		2	3	0	1	3
Peak Hour Factor	0.87	0.87	0.87	0.79	0.79	0.79		0.97	0.97	0.97	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2
Cap, veh/h	151	138	251	119	44	68		333	3032	25	50	2604
Arrive On Green	0.16	0.16	0.16	0.07	0.07	0.07		0.10	0.58	0.58	0.03	0.51
Sat Flow, veh/h	948	867	1571	1774	663	1015		3442	5202	43	1774	5085
Grp Volume(v), veh/h	247	0	213	43	0	81		280	1638	898	39	3567
Grp Sat Flow(s),veh/h/ln	1815	0	1571	1774	0	1678		1721	1695	1855	1774	1695
Q Serve(g_s), s	16.9	0.0	16.8	3.0	0.0	6.0		10.2	49.6	49.9	2.8	65.2
Cycle Q Clear(g_c), s	16.9	0.0	16.8	3.0	0.0	6.0		10.2	49.6	49.9	2.8	65.2
Prop In Lane	0.52		1.00	1.00		0.60		1.00		0.02	1.00	
Lane Grp Cap(c), veh/h	289	0	251	119	0	112		333	1976	1081	50	2604
V/C Ratio(X)	0.85	0.00	0.85	0.36	0.00	0.72		0.84	0.83	0.83	0.78	1.37
Avail Cap(c_a), veh/h	492	0	426	481	0	455		538	1976	1081	281	2604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.1	0.0	52.0	56.8	0.0	58.2		56.6	21.4	21.5	61.5	31.1
Incr Delay (d2), s/veh	2.9	0.0	3.1	0.7	0.0	3.2		3.2	2.9	5.3	9.4	169.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	0.0	7.5	1.5	0.0	2.9		5.0	23.8	27.0	1.5	71.1
LnGrp Delay(d),s/veh	55.0	0.0	55.2	57.5	0.0	61.5		59.8	24.3	26.7	70.9	200.0
LnGrp LOS	D		E	E		E		E	C	C	E	F
Approach Vol, veh/h		460			124				2816			3691
Approach Delay, s/veh		55.1			60.1				28.6			194.4
Approach LOS		E			E				C			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.4	70.1		25.8	8.4	79.1		14.0
Change Period (Y+Rc), s	* 5.1	* 4.9		5.5	* 4.8	* 4.9		5.5
Max Green Setting (Gmax), s	* 20	* 65		34.5	* 20	* 65		34.5
Max Q Clear Time (g_c+I1), s	12.2	67.2		18.9	4.8	51.9		8.0
Green Ext Time (p_c), s	0.1	0.0		0.6	0.0	12.7		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	117.2
HCM 2010 LOS	F

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	79
Future Volume (veh/h)	79
Number	12
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.97
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	85
Adj No. of Lanes	1
Peak Hour Factor	0.93
Percent Heavy Veh, %	2
Cap, veh/h	790
Arrive On Green	0.51
Sat Flow, veh/h	1543
Grp Volume(v), veh/h	85
Grp Sat Flow(s),veh/h/ln	1543
Q Serve(g_s), s	3.6
Cycle Q Clear(g_c), s	3.6
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	790
V/C Ratio(X)	0.11
Avail Cap(c_a), veh/h	790
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	16.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	1.5
LnGrp Delay(d),s/veh	16.1
LnGrp LOS	B
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	36	3	10	779	1	414	338
Future Volume (veh/h)	36	3	10	779	1	414	338
Number	7	14	1	6		2	12
Initial Q (Qb), veh	0	0	0	0		0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00				1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00		1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863		1863	1863
Adj Flow Rate, veh/h	44	4	11	895		445	363
Adj No. of Lanes	2	1	1	2		2	1
Peak Hour Factor	0.81	0.81	0.87	0.87		0.93	0.93
Percent Heavy Veh, %	2	2	2	2		2	2
Cap, veh/h	114	66	16	1929		1235	605
Arrive On Green	0.03	0.03	0.01	0.54		0.35	0.35
Sat Flow, veh/h	3442	1583	1774	3632		3632	1583
Grp Volume(v), veh/h	44	4	11	895		445	363
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1770		1770	1583
Q Serve(g_s), s	0.4	0.1	0.2	4.5		2.8	5.4
Cycle Q Clear(g_c), s	0.4	0.1	0.2	4.5		2.8	5.4
Prop In Lane	1.00	1.00	1.00				1.00
Lane Grp Cap(c), veh/h	114	66	16	1929		1235	605
V/C Ratio(X)	0.39	0.06	0.71	0.46		0.36	0.60
Avail Cap(c_a), veh/h	6383	2950	1177	6432		6396	2914
HCM Platoon Ratio	1.00	1.00	1.00	1.00		1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00		1.00	1.00
Uniform Delay (d), s/veh	13.9	13.5	14.5	4.1		7.1	7.3
Incr Delay (d2), s/veh	0.8	0.1	19.5	0.1		0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.1	0.2	2.1		1.3	2.5
LnGrp Delay(d),s/veh	14.7	13.7	34.0	4.1		7.2	7.6
LnGrp LOS	B	B	C	A		A	A
Approach Vol, veh/h	48			906		808	
Approach Delay, s/veh	14.6			4.5		7.4	
Approach LOS	B			A		A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	5.8	17.2		6.5		22.9		
Change Period (Y+Rc), s	5.5	* 6.9		5.5		* 6.9		
Max Green Setting (Gmax), s	19.5	* 53		54.5		* 53		
Max Q Clear Time (g_c+I1), s	2.2	7.4		2.4		6.5		
Green Ext Time (p_c), s	0.0	2.9		0.0		2.9		

Intersection Summary	
HCM 2010 Ctrl Delay	6.1
HCM 2010 LOS	A

Notes

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (veh/h)	1	571	234	0	347	165	43	443
Future Volume (veh/h)	1	571	234	0	347	165	43	443
Number		1	6		2	12	3	18
Initial Q (Qb), veh		0	0		0	0	0	0
Ped-Bike Adj(A_pbT)		1.00				1.00	1.00	1.00
Parking Bus, Adj		1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863		1863	1863	1863	1863
Adj Flow Rate, veh/h		672	275		403	192	48	492
Adj No. of Lanes		1	2		2	1	1	1
Peak Hour Factor		0.85	0.85		0.86	0.86	0.90	0.90
Percent Heavy Veh, %		2	2		2	2	2	2
Cap, veh/h		582	1905		541	242	581	518
Arrive On Green		0.33	0.54		0.15	0.15	0.33	0.33
Sat Flow, veh/h		1774	3632		3632	1583	1774	1583
Grp Volume(v), veh/h		672	275		403	192	48	492
Grp Sat Flow(s),veh/h/ln		1774	1770		1770	1583	1774	1583
Q Serve(g_s), s		29.8	3.5		9.9	10.6	1.7	27.5
Cycle Q Clear(g_c), s		29.8	3.5		9.9	10.6	1.7	27.5
Prop In Lane		1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h		582	1905		541	242	581	518
V/C Ratio(X)		1.15	0.14		0.74	0.79	0.08	0.95
Avail Cap(c_a), veh/h		582	2471		2467	1104	674	602
HCM Platoon Ratio		1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		30.5	10.5		36.8	37.1	21.1	29.8
Incr Delay (d2), s/veh		87.7	0.0		0.8	2.2	0.0	22.0
Initial Q Delay(d3),s/veh		0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		28.7	1.7		4.9	4.8	0.8	15.2
LnGrp Delay(d),s/veh		118.2	10.5		37.5	39.3	21.1	51.8
LnGrp LOS		F	B		D	D	C	D
Approach Vol, veh/h			947		595		540	
Approach Delay, s/veh			87.0		38.1		49.1	
Approach LOS			F		D		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	35.0	20.6				55.6		35.2
Change Period (Y+Rc), s	* 5.2	* 6.7				* 6.7		5.5
Max Green Setting (Gmax), s	* 30	* 63				* 63		34.5
Max Q Clear Time (g_c+I1), s	31.8	12.6				5.5		29.5
Green Ext Time (p_c), s	0.0	1.3				1.3		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	63.2
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	168	427	198	38	279	86	11	106	750	24	4	198
Future Volume (veh/h)	168	427	198	38	279	86	11	106	750	24	4	198
Number	3	8	18	7	4	14		1	6	16		5
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0		0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00		1.00		1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		1863	1863	1900		1863
Adj Flow Rate, veh/h	179	454	211	41	303	93		115	815	26		208
Adj No. of Lanes	1	1	1	1	1	1		1	2	0		1
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92		0.92	0.92	0.92		0.95
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2		2
Cap, veh/h	203	491	418	53	334	284		138	1373	44		232
Arrive On Green	0.11	0.26	0.26	0.03	0.18	0.18		0.08	0.39	0.39		0.13
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583		1774	3501	112		1774
Grp Volume(v), veh/h	179	454	211	41	303	93		115	412	429		208
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583		1774	1770	1843		1774
Q Serve(g_s), s	14.0	33.4	15.9	3.2	22.4	7.2		9.0	25.9	25.9		16.2
Cycle Q Clear(g_c), s	14.0	33.4	15.9	3.2	22.4	7.2		9.0	25.9	25.9		16.2
Prop In Lane	1.00		1.00	1.00		1.00		1.00		0.06		1.00
Lane Grp Cap(c), veh/h	203	491	418	53	334	284		138	694	723		232
V/C Ratio(X)	0.88	0.92	0.51	0.78	0.91	0.33		0.83	0.59	0.59		0.90
Avail Cap(c_a), veh/h	309	491	418	246	432	367		246	788	820		309
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	61.3	50.4	44.0	67.7	56.6	50.3		63.9	33.8	33.8		60.2
Incr Delay (d2), s/veh	12.1	22.9	0.4	8.7	17.0	0.2		4.9	0.5	0.4		19.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
%ile BackOfQ(50%),veh/ln	7.5	20.3	7.0	1.7	13.1	3.2		4.6	12.8	13.3		9.2
LnGrp Delay(d),s/veh	73.5	73.3	44.4	76.4	73.6	50.6		68.9	34.3	34.3		79.3
LnGrp LOS	E	E	D	E	E	D		E	C	C		E
Approach Vol, veh/h		844			437				956			
Approach Delay, s/veh		66.1			69.0				38.5			
Approach LOS		E			E				D			

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.4	70.0	21.6	32.6	23.9	62.6	9.7	44.5
Change Period (Y+Rc), s	5.5	7.4	5.5	7.4	5.5	7.4	5.5	* 7.4
Max Green Setting (Gmax), s	19.5	62.6	24.5	32.6	24.5	62.6	19.5	* 33
Max Q Clear Time (g_c+I1), s	11.0	64.6	16.0	24.4	18.2	27.9	5.2	35.4
Green Ext Time (p_c), s	0.1	0.0	0.1	0.8	0.1	16.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	80.1
HCM 2010 LOS	F

Notes

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	1711	153
Future Volume (veh/h)	1711	153
Number	2	12
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	1801	0
Adj No. of Lanes	2	1
Peak Hour Factor	0.95	0.95
Percent Heavy Veh, %	2	2
Cap, veh/h	1576	705
Arrive On Green	0.45	0.00
Sat Flow, veh/h	3539	1583
Grp Volume(v), veh/h	1801	0
Grp Sat Flow(s),veh/h/ln	1770	1583
Q Serve(g_s), s	62.6	0.0
Cycle Q Clear(g_c), s	62.6	0.0
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1576	705
V/C Ratio(X)	1.14	0.00
Avail Cap(c_a), veh/h	1576	705
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	39.0	0.0
Incr Delay (d2), s/veh	72.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	46.3	0.0
LnGrp Delay(d),s/veh	111.5	0.0
LnGrp LOS	F	
Approach Vol, veh/h	2009	
Approach Delay, s/veh	108.2	
Approach LOS	F	
Timer		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	456	78	130	299	5	29	87	96	11	537	67
Future Volume (veh/h)	71	456	78	130	299	5	29	87	96	11	537	67
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	72	461	79	148	340	6	34	101	112	12	610	76
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.99	0.99	0.99	0.88	0.88	0.88	0.86	0.86	0.86	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	860	147	186	1202	21	41	248	274	67	522	65
Arrive On Green	0.05	0.28	0.28	0.11	0.34	0.34	0.02	0.31	0.31	0.04	0.32	0.32
Sat Flow, veh/h	1774	3026	516	1774	3559	63	1774	808	896	1774	1625	202
Grp Volume(v), veh/h	72	269	271	148	169	177	34	0	213	12	0	686
Grp Sat Flow(s),veh/h/ln	1774	1770	1772	1774	1770	1852	1774	0	1705	1774	0	1827
Q Serve(g_s), s	2.6	8.2	8.3	5.2	4.5	4.5	1.2	0.0	6.3	0.4	0.0	20.5
Cycle Q Clear(g_c), s	2.6	8.2	8.3	5.2	4.5	4.5	1.2	0.0	6.3	0.4	0.0	20.5
Prop In Lane	1.00		0.29	1.00		0.03	1.00		0.53	1.00		0.11
Lane Grp Cap(c), veh/h	92	503	504	186	598	625	41	0	522	67	0	587
V/C Ratio(X)	0.78	0.53	0.54	0.79	0.28	0.28	0.84	0.00	0.41	0.18	0.00	1.17
Avail Cap(c_a), veh/h	306	1539	1541	306	1539	1611	306	0	548	306	0	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.9	19.3	19.3	27.9	15.5	15.5	31.1	0.0	17.5	29.7	0.0	21.7
Incr Delay (d2), s/veh	5.4	1.3	1.3	2.9	0.4	0.3	15.2	0.0	2.4	0.5	0.0	93.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	4.1	4.2	2.7	2.2	2.3	0.8	0.0	3.3	0.2	0.0	25.5
LnGrp Delay(d),s/veh	35.3	20.5	20.6	30.8	15.8	15.8	46.2	0.0	19.9	30.2	0.0	114.9
LnGrp LOS	D	C	C	C	B	B	D		B	C		F
Approach Vol, veh/h		612			494			247			698	
Approach Delay, s/veh		22.3			20.3			23.5			113.4	
Approach LOS		C			C			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	26.1	5.5	25.0	10.7	22.6	6.4	24.0
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.5
Max Green Setting (Gmax), s	11.0	55.5	11.0	20.5	11.0	55.5	11.0	20.5
Max Q Clear Time (g_c+I1), s	4.6	6.5	3.2	22.5	7.2	10.3	2.4	8.3
Green Ext Time (p_c), s	0.0	7.9	0.0	0.0	0.0	7.9	0.0	9.7

Intersection Summary	
HCM 2010 Ctrl Delay	53.0
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	18.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	551	0	15	315	2	4	6	1	0	158	115
Future Vol, veh/h	19	551	0	15	315	2	4	6	1	0	158	115
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	350	-	-	350	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	79	79	79	70	70	70	73	73	73
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	592	0	19	399	3	6	9	1	0	216	158

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	401	0	0	592	0	0	1179	1072	592	1076	1071	400
Stage 1	-	-	-	-	-	-	633	633	-	438	438	-
Stage 2	-	-	-	-	-	-	546	439	-	638	633	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1158	-	-	984	-	-	167	220	506	197	221	650
Stage 1	-	-	-	-	-	-	468	473	-	597	579	-
Stage 2	-	-	-	-	-	-	522	578	-	465	473	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1158	-	-	984	-	-	-	212	506	185	~ 213	650
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	212	-	185	~ 213	-
Stage 1	-	-	-	-	-	-	460	465	-	587	568	-
Stage 2	-	-	-	-	-	-	240	567	-	447	465	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.4		70.9
HCM LOS			-	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	506	1158	-	-	984	-	-	213	650
HCM Lane V/C Ratio	-	0.003	0.018	-	-	0.019	-	-	1.016	0.242
HCM Control Delay (s)	-	12.1	8.2	-	-	8.7	-	-	113.5	12.3
HCM Lane LOS	-	B	A	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	-	0	0.1	-	-	0.1	-	-	9.2	0.9

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	453	12	28	250	137	7	331	23	227	844	93
Future Volume (veh/h)	125	453	12	28	250	137	7	331	23	227	844	93
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	133	482	13	30	269	147	7	341	24	232	861	95
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.97	0.97	0.97	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	512	435	38	384	327	46	633	45	259	910	916
Arrive On Green	0.09	0.28	0.28	0.02	0.21	0.21	0.03	0.37	0.37	0.15	0.49	0.49
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	1720	121	1774	1863	1583
Grp Volume(v), veh/h	133	482	13	30	269	147	7	0	365	232	861	95
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	0	1841	1774	1863	1583
Q Serve(g_s), s	8.6	29.6	0.7	2.0	15.7	9.5	0.5	0.0	18.3	15.0	51.4	3.1
Cycle Q Clear(g_c), s	8.6	29.6	0.7	2.0	15.7	9.5	0.5	0.0	18.3	15.0	51.4	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	159	512	435	38	384	327	46	0	678	259	910	916
V/C Ratio(X)	0.83	0.94	0.03	0.80	0.70	0.45	0.15	0.00	0.54	0.90	0.95	0.10
Avail Cap(c_a), veh/h	311	529	449	311	529	449	311	0	1001	372	1019	1009
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.4	41.5	31.0	57.0	43.1	40.6	55.7	0.0	29.1	49.1	28.5	11.1
Incr Delay (d2), s/veh	4.3	24.4	0.0	13.3	1.0	0.4	0.6	0.0	0.2	14.1	15.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	18.7	0.3	1.1	8.2	4.2	0.2	0.0	9.4	8.4	30.2	1.4
LnGrp Delay(d),s/veh	56.7	65.9	31.0	70.3	44.1	41.0	56.3	0.0	29.4	63.2	43.8	11.1
LnGrp LOS	E	E	C	E	D	D	E		C	E	D	B
Approach Vol, veh/h		628			446			372			1188	
Approach Delay, s/veh		63.2			44.8			29.9			44.9	
Approach LOS		E			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	30.9	7.5	63.5	7.0	39.0	21.6	49.4
Change Period (Y+Rc), s	4.5	6.8	4.5	* 6.4	4.5	6.8	4.5	6.4
Max Green Setting (Gmax), s	20.5	33.2	20.5	* 64	20.5	33.2	24.5	63.6
Max Q Clear Time (g_c+I1), s	10.6	17.7	2.5	53.4	4.0	31.6	17.0	20.3
Green Ext Time (p_c), s	0.0	2.4	0.0	3.7	0.0	0.6	0.1	5.1

Intersection Summary	
HCM 2010 Ctrl Delay	47.2
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	32	661	3	1	53	344	41	3	324	67	61	378
Future Volume (veh/h)	32	661	3	1	53	344	41	3	324	67	61	378
Number	1	6	16		5	2	12	3	8	18	7	4
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		0.98	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900		1863	1863	1900	1900	1863	1900	1900	1863
Adj Flow Rate, veh/h	36	743	3		62	400	48	3	352	73	69	430
Adj No. of Lanes	1	1	0		1	1	0	0	1	0	0	1
Peak Hour Factor	0.89	0.89	0.89		0.86	0.86	0.86	0.92	0.92	0.92	0.88	0.88
Percent Heavy Veh, %	2	2	2		2	2	2	2	2	2	2	2
Cap, veh/h	46	684	3		78	629	76	3	328	68	50	312
Arrive On Green	0.03	0.37	0.37		0.04	0.39	0.39	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1774	1854	7		1774	1628	195	13	1487	308	226	1409
Grp Volume(v), veh/h	36	0	746		62	0	448	428	0	0	555	0
Grp Sat Flow(s),veh/h/ln	1774	0	1861		1774	0	1823	1808	0	0	1819	0
Q Serve(g_s), s	3.5	0.0	63.6		6.0	0.0	34.5	38.0	0.0	0.0	38.2	0.0
Cycle Q Clear(g_c), s	3.5	0.0	63.6		6.0	0.0	34.5	38.0	0.0	0.0	38.2	0.0
Prop In Lane	1.00		0.00		1.00		0.11	0.01		0.17	0.12	
Lane Grp Cap(c), veh/h	46	0	686		78	0	705	398	0	0	403	0
V/C Ratio(X)	0.78	0.00	1.09		0.80	0.00	0.64	1.07	0.00	0.00	1.38	0.00
Avail Cap(c_a), veh/h	262	0	686		211	0	705	398	0	0	403	0
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00		1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	83.5	0.0	54.4		81.7	0.0	43.0	67.2	0.0	0.0	67.1	0.0
Incr Delay (d2), s/veh	9.8	0.0	60.3		6.7	0.0	1.5	66.5	0.0	0.0	184.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	44.1		3.1	0.0	17.7	26.3	0.0	0.0	39.8	0.0
LnGrp Delay(d),s/veh	93.3	0.0	114.8		88.4	0.0	44.5	133.7	0.0	0.0	252.0	0.0
LnGrp LOS	F		F		F		D	F			F	
Approach Vol, veh/h		782				510			428			555
Approach Delay, s/veh		113.8				49.8			133.7			252.0
Approach LOS		F				D			F			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	73.5		45.0	12.1	70.4		45.0
Change Period (Y+Rc), s	4.5	6.8		6.8	4.5	* 6.8		7.0
Max Green Setting (Gmax), s	25.5	63.2		38.2	20.5	* 64		38.0
Max Q Clear Time (g_c+I1), s	5.5	36.5		40.2	8.0	65.6		40.0
Green Ext Time (p_c), s	0.0	4.4		0.0	0.0	0.0		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		136.9
HCM 2010 LOS		F

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	49
Future Volume (veh/h)	49
Number	14
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1900
Adj Flow Rate, veh/h	56
Adj No. of Lanes	0
Peak Hour Factor	0.88
Percent Heavy Veh, %	2
Cap, veh/h	41
Arrive On Green	0.22
Sat Flow, veh/h	184
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.10
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	0.0
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	577	0	0	352	0	0
Future Volume (veh/h)	577	0	0	352	0	0
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1900	1863	1863	1863
Adj Flow Rate, veh/h	627	0	0	383	0	0
Adj No. of Lanes	1	0	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1274	0	0	1274	12	11
Arrive On Green	0.68	0.00	0.00	0.68	0.00	0.00
Sat Flow, veh/h	1863	0	0	1863	1774	1583
Grp Volume(v), veh/h	627	0	0	383	0	0
Grp Sat Flow(s),veh/h/ln	1863	0	0	1863	1774	1583
Q Serve(g_s), s	2.3	0.0	0.0	1.2	0.0	0.0
Cycle Q Clear(g_c), s	2.3	0.0	0.0	1.2	0.0	0.0
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	1274	0	0	1274	12	11
V/C Ratio(X)	0.49	0.00	0.00	0.30	0.00	0.00
Avail Cap(c_a), veh/h	2353	0	0	2353	2241	2000
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	1.1	0.0	0.0	0.9	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	0.6	0.0	0.0
LnGrp Delay(d),s/veh	1.4	0.0	0.0	1.0	0.0	0.0
LnGrp LOS	A			A		
Approach Vol, veh/h	627			383	0	
Approach Delay, s/veh	1.4			1.0	0.0	
Approach LOS	A			A		

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		0.0		14.2				14.2
Change Period (Y+Rc), s		4.5		4.5				4.5
Max Green Setting (Gmax), s		18.0		18.0				18.0
Max Q Clear Time (g_c+I1), s		0.0		4.3				3.2
Green Ext Time (p_c), s		0.0		5.6				5.9

Intersection Summary	
HCM 2010 Ctrl Delay	1.2
HCM 2010 LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	96	29	5	283	772	152
Future Volume (veh/h)	96	29	5	283	772	152
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	104	32	6	329	788	155
Adj No. of Lanes	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.86	0.86	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	148	132	9	1265	850	167
Arrive On Green	0.08	0.08	0.00	0.68	0.56	0.56
Sat Flow, veh/h	1774	1583	1774	1863	1507	296
Grp Volume(v), veh/h	104	32	6	329	0	943
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	0	1803
Q Serve(g_s), s	2.9	0.9	0.2	3.4	0.0	23.9
Cycle Q Clear(g_c), s	2.9	0.9	0.2	3.4	0.0	23.9
Prop In Lane	1.00	1.00	1.00			0.16
Lane Grp Cap(c), veh/h	148	132	9	1265	0	1017
V/C Ratio(X)	0.70	0.24	0.71	0.26	0.00	0.93
Avail Cap(c_a), veh/h	1226	1094	744	2382	0	2287
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.3	21.5	24.9	3.1	0.0	10.0
Incr Delay (d2), s/veh	2.3	0.3	32.5	0.0	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.4	0.2	1.8	0.0	12.0
LnGrp Delay(d),s/veh	24.6	21.8	57.4	3.2	0.0	11.7
LnGrp LOS	C	C	E	A		B
Approach Vol, veh/h	136			335	943	
Approach Delay, s/veh	23.9			4.1	11.7	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	5.7	34.7				40.5		9.6
Change Period (Y+Rc), s	5.5	* 6.5				* 6.5		5.4
Max Green Setting (Gmax), s	21.0	* 64				* 64		34.6
Max Q Clear Time (g_c+I1), s	2.2	25.9				5.4		4.9
Green Ext Time (p_c), s	0.0	2.3				2.3		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	11.1
HCM 2010 LOS	B

Notes

Intersection	
Intersection Delay, s/veh	27.2
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	2	0	14	0	31	0	384	4	176	452	2
Future Vol, veh/h	3	2	0	14	0	31	0	384	4	176	452	2
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.96	0.96	0.96	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	3	0	20	0	44	0	400	4	198	508	2
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.9	9.9	13.9	36.6
HCM LOS	A	A	B	E

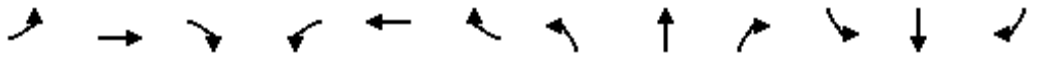
Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	60%	31%	28%
Vol Thru, %	99%	40%	0%	72%
Vol Right, %	1%	0%	69%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	388	5	45	630
LT Vol	0	3	14	176
Through Vol	384	2	0	452
RT Vol	4	0	31	2
Lane Flow Rate	404	7	64	708
Geometry Grp	1	1	1	1
Degree of Util (X)	0.551	0.013	0.109	0.915
Departure Headway (Hd)	4.904	6.793	6.126	4.654
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	728	530	589	772
Service Time	2.978	4.797	4.126	2.716
HCM Lane V/C Ratio	0.555	0.013	0.109	0.917
HCM Control Delay	13.9	9.9	9.9	36.6
HCM Lane LOS	B	A	A	E
HCM 95th-tile Q	3.4	0	0.4	12.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	268	352	7	1	443	9	7	15	1	11	35	762
Future Volume (veh/h)	268	352	7	1	443	9	7	15	1	11	35	762
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	288	378	0	1	461	9	8	18	1	12	38	819
Adj No. of Lanes	1	1	1	1	1	0	0	1	0	0	1	1
Peak Hour Factor	0.93	0.93	0.93	0.96	0.96	0.96	0.85	0.85	0.85	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	316	843	717	2	501	10	18	40	2	140	442	772
Arrive On Green	0.18	0.45	0.00	0.00	0.28	0.28	0.03	0.03	0.03	0.32	0.32	0.32
Sat Flow, veh/h	1774	1863	1583	1774	1820	36	540	1216	68	442	1399	1550
Grp Volume(v), veh/h	288	378	0	1	0	470	27	0	0	50	0	819
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1856	1824	0	0	1841	0	1550
Q Serve(g_s), s	17.3	15.2	0.0	0.1	0.0	26.8	1.6	0.0	0.0	2.1	0.0	34.4
Cycle Q Clear(g_c), s	17.3	15.2	0.0	0.1	0.0	26.8	1.6	0.0	0.0	2.1	0.0	34.4
Prop In Lane	1.00		1.00	1.00		0.02	0.30		0.04	0.24		1.00
Lane Grp Cap(c), veh/h	316	843	717	2	0	511	60	0	0	582	0	772
V/C Ratio(X)	0.91	0.45	0.00	0.61	0.00	0.92	0.45	0.00	0.00	0.09	0.00	1.06
Avail Cap(c_a), veh/h	399	1098	934	318	0	1091	596	0	0	582	0	772
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.9	20.5	0.0	54.4	0.0	38.3	51.7	0.0	0.0	26.2	0.0	27.7
Incr Delay (d2), s/veh	19.2	0.1	0.0	91.9	0.0	3.0	1.9	0.0	0.0	0.0	0.0	49.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.2	7.8	0.0	0.1	0.0	14.1	0.8	0.0	0.0	1.1	0.0	33.7
LnGrp Delay(d),s/veh	63.1	20.6	0.0	146.2	0.0	41.3	53.6	0.0	0.0	26.2	0.0	77.6
LnGrp LOS	E	C		F		D	D			C		F
Approach Vol, veh/h		666			471			27			869	
Approach Delay, s/veh		39.0			41.5			53.6			74.6	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	24.9	36.0		40.0	5.6	55.3		8.0
Change Period (Y+Rc), s	5.5	6.0		* 5.6	5.5	* 6		4.4
Max Green Setting (Gmax), s	24.5	64.0		* 34	19.5	* 64		35.6
Max Q Clear Time (g_c+I1), s	19.3	28.8		36.4	2.1	17.2		3.6
Green Ext Time (p_c), s	0.1	1.2		0.0	0.0	1.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	55.0
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	292	18	58	196	204	5	54	29	523	156	362
Future Volume (veh/h)	67	292	18	58	196	204	5	54	29	523	156	362
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	73	317	20	76	258	268	6	68	37	581	173	402
Adj No. of Lanes	1	2	0	1	1	1	1	1	0	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.76	0.76	0.76	0.79	0.79	0.79	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	751	47	96	404	343	9	123	67	713	579	492
Arrive On Green	0.05	0.22	0.22	0.05	0.22	0.22	0.00	0.11	0.11	0.21	0.31	0.31
Sat Flow, veh/h	1774	3377	212	1774	1863	1583	1774	1136	618	3442	1863	1583
Grp Volume(v), veh/h	73	165	172	76	258	268	6	0	105	581	173	402
Grp Sat Flow(s),veh/h/ln	1774	1770	1819	1774	1863	1583	1774	0	1754	1721	1863	1583
Q Serve(g_s), s	2.1	4.0	4.1	2.1	6.4	8.1	0.2	0.0	2.9	8.1	3.6	11.8
Cycle Q Clear(g_c), s	2.1	4.0	4.1	2.1	6.4	8.1	0.2	0.0	2.9	8.1	3.6	11.8
Prop In Lane	1.00		0.12	1.00		1.00	1.00		0.35	1.00		1.00
Lane Grp Cap(c), veh/h	92	394	405	96	404	343	9	0	190	713	579	492
V/C Ratio(X)	0.80	0.42	0.42	0.79	0.64	0.78	0.71	0.00	0.55	0.82	0.30	0.82
Avail Cap(c_a), veh/h	685	2281	2345	699	2405	2044	685	0	2264	1329	2394	2035
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.7	16.8	16.9	23.6	18.0	18.6	25.1	0.0	21.3	19.1	13.2	16.1
Incr Delay (d2), s/veh	5.8	0.3	0.3	5.5	0.6	1.5	32.5	0.0	0.9	0.9	0.1	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.0	2.1	1.2	3.3	3.6	0.2	0.0	1.4	4.0	1.8	5.3
LnGrp Delay(d),s/veh	29.5	17.1	17.1	29.1	18.6	20.1	57.6	0.0	22.3	20.0	13.3	17.4
LnGrp LOS	C	B	B	C	B	C	E		C	B	B	B
Approach Vol, veh/h		410			602			111			1156	
Approach Delay, s/veh		19.3			20.6			24.2			18.1	
Approach LOS		B			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	15.9	5.7	20.8	7.8	16.1	16.0	10.6
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	19.5	* 65	19.5	* 65	* 20	* 65	19.5	* 65
Max Q Clear Time (g_c+I1), s	4.1	10.1	2.2	13.8	4.1	6.1	10.1	4.9
Green Ext Time (p_c), s	0.0	0.9	0.0	0.6	0.0	0.9	0.3	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	19.3
HCM 2010 LOS	B

Notes

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (veh/h)	5	58	305	452	137	107	104	3	177	805	111	3
Future Volume (veh/h)	5	58	305	452	137	107	104	3	177	805	111	3
Number		7	4	14	3	8	18		5	2	12	
Initial Q (Qb), veh		0	0	0	0	0	0		0	0	0	
Ped-Bike Adj(A_pbT)		1.00		1.00	1.00		0.99		1.00		0.99	
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln		1863	1863	1863	1863	1863	1863		1863	1863	1863	
Adj Flow Rate, veh/h		60	318	471	167	130	127		195	885	122	
Adj No. of Lanes		2	3	1	2	2	1		2	3	1	
Peak Hour Factor		0.96	0.96	0.96	0.82	0.82	0.82		0.91	0.91	0.91	
Percent Heavy Veh, %		2	2	2	2	2	2		2	2	2	
Cap, veh/h		98	1213	378	215	964	426		243	2171	668	
Arrive On Green		0.03	0.24	0.24	0.06	0.27	0.27		0.07	0.43	0.43	
Sat Flow, veh/h		3442	5085	1583	3442	3539	1563		3442	5085	1564	
Grp Volume(v), veh/h		60	318	471	167	130	127		195	885	122	
Grp Sat Flow(s),veh/h/ln		1721	1695	1583	1721	1770	1563		1721	1695	1564	
Q Serve(g_s), s		2.4	7.1	33.3	6.7	3.9	9.0		7.8	16.9	6.8	
Cycle Q Clear(g_c), s		2.4	7.1	33.3	6.7	3.9	9.0		7.8	16.9	6.8	
Prop In Lane		1.00		1.00	1.00		1.00		1.00		1.00	
Lane Grp Cap(c), veh/h		98	1213	378	215	964	426		243	2171	668	
V/C Ratio(X)		0.61	0.26	1.25	0.78	0.13	0.30		0.80	0.41	0.18	
Avail Cap(c_a), veh/h		481	1213	378	481	964	426		481	2284	702	
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Upstream Filter(I)		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Uniform Delay (d), s/veh		67.0	43.2	53.1	64.5	38.4	40.2		63.9	27.8	24.9	
Incr Delay (d2), s/veh		2.3	0.0	131.5	2.3	0.0	0.1		2.3	0.0	0.0	
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln		1.2	3.3	28.3	3.2	1.9	3.9		3.8	7.9	2.9	
LnGrp Delay(d),s/veh		69.3	43.2	184.7	66.7	38.4	40.4		66.2	27.8	24.9	
LnGrp LOS		E	D	F	E	D	D		E	C	C	
Approach Vol, veh/h			849			424				1202		
Approach Delay, s/veh			123.5			50.1				33.7		
Approach LOS			F			D				C		

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.3	67.0	14.2	40.1	15.4	69.9	9.5	44.8
Change Period (Y+Rc), s	5.5	* 7.4	5.5	* 6.8	5.5	* 7.4	5.5	6.8
Max Green Setting (Gmax), s	19.5	* 63	19.5	* 33	19.5	* 63	19.5	33.2
Max Q Clear Time (g_c+I1), s	12.7	18.9	8.7	35.3	9.8	61.9	4.4	11.0
Green Ext Time (p_c), s	0.1	11.3	0.1	0.0	0.1	0.6	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	59.3
HCM 2010 LOS	E

Notes

Movement	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (veh/h)	243	2023	124
Future Volume (veh/h)	243	2023	124
Number	1	6	16
Initial Q (Qb), veh	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863
Adj Flow Rate, veh/h	267	2223	136
Adj No. of Lanes	2	3	1
Peak Hour Factor	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2
Cap, veh/h	315	2277	709
Arrive On Green	0.09	0.45	0.45
Sat Flow, veh/h	3442	5085	1583
Grp Volume(v), veh/h	267	2223	136
Grp Sat Flow(s),veh/h/ln	1721	1695	1583
Q Serve(g_s), s	10.7	59.9	7.2
Cycle Q Clear(g_c), s	10.7	59.9	7.2
Prop In Lane	1.00		1.00
Lane Grp Cap(c), veh/h	315	2277	709
V/C Ratio(X)	0.85	0.98	0.19
Avail Cap(c_a), veh/h	481	2280	710
HCM Platoon Ratio	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.5	37.8	23.3
Incr Delay (d2), s/veh	5.4	13.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	30.9	3.2
LnGrp Delay(d),s/veh	67.8	51.5	23.3
LnGrp LOS	E	D	C
Approach Vol, veh/h		2626	
Approach Delay, s/veh		51.7	
Approach LOS		D	
Timer			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	185	120	37	403	501	172
Future Volume (veh/h)	185	120	37	403	501	172
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1900
Adj Flow Rate, veh/h	206	133	40	433	611	210
Adj No. of Lanes	0	0	1	1	1	0
Peak Hour Factor	0.90	0.90	0.93	0.93	0.82	0.82
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	234	151	48	1115	659	227
Arrive On Green	0.23	0.23	0.03	0.60	0.50	0.50
Sat Flow, veh/h	1027	663	1774	1863	1326	456
Grp Volume(v), veh/h	340	0	40	433	0	821
Grp Sat Flow(s),veh/h/ln	1694	0	1774	1863	0	1782
Q Serve(g_s), s	12.0	0.0	1.4	7.5	0.0	26.7
Cycle Q Clear(g_c), s	12.0	0.0	1.4	7.5	0.0	26.7
Prop In Lane	0.61	0.39	1.00			0.26
Lane Grp Cap(c), veh/h	386	0	48	1115	0	886
V/C Ratio(X)	0.88	0.00	0.83	0.39	0.00	0.93
Avail Cap(c_a), veh/h	964	0	583	1927	0	1835
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.2	0.0	30.0	6.5	0.0	14.6
Incr Delay (d2), s/veh	2.7	0.0	12.2	0.1	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	0.0	0.8	3.9	0.0	13.5
LnGrp Delay(d),s/veh	25.8	0.0	42.3	6.6	0.0	16.5
LnGrp LOS	C		D	A		B
Approach Vol, veh/h	340			473	821	
Approach Delay, s/veh	25.8			9.6	16.5	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.3	36.9				43.2		18.8
Change Period (Y+Rc), s	* 4.6	* 6.1				* 6.1		4.7
Max Green Setting (Gmax), s	* 20	* 64				* 64		35.3
Max Q Clear Time (g_c+I1), s	3.4	28.7				9.5		14.0
Green Ext Time (p_c), s	0.0	2.2				2.2		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	16.4
HCM 2010 LOS	B

Notes

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	2	20	907	184	392	659	27	184	167	687	18	54
Future Volume (veh/h)	2	20	907	184	392	659	27	184	167	687	18	54
Number		1	6	16	5	2	12	3	8	18	7	4
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00	1.00		0.97	1.00		0.96	1.00	
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863
Adj Flow Rate, veh/h		24	1093	0	431	724	30	205	477	494	24	72
Adj No. of Lanes		1	2	1	2	2	0	1	1	1	0	2
Peak Hour Factor		0.83	0.83	0.83	0.91	0.91	0.91	0.87	0.87	0.87	0.75	0.75
Percent Heavy Veh, %		2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h		30	1194	534	476	1585	66	456	479	609	79	240
Arrive On Green		0.02	0.34	0.00	0.14	0.46	0.46	0.26	0.26	0.26	0.12	0.12
Sat Flow, veh/h		1774	3539	1583	3442	3459	143	1774	1863	1518	690	2085
Grp Volume(v), veh/h		24	1093	0	431	370	384	205	477	494	64	0
Grp Sat Flow(s),veh/h/ln		1774	1770	1583	1721	1770	1833	1774	1863	1518	1828	0
Q Serve(g_s), s		1.8	40.1	0.0	16.7	19.4	19.4	13.1	34.6	34.8	4.3	0.0
Cycle Q Clear(g_c), s		1.8	40.1	0.0	16.7	19.4	19.4	13.1	34.6	34.8	4.3	0.0
Prop In Lane		1.00		1.00	1.00		0.08	1.00		1.00	0.38	
Lane Grp Cap(c), veh/h		30	1194	534	476	811	840	456	479	609	210	0
V/C Ratio(X)		0.80	0.92	0.00	0.91	0.46	0.46	0.45	1.00	0.81	0.30	0.00
Avail Cap(c_a), veh/h		258	1707	764	503	855	885	456	479	609	466	0
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh		66.3	43.0	0.0	57.5	25.1	25.1	42.2	50.2	36.7	54.9	0.0
Incr Delay (d2), s/veh		16.7	4.9	0.0	18.6	0.1	0.1	0.3	40.0	7.6	0.3	0.0
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		1.0	20.4	0.0	9.2	9.5	9.8	6.5	23.1	17.7	2.2	0.0
LnGrp Delay(d),s/veh		83.1	47.9	0.0	76.1	25.3	25.3	42.5	90.3	44.3	55.2	0.0
LnGrp LOS		F	D		E	C	C	D	F	D	E	
Approach Vol, veh/h			1117			1185			1176			120
Approach Delay, s/veh			48.6			43.8			62.6			55.2
Approach LOS			D			D			E			E

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.6	66.7		21.1	23.9	50.4		40.0
Change Period (Y+Rc), s	* 5.3	* 4.7		5.5	* 5.2	* 4.7		5.2
Max Green Setting (Gmax), s	* 20	* 65		34.5	* 20	* 65		34.8
Max Q Clear Time (g_c+I1), s	3.8	21.4		6.3	18.7	42.1		36.8
Green Ext Time (p_c), s	0.0	3.7		0.1	0.0	3.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	51.8
HCM 2010 LOS	D

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	18
Future Volume (veh/h)	18
Number	14
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.90
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1900
Adj Flow Rate, veh/h	24
Adj No. of Lanes	0
Peak Hour Factor	0.75
Percent Heavy Veh, %	2
Cap, veh/h	81
Arrive On Green	0.12
Sat Flow, veh/h	701
Grp Volume(v), veh/h	56
Grp Sat Flow(s),veh/h/ln	1648
Q Serve(g_s), s	4.2
Cycle Q Clear(g_c), s	4.2
Prop In Lane	0.43
Lane Grp Cap(c), veh/h	190
V/C Ratio(X)	0.30
Avail Cap(c_a), veh/h	420
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	54.9
Incr Delay (d2), s/veh	0.3
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	2.0
LnGrp Delay(d),s/veh	55.2
LnGrp LOS	E
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	343	0	310	0	1102	1059	0	568	326
Future Volume (veh/h)	0	0	0	343	0	310	0	1102	1059	0	568	326
Number				3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	0	1863	1900	0	1863	1900
Adj Flow Rate, veh/h				371	27	352	0	1136	0	0	684	0
Adj No. of Lanes				1	1	0	0	2	0	0	2	0
Peak Hour Factor				0.88	0.88	0.88	0.97	0.97	0.97	0.83	0.83	0.83
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				463	29	380	0	2297	0	0	2297	0
Arrive On Green				0.26	0.26	0.26	0.00	0.65	0.00	0.00	0.65	0.00
Sat Flow, veh/h				1774	112	1456	0	3725	0	0	3725	0
Grp Volume(v), veh/h				371	0	379	0	1136	0	0	684	0
Grp Sat Flow(s),veh/h/ln				1774	0	1568	0	1770	0	0	1770	0
Q Serve(g_s), s				21.5	0.0	25.9	0.0	18.3	0.0	0.0	9.3	0.0
Cycle Q Clear(g_c), s				21.5	0.0	25.9	0.0	18.3	0.0	0.0	9.3	0.0
Prop In Lane				1.00		0.93	0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				463	0	409	0	2297	0	0	2297	0
V/C Ratio(X)				0.80	0.00	0.93	0.00	0.49	0.00	0.00	0.30	0.00
Avail Cap(c_a), veh/h				566	0	500	0	2297	0	0	2297	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				38.0	0.0	39.6	0.0	10.0	0.0	0.0	8.4	0.0
Incr Delay (d2), s/veh				5.4	0.0	19.3	0.0	0.8	0.0	0.0	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				11.2	0.0	13.4	0.0	9.1	0.0	0.0	4.6	0.0
LnGrp Delay(d),s/veh				43.4	0.0	58.9	0.0	10.7	0.0	0.0	8.7	0.0
LnGrp LOS				D		E		B			A	
Approach Vol, veh/h					750			1136			684	
Approach Delay, s/veh					51.2			10.7			8.7	
Approach LOS					D			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		76.4				76.4		33.6
Change Period (Y+Rc), s		* 5				5.0		4.9
Max Green Setting (Gmax), s		* 66				65.0		35.1
Max Q Clear Time (g_c+I1), s		11.3				20.3		27.9
Green Ext Time (p_c), s		4.9				4.8		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	22.0
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	534	0	614	0	0	0	0	1527	828	0	664	215
Future Volume (veh/h)	534	0	614	0	0	0	0	1527	828	0	664	215
Number	7	4	14				1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	819	0	440				0	1776	0	0	706	0
Adj No. of Lanes	2	0	1				0	3	0	0	2	1
Peak Hour Factor	0.90	0.90	0.90				0.86	0.86	0.86	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	1047	0	466				0	3104	0	0	2160	966
Arrive On Green	0.30	0.00	0.30				0.00	0.61	0.00	0.00	0.61	0.00
Sat Flow, veh/h	3548	0	1579				0	5421	0	0	3632	1583
Grp Volume(v), veh/h	819	0	440				0	1776	0	0	706	0
Grp Sat Flow(s),veh/h/ln	1774	0	1579				0	1695	0	0	1770	1583
Q Serve(g_s), s	23.3	0.0	30.0				0.0	23.0	0.0	0.0	10.7	0.0
Cycle Q Clear(g_c), s	23.3	0.0	30.0				0.0	23.0	0.0	0.0	10.7	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	1047	0	466				0	3104	0	0	2160	966
V/C Ratio(X)	0.78	0.00	0.94				0.00	0.57	0.00	0.00	0.33	0.00
Avail Cap(c_a), veh/h	1116	0	497				0	3104	0	0	2160	966
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	35.5	0.0	37.9				0.0	12.8	0.0	0.0	10.4	0.0
Incr Delay (d2), s/veh	3.1	0.0	25.7				0.0	0.8	0.0	0.0	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.8	0.0	16.4				0.0	10.9	0.0	0.0	5.3	0.0
LnGrp Delay(d),s/veh	38.6	0.0	63.5				0.0	13.6	0.0	0.0	10.8	0.0
LnGrp LOS	D		E					B			B	
Approach Vol, veh/h		1259						1776			706	
Approach Delay, s/veh		47.3						13.6			10.8	
Approach LOS		D						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		72.1		37.9		72.1		
Change Period (Y+Rc), s		* 5		* 5.4		5.0		
Max Green Setting (Gmax), s		* 66		* 35		65.0		
Max Q Clear Time (g_c+I1), s		12.7		32.0		25.0		
Green Ext Time (p_c), s		8.3		0.5		8.2		

Intersection Summary	
HCM 2010 Ctrl Delay	24.4
HCM 2010 LOS	C

Notes

Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (veh/h)	705	234	7	142	1123	623	102
Future Volume (veh/h)	705	234	7	142	1123	623	102
Number	6	16		5	2	3	18
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900		1863	1863	1863	1863
Adj Flow Rate, veh/h	820	0		160	1262	890	146
Adj No. of Lanes	3	0		1	3	2	1
Peak Hour Factor	0.86	0.86		0.89	0.89	0.70	0.70
Percent Heavy Veh, %	2	2		2	2	2	2
Cap, veh/h	2461	0		190	3257	955	439
Arrive On Green	0.48	0.00		0.11	0.64	0.28	0.28
Sat Flow, veh/h	5421	0		1774	5253	3442	1583
Grp Volume(v), veh/h	820	0		160	1262	890	146
Grp Sat Flow(s),veh/h/ln	1695	0		1774	1695	1721	1583
Q Serve(g_s), s	10.3	0.0		9.1	12.3	26.1	7.6
Cycle Q Clear(g_c), s	10.3	0.0		9.1	12.3	26.1	7.6
Prop In Lane		0.00		1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2461	0		190	3257	955	439
V/C Ratio(X)	0.33	0.00		0.84	0.39	0.93	0.33
Avail Cap(c_a), veh/h	3198	0		342	3257	1215	559
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.4	0.0		45.3	8.9	36.4	29.7
Incr Delay (d2), s/veh	0.2	0.0		3.8	0.2	9.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0		4.7	5.8	13.7	3.3
LnGrp Delay(d),s/veh	16.6	0.0		49.1	9.0	46.3	29.9
LnGrp LOS	B			D	A	D	C
Approach Vol, veh/h	820				1422	1036	
Approach Delay, s/veh	16.6				13.6	44.0	
Approach LOS	B				B	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		71.2			16.2	55.0		32.2
Change Period (Y+Rc), s		5.0			* 5.1	5.0		3.5
Max Green Setting (Gmax), s		65.0			* 20	65.0		36.5
Max Q Clear Time (g_c+I1), s		14.3			11.1	12.3		28.1
Green Ext Time (p_c), s		38.5			0.0	37.8		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	23.9
HCM 2010 LOS	C

Notes

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (veh/h)	14	321	452	253	30	184	487	220	14	112	460	75
Future Volume (veh/h)	14	321	452	253	30	184	487	220	14	112	460	75
Number		3	8	18		7	4	14		1	6	16
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.97		1.00		0.96		1.00		0.97
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1900		1863	1863	1863		1863	1863	1863
Adj Flow Rate, veh/h		401	565	316		224	594	268		117	479	78
Adj No. of Lanes		2	3	0		2	3	1		2	3	1
Peak Hour Factor		0.80	0.80	0.80		0.82	0.82	0.82		0.96	0.96	0.96
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2
Cap, veh/h		468	1002	455		292	1243	373		402	1412	427
Arrive On Green		0.14	0.30	0.30		0.08	0.24	0.24		0.12	0.28	0.28
Sat Flow, veh/h		3442	3390	1540		3442	5085	1525		3442	5085	1537
Grp Volume(v), veh/h		401	565	316		224	594	268		117	479	78
Grp Sat Flow(s),veh/h/ln		1721	1695	1540		1721	1695	1525		1721	1695	1537
Q Serve(g_s), s		11.2	13.9	17.9		6.3	9.9	15.9		3.1	7.4	3.8
Cycle Q Clear(g_c), s		11.2	13.9	17.9		6.3	9.9	15.9		3.1	7.4	3.8
Prop In Lane		1.00		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h		468	1002	455		292	1243	373		402	1412	427
V/C Ratio(X)		0.86	0.56	0.69		0.77	0.48	0.72		0.29	0.34	0.18
Avail Cap(c_a), veh/h		680	1175	534		680	1763	529		680	3320	1003
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		41.7	29.4	30.8		44.2	31.9	34.2		39.8	28.4	27.1
Incr Delay (d2), s/veh		5.2	0.2	2.2		1.6	0.1	1.1		0.1	0.1	0.1
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		5.7	6.5	7.9		3.1	4.6	6.8		1.5	3.5	1.6
LnGrp Delay(d),s/veh		46.9	29.6	33.0		45.8	32.0	35.3		40.0	28.5	27.2
LnGrp LOS		D	C	C		D	C	D		D	C	C
Approach Vol, veh/h			1282				1086				674	
Approach Delay, s/veh			35.8				35.7				30.3	
Approach LOS			D				D				C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	32.8	18.9	29.9	16.8	33.0	13.9	35.0
Change Period (Y+Rc), s	5.5	* 5.6	5.5	5.8	5.5	* 5.6	5.5	5.8
Max Green Setting (Gmax), s	19.5	* 64	19.5	34.2	19.5	* 64	19.5	34.2
Max Q Clear Time (g_c+I1), s	5.1	22.8	13.2	17.9	11.2	9.4	8.3	19.9
Green Ext Time (p_c), s	0.1	4.0	0.2	3.5	0.2	4.0	0.1	3.4

Intersection Summary	
HCM 2010 Ctrl Delay	35.2
HCM 2010 LOS	D

Notes

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Volume (veh/h)	8	288	843	162
Future Volume (veh/h)	8	288	843	162
Number		5	2	12
Initial Q (Qb), veh		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.97
Parking Bus, Adj		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1900
Adj Flow Rate, veh/h		327	958	184
Adj No. of Lanes		2	3	0
Peak Hour Factor		0.88	0.88	0.88
Percent Heavy Veh, %		2	2	2
Cap, veh/h		395	1176	225
Arrive On Green		0.11	0.28	0.28
Sat Flow, veh/h		3442	4263	816
Grp Volume(v), veh/h		327	761	381
Grp Sat Flow(s),veh/h/ln		1721	1695	1688
Q Serve(g_s), s		9.2	20.7	20.8
Cycle Q Clear(g_c), s		9.2	20.7	20.8
Prop In Lane		1.00		0.48
Lane Grp Cap(c), veh/h		395	935	466
V/C Ratio(X)		0.83	0.81	0.82
Avail Cap(c_a), veh/h		680	2213	1102
HCM Platoon Ratio		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00
Uniform Delay (d), s/veh		42.7	33.4	33.4
Incr Delay (d2), s/veh		1.7	0.7	1.4
Initial Q Delay(d3),s/veh		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		4.5	9.7	9.9
LnGrp Delay(d),s/veh		44.4	34.0	34.8
LnGrp LOS		D	C	C
Approach Vol, veh/h			1469	
Approach Delay, s/veh			36.5	
Approach LOS			D	
Timer				

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	1	476	230	22	3	68	174	649	43	1208	11	337
Future Volume (veh/h)	1	476	230	22	3	68	174	649	43	1208	11	337
Number		3	8	18		7	4	14	1	6	16	5
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.99		1.00		0.97	1.00		0.98	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1900		1863	1863	1863	1863	1863	1900	1863
Adj Flow Rate, veh/h		501	242	23		78	200	746	46	1299	12	347
Adj No. of Lanes		2	3	0		2	1	2	2	3	0	2
Peak Hour Factor		0.95	0.95	0.95		0.87	0.87	0.87	0.93	0.93	0.93	0.97
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		539	1695	158		126	442	1098	81	1597	15	401
Arrive On Green		0.16	0.36	0.36		0.04	0.24	0.24	0.02	0.31	0.31	0.12
Sat Flow, veh/h		3442	4730	440		3548	1863	3073	3442	5195	48	3442
Grp Volume(v), veh/h		501	172	93		78	200	746	46	848	463	347
Grp Sat Flow(s),veh/h/ln		1721	1695	1780		1774	1863	1536	1721	1695	1853	1721
Q Serve(g_s), s		17.9	4.3	4.4		2.7	11.4	25.8	1.6	28.8	28.8	12.3
Cycle Q Clear(g_c), s		17.9	4.3	4.4		2.7	11.4	25.8	1.6	28.8	28.8	12.3
Prop In Lane		1.00		0.25		1.00		1.00	1.00		0.03	1.00
Lane Grp Cap(c), veh/h		539	1215	638		126	442	1098	81	1042	570	401
V/C Ratio(X)		0.93	0.14	0.15		0.62	0.45	0.68	0.57	0.81	0.81	0.86
Avail Cap(c_a), veh/h		539	1741	914		555	964	1960	539	1766	965	677
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		51.9	27.0	27.1		59.3	40.6	34.3	60.2	39.8	39.8	54.1
Incr Delay (d2), s/veh		22.6	0.0	0.0		1.9	0.3	0.3	2.3	0.6	1.1	2.8
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		10.2	2.0	2.2		1.4	5.9	11.0	0.8	13.5	14.8	6.0
LnGrp Delay(d),s/veh		74.5	27.0	27.1		61.1	40.9	34.6	62.6	40.4	40.9	56.9
LnGrp LOS		E	C	C		E	D	C	E	D	D	E
Approach Vol, veh/h			766				1024			1357		
Approach Delay, s/veh			58.1				37.9			41.4		
Approach LOS			E				D			D		

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	55.6	25.0	35.6	20.0	44.0	9.9	50.7
Change Period (Y+Rc), s	5.5	* 5.7	5.5	* 6	5.5	* 5.7	5.5	* 6
Max Green Setting (Gmax), s	19.5	* 64	19.5	* 65	24.5	* 65	19.5	* 64
Max Q Clear Time (g_c+I1), s	3.6	23.7	19.9	27.8	14.3	30.8	4.7	6.4
Green Ext Time (p_c), s	0.0	7.6	0.0	1.5	0.2	7.5	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	40.7
HCM 2010 LOS	D

Notes

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	1110	237
Future Volume (veh/h)	1110	237
Number	2	12
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		0.99
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	1144	244
Adj No. of Lanes	3	1
Peak Hour Factor	0.97	0.97
Percent Heavy Veh, %	2	2
Cap, veh/h	2037	629
Arrive On Green	0.40	0.40
Sat Flow, veh/h	5085	1569
Grp Volume(v), veh/h	1144	244
Grp Sat Flow(s),veh/h/ln	1695	1569
Q Serve(g_s), s	21.7	13.8
Cycle Q Clear(g_c), s	21.7	13.8
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	2037	629
V/C Ratio(X)	0.56	0.39
Avail Cap(c_a), veh/h	2624	810
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	28.9	26.5
Incr Delay (d2), s/veh	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.2	6.0
LnGrp Delay(d),s/veh	29.0	26.7
LnGrp LOS	C	C
Approach Vol, veh/h	1735	
Approach Delay, s/veh	34.2	
Approach LOS	C	
Timer		

Movement	EBL2	EBL	EBT	EBR	WBR	WBR2	NBT	NBR	NBR2	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	658	1	120	720	870	119	1883	411	4	1013	135
Future Volume (vph)	658	1	120	720	870	119	1883	411	4	1013	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8	6.8	6.8	4.6		4.6			4.6	4.0
Lane Util. Factor	0.95	0.95	0.95	0.95	0.88		0.86			0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	0.98	1.00		1.00			1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.89	0.85	0.85		0.97			1.00	0.85
Flt Protected	0.95	0.95	1.00	1.00	1.00		1.00			1.00	1.00
Satd. Flow (prot)	1681	1681	1553	1470	2787		6204			3539	1540
Flt Permitted	0.95	0.95	1.00	1.00	1.00		1.00			1.00	1.00
Satd. Flow (perm)	1681	1681	1553	1470	2787		6204			3539	1540
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.86	0.86	0.88	0.88	0.88	0.92	0.92
Adj. Flow (vph)	693	1	126	758	1012	138	2140	467	5	1101	147
RTOR Reduction (vph)	0	0	43	43	13	0	0	0	0	0	0
Lane Group Flow (vph)	346	348	409	389	1137	0	2612	0	0	1101	147
Confl. Peds. (#/hr)	11	11		11	3	3		3	3		11
Confl. Bikes (#/hr)								8	8		5
Turn Type	Split	Split	NA	Perm	Prot		NA			NA	Free
Protected Phases	4	4	4		2!		6!			2	
Permitted Phases				4	2						Free
Actuated Green, G (s)	38.7	38.7	38.7	38.7	74.9		74.9			74.9	125.0
Effective Green, g (s)	38.7	38.7	38.7	38.7	74.9		74.9			74.9	125.0
Actuated g/C Ratio	0.31	0.31	0.31	0.31	0.60		0.60			0.60	1.00
Clearance Time (s)	6.8	6.8	6.8	6.8	4.6		4.6			4.6	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0		1.0			1.0	
Lane Grp Cap (vph)	520	520	480	455	1669		3717			2120	1540
v/s Ratio Prot	0.21	0.21	0.26		0.41		c0.42			0.31	
v/s Ratio Perm				c0.26							0.10
v/c Ratio	0.67	0.67	0.85	0.86	0.68		0.70			0.52	0.10
Uniform Delay, d1	37.5	37.6	40.5	40.5	17.0		17.3			14.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00			0.99	1.00
Incremental Delay, d2	2.5	2.5	13.2	14.0	2.3		1.1			0.9	0.1
Delay (s)	40.0	40.1	53.7	54.6	19.2		18.5			15.3	0.1
Level of Service	D	D	D	D	B		B			B	A
Approach Delay (s)			47.9				18.5			13.5	
Approach LOS			D				B			B	

Intersection Summary			
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	100.8%	ICU Level of Service	G
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	398	0	293	1	0	1638	1780	0	727
Future Volume (veh/h)	0	0	0	398	0	293	1	0	1638	1780	0	727
Number				3	8	18		1	6	16	5	2
Initial Q (Qb), veh				0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00		1.00		1.00	1.00	
Parking Bus, Adj				1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863		0	1863	1863	0	1863
Adj Flow Rate, veh/h				428	0	315		0	1671	0	0	765
Adj No. of Lanes				2	0	1		0	3	2	0	2
Peak Hour Factor				0.93	0.93	0.93		0.98	0.98	0.98	0.95	0.95
Percent Heavy Veh, %				2	0	2		0	2	2	0	2
Cap, veh/h				740	0	340		0	3528	1933	0	2456
Arrive On Green				0.21	0.00	0.21		0.00	0.69	0.00	0.00	0.69
Sat Flow, veh/h				3442	0	1583		0	5253	2787	0	3632
Grp Volume(v), veh/h				428	0	315		0	1671	0	0	765
Grp Sat Flow(s),veh/h/ln				1721	0	1583		0	1695	1393	0	1770
Q Serve(g_s), s				13.9	0.0	24.4		0.0	18.7	0.0	0.0	10.6
Cycle Q Clear(g_c), s				13.9	0.0	24.4		0.0	18.7	0.0	0.0	10.6
Prop In Lane				1.00		1.00		0.00		1.00	0.00	
Lane Grp Cap(c), veh/h				740	0	340		0	3528	1933	0	2456
V/C Ratio(X)				0.58	0.00	0.93		0.00	0.47	0.00	0.00	0.31
Avail Cap(c_a), veh/h				1327	0	611		0	3528	1933	0	2456
HCM Platoon Ratio				1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00		0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				44.0	0.0	48.1		0.0	8.7	0.0	0.0	7.5
Incr Delay (d2), s/veh				0.3	0.0	6.1		0.0	0.5	0.0	0.0	0.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.7	0.0	11.2		0.0	8.8	0.0	0.0	5.2
LnGrp Delay(d),s/veh				44.3	0.0	54.2		0.0	9.2	0.0	0.0	7.8
LnGrp LOS				D		D			A			A
Approach Vol, veh/h					743				1671			765
Approach Delay, s/veh					48.5				9.2			7.8
Approach LOS					D				A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		91.3				91.3		33.7
Change Period (Y+Rc), s		4.6				4.6		6.8
Max Green Setting (Gmax), s		65.4				65.4		48.2
Max Q Clear Time (g_c+I1), s		12.6				20.7		26.4
Green Ext Time (p_c), s		8.0				7.9		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	18.0
HCM 2010 LOS	B

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	500
Future Volume (veh/h)	500
Number	12
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	0
Adj No. of Lanes	1
Peak Hour Factor	0.95
Percent Heavy Veh, %	2
Cap, veh/h	1099
Arrive On Green	0.00
Sat Flow, veh/h	1583
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	1583
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	1099
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	1099
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	0.0
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (veh/h)	35	251	565	256	11	248	297	213	71	225	1006	216
Future Volume (veh/h)	35	251	565	256	11	248	297	213	71	225	1006	216
Number		3	8	18		7	4	14		1	6	16
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.99		1.00		1.00		1.00		1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1676	1676	1676		1676	1676	1676		1676	1676	1676
Adj Flow Rate, veh/h		295	665	301		306	367	263		247	1105	237
Adj No. of Lanes		2	2	1		2	3	1		2	3	1
Peak Hour Factor		0.85	0.85	0.85		0.81	0.81	0.81		0.91	0.91	0.91
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2
Cap, veh/h		329	890	395		340	1294	402		282	1736	538
Arrive On Green		0.11	0.28	0.28		0.11	0.28	0.28		0.09	0.38	0.38
Sat Flow, veh/h		3097	3185	1416		3097	4577	1422		3097	4577	1418
Grp Volume(v), veh/h		295	665	301		306	367	263		247	1105	237
Grp Sat Flow(s),veh/h/ln		1549	1593	1416		1549	1526	1422		1549	1526	1418
Q Serve(g_s), s		15.7	31.8	32.6		16.3	10.5	27.2		13.2	33.1	20.8
Cycle Q Clear(g_c), s		15.7	31.8	32.6		16.3	10.5	27.2		13.2	33.1	20.8
Prop In Lane		1.00		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h		329	890	395		340	1294	402		282	1736	538
V/C Ratio(X)		0.90	0.75	0.76		0.90	0.28	0.65		0.87	0.64	0.44
Avail Cap(c_a), veh/h		361	1218	542		361	1294	402		361	1761	546
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		73.9	54.9	55.2		73.6	46.8	52.8		75.1	42.5	38.7
Incr Delay (d2), s/veh		21.4	2.9	6.9		22.8	0.4	6.7		14.8	1.1	1.2
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		7.7	14.4	13.5		8.1	4.5	11.5		6.2	14.1	8.3
LnGrp Delay(d),s/veh		95.3	57.8	62.1		96.4	47.2	59.5		89.9	43.5	39.8
LnGrp LOS		F	E	E		F	D	E		F	D	D
Approach Vol, veh/h			1261				936				1589	
Approach Delay, s/veh			67.6				66.7				50.2	
Approach LOS			E				E				D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.8	70.0	23.3	53.3	21.4	69.3	23.9	52.7
Change Period (Y+Rc), s	5.5	* 5.8	5.5	6.0	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	19.5	* 64	19.5	34.0	19.5	* 64	19.5	64.0
Max Q Clear Time (g_c+I1), s	15.2	60.4	17.7	29.2	15.9	35.1	18.3	34.6
Green Ext Time (p_c), s	0.1	3.7	0.0	4.2	0.1	28.4	0.0	12.2

Intersection Summary	
HCM 2010 Ctrl Delay	61.1
HCM 2010 LOS	E

Notes

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Volume (veh/h)	36	226	1440	132
Future Volume (veh/h)	36	226	1440	132
Number		5	2	12
Initial Q (Qb), veh		0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00
Parking Bus, Adj		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1676	1676	1676
Adj Flow Rate, veh/h		260	1655	152
Adj No. of Lanes		2	3	1
Peak Hour Factor		0.87	0.87	0.87
Percent Heavy Veh, %		2	2	2
Cap, veh/h		295	1755	544
Arrive On Green		0.10	0.38	0.38
Sat Flow, veh/h		3097	4577	1418
Grp Volume(v), veh/h		260	1655	152
Grp Sat Flow(s),veh/h/ln		1549	1526	1418
Q Serve(g_s), s		13.9	58.4	12.4
Cycle Q Clear(g_c), s		13.9	58.4	12.4
Prop In Lane		1.00		1.00
Lane Grp Cap(c), veh/h		295	1755	544
V/C Ratio(X)		0.88	0.94	0.28
Avail Cap(c_a), veh/h		361	1756	544
HCM Platoon Ratio		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00
Uniform Delay (d), s/veh		74.8	49.8	35.6
Incr Delay (d2), s/veh		16.7	11.1	0.6
Initial Q Delay(d3),s/veh		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		6.6	26.5	4.9
LnGrp Delay(d),s/veh		91.5	60.9	36.2
LnGrp LOS		F	E	D
Approach Vol, veh/h			2067	
Approach Delay, s/veh			62.9	
Approach LOS			E	
Timer				

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (veh/h)	422	401	101	1	198	266	247	2	57	1230	161	1
Future Volume (veh/h)	422	401	101	1	198	266	247	2	57	1230	161	1
Number	3	8	18		7	4	14		1	6	16	
Initial Q (Qb), veh	0	0	0		0	0	0		0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.98		1.00		0.98		1.00		0.99	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	1863	1863		1863	1863	1863		1863	1863	1863	
Adj Flow Rate, veh/h	474	451	113		215	412	186		75	1618	212	
Adj No. of Lanes	2	2	1		2	2	1		2	4	1	
Peak Hour Factor	0.89	0.89	0.89		0.92	0.92	0.92		0.76	0.76	0.76	
Percent Heavy Veh, %	2	2	2		2	2	2		2	2	2	
Cap, veh/h	480	895	393		265	701	291		119	2738	668	
Arrive On Green	0.14	0.25	0.25		0.07	0.19	0.19		0.03	0.43	0.43	
Sat Flow, veh/h	3442	3539	1554		3548	3725	1546		3442	6408	1562	
Grp Volume(v), veh/h	474	451	113		215	412	186		75	1618	212	
Grp Sat Flow(s),veh/h/ln	1721	1770	1554		1774	1863	1546		1721	1602	1562	
Q Serve(g_s), s	19.2	15.3	8.2		8.4	14.1	15.5		3.0	27.1	12.6	
Cycle Q Clear(g_c), s	19.2	15.3	8.2		8.4	14.1	15.5		3.0	27.1	12.6	
Prop In Lane	1.00		1.00		1.00		1.00		1.00		1.00	
Lane Grp Cap(c), veh/h	480	895	393		265	701	291		119	2738	668	
V/C Ratio(X)	0.99	0.50	0.29		0.81	0.59	0.64		0.63	0.59	0.32	
Avail Cap(c_a), veh/h	480	895	393		494	905	376		480	2940	717	
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Uniform Delay (d), s/veh	60.1	44.8	42.1		63.8	51.8	52.4		66.7	30.7	26.6	
Incr Delay (d2), s/veh	37.8	0.7	0.6		2.3	1.3	4.0		3.4	0.2	0.2	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	11.7	7.5	3.6		4.2	7.4	7.0		1.5	11.9	5.5	
LnGrp Delay(d),s/veh	97.9	45.4	42.7		66.0	53.2	56.4		70.0	30.9	26.7	
LnGrp LOS	F	D	D		E	D	E		E	C	C	
Approach Vol, veh/h		1038				813				1905		
Approach Delay, s/veh		69.1				57.3				32.0		
Approach LOS		E				E				C		

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	72.3	25.0	32.3	17.0	65.6	16.0	41.4
Change Period (Y+Rc), s	5.5	* 5.8	5.5	6.0	5.5	* 5.8	5.5	* 6
Max Green Setting (Gmax), s	19.5	* 64	19.5	34.0	19.5	* 64	19.5	* 34
Max Q Clear Time (g_c+I1), s	5.0	33.7	21.2	17.5	11.4	29.1	10.4	17.3
Green Ext Time (p_c), s	0.1	28.8	0.0	7.8	0.1	30.7	0.1	9.1

Intersection Summary	
HCM 2010 Ctrl Delay	42.2
HCM 2010 LOS	D

Notes

Movement	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (veh/h)	216	1411	257
Future Volume (veh/h)	216	1411	257
Number	5	2	12
Initial Q (Qb), veh	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863
Adj Flow Rate, veh/h	235	1534	279
Adj No. of Lanes	2	3	1
Peak Hour Factor	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2
Cap, veh/h	283	2416	750
Arrive On Green	0.08	0.48	0.48
Sat Flow, veh/h	3442	5085	1578
Grp Volume(v), veh/h	235	1534	279
Grp Sat Flow(s),veh/h/ln	1721	1695	1578
Q Serve(g_s), s	9.4	31.7	15.8
Cycle Q Clear(g_c), s	9.4	31.7	15.8
Prop In Lane	1.00		1.00
Lane Grp Cap(c), veh/h	283	2416	750
V/C Ratio(X)	0.83	0.64	0.37
Avail Cap(c_a), veh/h	480	2416	750
HCM Platoon Ratio	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.2	27.6	23.4
Incr Delay (d2), s/veh	2.4	0.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	14.9	7.0
LnGrp Delay(d),s/veh	65.6	28.4	24.0
LnGrp LOS	E	C	C
Approach Vol, veh/h		2048	
Approach Delay, s/veh		32.1	
Approach LOS		C	
Timer			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1230	0	322	0	0	0	0	1652	228	0	1558	403
Future Volume (veh/h)	1230	0	322	0	0	0	0	1652	228	0	1558	403
Number	7	4	14				1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	1337	0	350				0	1856	0	0	1693	0
Adj No. of Lanes	3	0	2				0	4	1	0	3	1
Peak Hour Factor	0.92	0.92	0.92				0.89	0.89	0.89	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2				0	2	2	0	2	2
Cap, veh/h	1431	0	797				0	4548	966	0	3411	966
Arrive On Green	0.29	0.00	0.29				0.00	0.61	0.00	0.00	0.61	0.00
Sat Flow, veh/h	5003	0	2787				0	7451	1583	0	5588	1583
Grp Volume(v), veh/h	1337	0	350				0	1856	0	0	1693	0
Grp Sat Flow(s),veh/h/ln	1668	0	1393				0	1863	1583	0	1863	1583
Q Serve(g_s), s	28.6	0.0	11.3				0.0	14.2	0.0	0.0	18.6	0.0
Cycle Q Clear(g_c), s	28.6	0.0	11.3				0.0	14.2	0.0	0.0	18.6	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	1431	0	797				0	4548	966	0	3411	966
V/C Ratio(X)	0.93	0.00	0.44				0.00	0.41	0.00	0.00	0.50	0.00
Avail Cap(c_a), veh/h	1514	0	844				0	4548	966	0	3411	966
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	38.3	0.0	32.1				0.0	11.1	0.0	0.0	12.0	0.0
Incr Delay (d2), s/veh	10.4	0.0	0.1				0.0	0.3	0.0	0.0	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.5	0.0	4.3				0.0	7.3	0.0	0.0	9.7	0.0
LnGrp Delay(d),s/veh	48.7	0.0	32.2				0.0	11.4	0.0	0.0	12.5	0.0
LnGrp LOS	D		C					B			B	
Approach Vol, veh/h		1687						1856			1693	
Approach Delay, s/veh		45.3						11.4			12.5	
Approach LOS		D						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		71.8		38.2		71.8		
Change Period (Y+Rc), s		* 4.7		6.7		4.7		
Max Green Setting (Gmax), s		* 66		33.3		65.3		
Max Q Clear Time (g_c+I1), s		20.6		30.6		16.2		
Green Ext Time (p_c), s		16.2		0.8		16.5		

Intersection Summary	
HCM 2010 Ctrl Delay	22.7
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	497	0	453	0	2493	359	0	1529	1217
Future Volume (veh/h)	0	0	0	497	0	453	0	2493	359	0	1529	1217
Number				3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h				592	0	539	0	2801	0	0	1644	0
Adj No. of Lanes				2	0	2	0	3	1	0	3	2
Peak Hour Factor				0.84	0.84	0.84	0.89	0.89	0.89	0.93	0.93	0.93
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				739	0	598	0	3778	1071	0	3438	1884
Arrive On Green				0.21	0.00	0.21	0.00	0.68	0.00	0.00	0.68	0.00
Sat Flow, veh/h				3442	0	2787	0	5588	1583	0	5253	2787
Grp Volume(v), veh/h				592	0	539	0	2801	0	0	1644	0
Grp Sat Flow(s),veh/h/ln				1721	0	1393	0	1863	1583	0	1695	1393
Q Serve(g_s), s				17.9	0.0	20.7	0.0	35.8	0.0	0.0	17.0	0.0
Cycle Q Clear(g_c), s				17.9	0.0	20.7	0.0	35.8	0.0	0.0	17.0	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				739	0	598	0	3778	1071	0	3438	1884
V/C Ratio(X)				0.80	0.00	0.90	0.00	0.74	0.00	0.00	0.48	0.00
Avail Cap(c_a), veh/h				1032	0	836	0	3778	1071	0	3438	1884
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				41.0	0.0	42.0	0.0	11.6	0.0	0.0	8.5	0.0
Incr Delay (d2), s/veh				2.1	0.0	8.0	0.0	1.3	0.0	0.0	0.5	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.8	0.0	8.6	0.0	18.6	0.0	0.0	8.1	0.0
LnGrp Delay(d),s/veh				43.0	0.0	50.1	0.0	12.9	0.0	0.0	9.0	0.0
LnGrp LOS				D		D		B			A	
Approach Vol, veh/h					1131			2801			1644	
Approach Delay, s/veh					46.4			12.9			9.0	
Approach LOS					D			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		79.4				79.4		30.6
Change Period (Y+Rc), s		* 5				5.0		7.0
Max Green Setting (Gmax), s		* 65				65.0		33.0
Max Q Clear Time (g_c+I1), s		19.0				37.8		22.7
Green Ext Time (p_c), s		26.7				19.2		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	18.5
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	186	36	179	61	23	57	33	155	2667	23	2	62
Future Volume (veh/h)	186	36	179	61	23	57	33	155	2667	23	2	62
Number	7	4	14	3	8	18		1	6	16		5
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0		0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.96		1.00		0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1900		1863	1863	1900		1863
Adj Flow Rate, veh/h	224	43	216	79	30	74		167	2868	25		68
Adj No. of Lanes	0	1	1	1	1	0		2	3	0		1
Peak Hour Factor	0.83	0.83	0.83	0.77	0.77	0.77		0.93	0.93	0.93		0.91
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2		2
Cap, veh/h	260	50	272	181	47	117		219	2688	23		87
Arrive On Green	0.17	0.17	0.17	0.10	0.10	0.10		0.06	0.52	0.52		0.05
Sat Flow, veh/h	1500	288	1567	1774	464	1145		3442	5199	45		1774
Grp Volume(v), veh/h	267	0	216	79	0	104		167	1867	1026		68
Grp Sat Flow(s),veh/h/ln	1788	0	1567	1774	0	1609		1721	1695	1854		1774
Q Serve(g_s), s	18.9	0.0	17.2	5.5	0.0	8.1		6.2	67.4	67.4		4.9
Cycle Q Clear(g_c), s	18.9	0.0	17.2	5.5	0.0	8.1		6.2	67.4	67.4		4.9
Prop In Lane	0.84		1.00	1.00		0.71		1.00		0.02		1.00
Lane Grp Cap(c), veh/h	310	0	272	181	0	164		219	1753	958		87
V/C Ratio(X)	0.86	0.00	0.79	0.44	0.00	0.63		0.76	1.07	1.07		0.79
Avail Cap(c_a), veh/h	473	0	415	469	0	426		525	1753	958		275
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	52.4	0.0	51.7	55.0	0.0	56.2		60.1	31.5	31.5		61.3
Incr Delay (d2), s/veh	6.5	0.0	2.9	0.6	0.0	1.5		2.1	41.3	49.8		5.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
%ile BackOfQ(50%),veh/ln	9.9	0.0	7.7	2.7	0.0	3.7		3.0	41.5	47.6		2.6
LnGrp Delay(d),s/veh	58.8	0.0	54.6	55.7	0.0	57.7		62.2	72.8	81.3		67.1
LnGrp LOS	E		D	E		E		E	F	F		E
Approach Vol, veh/h		483			183				3060			
Approach Delay, s/veh		56.9			56.8				75.1			
Approach LOS		E			E				E			

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.4	70.1		28.1	11.2	72.3		18.8
Change Period (Y+Rc), s	* 5.1	* 4.9		5.5	* 4.8	* 4.9		5.5
Max Green Setting (Gmax), s	* 20	* 65		34.5	* 20	* 65		34.5
Max Q Clear Time (g_c+I1), s	8.2	67.2		20.9	6.9	69.4		10.1
Green Ext Time (p_c), s	0.1	0.0		0.6	0.0	0.0		0.2

Intersection Summary		
HCM 2010 Ctrl Delay		68.0
HCM 2010 LOS		E

Notes

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	2424	96
Future Volume (veh/h)	2424	96
Number	2	12
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		0.99
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	2664	105
Adj No. of Lanes	3	1
Peak Hour Factor	0.91	0.91
Percent Heavy Veh, %	2	2
Cap, veh/h	2542	785
Arrive On Green	0.50	0.50
Sat Flow, veh/h	5085	1571
Grp Volume(v), veh/h	2664	105
Grp Sat Flow(s),veh/h/ln	1695	1571
Q Serve(g_s), s	65.2	4.7
Cycle Q Clear(g_c), s	65.2	4.7
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	2542	785
V/C Ratio(X)	1.05	0.13
Avail Cap(c_a), veh/h	2542	785
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	32.6	17.5
Incr Delay (d2), s/veh	32.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	37.9	2.0
LnGrp Delay(d),s/veh	64.6	17.5
LnGrp LOS	F	B
Approach Vol, veh/h	2837	
Approach Delay, s/veh	62.9	
Approach LOS	E	
Timer		

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	689	22	6	597	0	704	46
Future Volume (veh/h)	689	22	6	597	0	704	46
Number	7	14	1	6		2	12
Initial Q (Qb), veh	0	0	0	0		0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00				1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00		1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863		1863	1863
Adj Flow Rate, veh/h	861	28	6	615		819	53
Adj No. of Lanes	2	1	1	2		2	1
Peak Hour Factor	0.80	0.80	0.97	0.97		0.86	0.86
Percent Heavy Veh, %	2	2	2	2		2	2
Cap, veh/h	1011	473	9	1550		1112	962
Arrive On Green	0.29	0.29	0.00	0.44		0.31	0.31
Sat Flow, veh/h	3442	1583	1774	3632		3632	1583
Grp Volume(v), veh/h	861	28	6	615		819	53
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1770		1770	1583
Q Serve(g_s), s	10.9	0.6	0.2	5.5		9.5	0.6
Cycle Q Clear(g_c), s	10.9	0.6	0.2	5.5		9.5	0.6
Prop In Lane	1.00	1.00	1.00				1.00
Lane Grp Cap(c), veh/h	1011	473	9	1550		1112	962
V/C Ratio(X)	0.85	0.06	0.70	0.40		0.74	0.06
Avail Cap(c_a), veh/h	4060	1876	749	4091		4068	2285
HCM Platoon Ratio	1.00	1.00	1.00	1.00		1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00		1.00	1.00
Uniform Delay (d), s/veh	15.4	11.6	23.0	8.8		14.1	3.7
Incr Delay (d2), s/veh	0.8	0.0	32.2	0.1		0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.6	0.2	2.7		4.6	0.5
LnGrp Delay(d),s/veh	16.2	11.6	55.1	8.9		14.5	3.7
LnGrp LOS	B	B	E	A		B	A
Approach Vol, veh/h	889			621		872	
Approach Delay, s/veh	16.0			9.3		13.8	
Approach LOS	B			A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	5.7	21.4		19.1		27.1		
Change Period (Y+Rc), s	5.5	* 6.9		5.5		* 6.9		
Max Green Setting (Gmax), s	19.5	* 53		54.5		* 53		
Max Q Clear Time (g_c+I1), s	2.2	11.5		12.9		7.5		
Green Ext Time (p_c), s	0.0	3.0		0.7		3.0		

Intersection Summary	
HCM 2010 Ctrl Delay	13.5
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	663	650	3	219	115	143	470
Future Volume (veh/h)	663	650	3	219	115	143	470
Number	1	6		2	12	3	18
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863		1863	1863	1863	1863
Adj Flow Rate, veh/h	721	707		270	142	155	511
Adj No. of Lanes	1	2		2	1	1	1
Peak Hour Factor	0.92	0.92		0.81	0.81	0.92	0.92
Percent Heavy Veh, %	2	2		2	2	2	2
Cap, veh/h	594	1852		459	205	603	538
Arrive On Green	0.34	0.52		0.13	0.13	0.34	0.34
Sat Flow, veh/h	1774	3632		3632	1583	1774	1583
Grp Volume(v), veh/h	721	707		270	142	155	511
Grp Sat Flow(s),veh/h/ln	1774	1770		1770	1583	1774	1583
Q Serve(g_s), s	29.8	10.6		6.4	7.6	5.6	28.0
Cycle Q Clear(g_c), s	29.8	10.6		6.4	7.6	5.6	28.0
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	594	1852		459	205	603	538
V/C Ratio(X)	1.21	0.38		0.59	0.69	0.26	0.95
Avail Cap(c_a), veh/h	594	2523		2519	1127	688	614
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.6	12.6		36.5	37.0	21.2	28.6
Incr Delay (d2), s/veh	110.7	0.0		0.4	1.6	0.1	22.2
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	32.8	5.1		3.1	3.4	2.8	15.5
LnGrp Delay(d),s/veh	140.3	12.7		36.9	38.6	21.3	50.8
LnGrp LOS	F	B		D	D	C	D
Approach Vol, veh/h		1428		412		666	
Approach Delay, s/veh		77.1		37.5		44.0	
Approach LOS		E		D		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	35.0	18.2				53.2		35.7
Change Period (Y+Rc), s	* 5.2	* 6.7				* 6.7		5.5
Max Green Setting (Gmax), s	* 30	* 63				* 63		34.5
Max Q Clear Time (g_c+I1), s	31.8	9.6				12.6		30.0
Green Ext Time (p_c), s	0.0	1.9				1.9		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	61.8
HCM 2010 LOS	E

Notes

Appendix D

Analysis Worksheets for Cumulative Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	510	230	160	650	90	190	2720	90	20	980	70
Future Volume (veh/h)	160	510	230	160	650	90	190	2720	90	20	980	70
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	174	554	250	174	707	98	207	2957	98	22	1065	0
Adj No. of Lanes	1	1	1	1	1	1	1	3	0	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	530	450	126	530	450	229	2296	75	27	1731	539
Arrive On Green	0.07	0.28	0.28	0.07	0.28	0.28	0.13	0.45	0.45	0.02	0.34	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5054	165	1774	5085	1583
Grp Volume(v), veh/h	174	554	250	174	707	98	207	1972	1083	22	1065	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1829	1774	1695	1583
Q Serve(g_s), s	10.5	42.0	19.8	10.5	42.0	7.0	17.0	67.1	67.1	1.8	25.8	0.0
Cycle Q Clear(g_c), s	10.5	42.0	19.8	10.5	42.0	7.0	17.0	67.1	67.1	1.8	25.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	126	530	450	126	530	450	229	1540	831	27	1731	539
V/C Ratio(X)	1.38	1.05	0.56	1.38	1.33	0.22	0.90	1.28	1.30	0.81	0.62	0.00
Avail Cap(c_a), veh/h	126	530	450	126	530	450	287	1540	831	60	1731	539
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	68.6	52.8	44.9	68.6	52.8	40.3	63.4	40.3	40.3	72.5	40.6	0.0
Incr Delay (d2), s/veh	212.4	51.6	0.9	212.4	163.0	0.1	23.1	131.1	145.2	18.1	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.6	29.1	8.8	12.6	45.5	3.1	9.8	59.3	67.2	1.0	12.1	0.0
LnGrp Delay(d),s/veh	281.0	104.4	45.8	281.0	215.9	40.4	86.5	171.4	185.5	90.6	41.2	0.0
LnGrp LOS	F	F	D	F	F	D	F	F	F	F	D	
Approach Vol, veh/h		978			979			3262			1087	
Approach Delay, s/veh		120.9			209.9			170.7			42.2	
Approach LOS		F			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.6	57.7	16.0	49.4	7.8	74.5	16.0	49.4
Change Period (Y+Rc), s	5.5	7.4	5.5	7.4	5.5	7.4	5.5	* 7.4
Max Green Setting (Gmax), s	23.9	48.2	10.5	41.6	5.0	67.1	10.5	* 42
Max Q Clear Time (g_c+I1), s	19.0	27.8	12.5	44.0	3.8	69.1	12.5	44.0
Green Ext Time (p_c), s	0.1	14.9	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		146.9
HCM 2010 LOS		F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	490	10	70	770	10	40	760	160	10	130	130
Future Volume (veh/h)	120	490	10	70	770	10	40	760	160	10	130	130
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	130	533	11	76	837	11	43	826	174	11	141	141
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	133	958	20	96	892	12	55	788	166	37	964	819
Arrive On Green	0.07	0.27	0.27	0.05	0.25	0.25	0.03	0.53	0.53	0.02	0.52	0.52
Sat Flow, veh/h	1774	3546	73	1774	3577	47	1774	1493	314	1774	1863	1583
Grp Volume(v), veh/h	130	266	278	76	414	434	43	0	1000	11	141	141
Grp Sat Flow(s),veh/h/ln	1774	1770	1850	1774	1770	1854	1774	0	1807	1774	1863	1583
Q Serve(g_s), s	9.8	17.2	17.3	5.7	30.6	30.6	3.2	0.0	70.5	0.8	5.3	6.3
Cycle Q Clear(g_c), s	9.8	17.2	17.3	5.7	30.6	30.6	3.2	0.0	70.5	0.8	5.3	6.3
Prop In Lane	1.00		0.04	1.00		0.03	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	133	478	500	96	441	462	55	0	953	37	964	819
V/C Ratio(X)	0.98	0.56	0.56	0.79	0.94	0.94	0.78	0.00	1.05	0.29	0.15	0.17
Avail Cap(c_a), veh/h	133	478	500	130	450	472	122	0	953	246	1112	946
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.7	41.9	41.9	62.5	49.2	49.2	64.3	0.0	31.6	64.4	16.8	17.1
Incr Delay (d2), s/veh	71.3	1.8	1.7	14.7	27.7	26.9	8.4	0.0	42.8	1.6	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	8.7	9.1	3.2	18.3	19.1	1.7	0.0	46.3	0.4	2.8	2.9
LnGrp Delay(d),s/veh	133.0	43.7	43.6	77.2	76.8	76.0	72.7	0.0	74.4	66.0	17.1	17.5
LnGrp LOS	F	D	D	E	E	E	E		F	E	B	B
Approach Vol, veh/h		674			924			1043			293	
Approach Delay, s/veh		60.9			76.5			74.3			19.2	
Approach LOS		E			E			E			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	37.8	8.2	73.7	11.2	40.6	6.8	75.0
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.5
Max Green Setting (Gmax), s	10.0	34.0	9.2	79.8	9.8	34.2	18.5	70.5
Max Q Clear Time (g_c+I1), s	11.8	32.6	5.2	8.3	7.7	19.3	2.8	72.5
Green Ext Time (p_c), s	0.0	0.7	0.0	55.8	0.0	8.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	66.4
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	600	10	10	700	10	10	250	30	10	10	110
Future Volume (veh/h)	90	600	10	10	700	10	10	250	30	10	10	110
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	98	652	11	11	761	11	11	272	33	11	11	120
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	338	1053	18	409	1056	15	82	385	46	91	48	327
Arrive On Green	0.58	0.58	0.58	0.58	0.58	0.58	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	695	1826	31	769	1832	26	25	1602	190	49	200	1360
Grp Volume(v), veh/h	98	0	663	11	0	772	316	0	0	142	0	0
Grp Sat Flow(s),veh/h/ln	695	0	1857	769	0	1858	1817	0	0	1609	0	0
Q Serve(g_s), s	5.8	0.0	11.5	0.5	0.0	14.8	0.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	20.6	0.0	11.5	12.0	0.0	14.8	7.8	0.0	0.0	3.6	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.01	0.03		0.10	0.08		0.85
Lane Grp Cap(c), veh/h	338	0	1071	409	0	1071	512	0	0	465	0	0
V/C Ratio(X)	0.29	0.00	0.62	0.03	0.00	0.72	0.62	0.00	0.00	0.31	0.00	0.00
Avail Cap(c_a), veh/h	384	0	1192	460	0	1193	795	0	0	708	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.0	0.0	6.8	10.8	0.0	7.5	17.1	0.0	0.0	15.5	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.8	0.0	0.0	1.9	1.2	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	6.0	0.1	0.0	7.9	4.0	0.0	0.0	1.6	0.0	0.0
LnGrp Delay(d),s/veh	15.5	0.0	7.7	10.8	0.0	9.4	18.3	0.0	0.0	15.9	0.0	0.0
LnGrp LOS	B		A	B		A	B			B		
Approach Vol, veh/h		761			783			316			142	
Approach Delay, s/veh		8.7			9.5			18.3			15.9	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		16.3		32.8		16.3		32.8
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		19.5		31.5		19.5		31.5
Max Q Clear Time (g_c+I1), s		9.8		22.6		5.6		16.8
Green Ext Time (p_c), s		2.0		5.7		2.4		8.1

Intersection Summary	
HCM 2010 Ctrl Delay	11.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	290	360	30	150	600	370	10	1170	40	160	600	190
Future Volume (veh/h)	290	360	30	150	600	370	10	1170	40	160	600	190
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	315	391	33	163	652	402	11	1272	43	174	652	207
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	232	606	515	186	557	473	38	1068	478	197	1386	827
Arrive On Green	0.13	0.33	0.33	0.10	0.30	0.30	0.02	0.30	0.30	0.11	0.39	0.39
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	315	391	33	163	652	402	11	1272	43	174	652	207
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	18.5	25.3	2.0	12.8	42.2	33.7	0.9	42.6	2.8	13.6	19.4	10.1
Cycle Q Clear(g_c), s	18.5	25.3	2.0	12.8	42.2	33.7	0.9	42.6	2.8	13.6	19.4	10.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	232	606	515	186	557	473	38	1068	478	197	1386	827
V/C Ratio(X)	1.36	0.65	0.06	0.88	1.17	0.85	0.29	1.19	0.09	0.88	0.47	0.25
Avail Cap(c_a), veh/h	232	606	515	225	557	473	239	1068	478	308	1386	827
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.3	40.7	32.8	62.3	49.5	46.5	68.0	49.3	35.4	61.8	32.0	18.5
Incr Delay (d2), s/veh	185.3	1.9	0.0	23.9	94.9	13.0	1.6	95.5	0.0	11.3	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.0	13.3	0.9	7.5	36.3	16.4	0.4	34.9	1.2	7.3	9.5	4.4
LnGrp Delay(d),s/veh	246.6	42.5	32.8	86.2	144.4	59.5	69.6	144.8	35.4	73.2	32.1	18.6
LnGrp LOS	F	D	C	F	F	E	E	F	D	E	C	B
Approach Vol, veh/h		739			1217			1326			1033	
Approach Delay, s/veh		129.1			108.6			140.6			36.3	
Approach LOS		F			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	49.0	7.5	61.7	19.3	52.7	20.2	49.0
Change Period (Y+Rc), s	4.5	6.8	4.5	* 6.4	4.5	6.8	4.5	6.4
Max Green Setting (Gmax), s	18.5	42.2	19.0	* 49	17.9	42.8	24.5	42.6
Max Q Clear Time (g_c+I1), s	20.5	44.2	2.9	21.4	14.8	27.3	15.6	44.6
Green Ext Time (p_c), s	0.0	0.0	0.0	9.9	0.0	4.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	104.6
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	330	0	60	740	70	10	570	40	40	720	380
Future Volume (veh/h)	220	330	0	60	740	70	10	570	40	40	720	380
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	239	359	0	65	804	76	11	620	43	43	783	413
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	212	948	0	82	730	69	13	866	60	55	632	332
Arrive On Green	0.12	0.51	0.00	0.05	0.44	0.44	0.01	0.26	0.26	0.03	0.28	0.28
Sat Flow, veh/h	1774	1863	0	1774	1676	158	1774	3359	233	1774	2245	1179
Grp Volume(v), veh/h	239	359	0	65	0	880	11	326	337	43	616	580
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1774	0	1835	1774	1770	1822	1774	1770	1655
Q Serve(g_s), s	17.5	17.2	0.0	5.3	0.0	63.7	0.9	24.5	24.6	3.5	41.2	41.2
Cycle Q Clear(g_c), s	17.5	17.2	0.0	5.3	0.0	63.7	0.9	24.5	24.6	3.5	41.2	41.2
Prop In Lane	1.00		0.00	1.00		0.09	1.00		0.13	1.00		0.71
Lane Grp Cap(c), veh/h	212	948	0	82	0	799	13	456	470	55	498	466
V/C Ratio(X)	1.13	0.38	0.00	0.79	0.00	1.10	0.84	0.72	0.72	0.78	1.24	1.24
Avail Cap(c_a), veh/h	212	948	0	147	0	799	61	478	492	79	498	466
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.4	21.9	0.0	69.0	0.0	41.3	72.5	49.4	49.4	70.4	52.5	52.5
Incr Delay (d2), s/veh	99.8	0.1	0.0	6.2	0.0	63.3	37.6	4.0	3.9	16.1	122.8	126.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.4	8.8	0.0	2.7	0.0	46.2	0.6	12.5	12.9	2.0	37.1	35.2
LnGrp Delay(d),s/veh	164.2	22.0	0.0	75.2	0.0	104.6	110.1	53.4	53.4	86.4	175.4	179.3
LnGrp LOS	F	C		E		F	F	D	D	F	F	F
Approach Vol, veh/h		598			945			674			1239	
Approach Delay, s/veh		78.8			102.5			54.3			174.1	
Approach LOS		E			F			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	70.5	5.6	48.2	11.3	81.2	9.1	44.7
Change Period (Y+Rc), s	4.5	6.8	4.5	* 7	4.5	* 6.8	4.5	7.0
Max Green Setting (Gmax), s	17.5	63.7	5.0	* 41	12.1	* 70	6.5	39.5
Max Q Clear Time (g_c+I1), s	19.5	65.7	2.9	43.2	7.3	19.2	5.5	26.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	5.1	0.0	5.7

Intersection Summary	
HCM 2010 Ctrl Delay	114.7
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	20	10	10	130	190	70	310	10	90	120	30
Future Volume (veh/h)	50	20	10	10	130	190	70	310	10	90	120	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	54	22	11	11	141	207	76	337	11	98	130	33
Adj No. of Lanes	2	1	1	2	1	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	760	417	354	1011	417	354	724	745	333	526	541	242
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.21	0.21	0.21	0.15	0.15	0.15
Sat Flow, veh/h	1996	1863	1583	2658	1863	1583	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	54	22	11	11	141	207	76	337	11	98	130	33
Grp Sat Flow(s),veh/h/ln	998	1863	1583	1329	1863	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	0.8	0.3	0.2	0.1	2.1	3.8	0.6	2.7	0.2	0.8	1.1	0.6
Cycle Q Clear(g_c), s	2.8	0.3	0.2	0.4	2.1	3.8	0.6	2.7	0.2	0.8	1.1	0.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	760	417	354	1011	417	354	724	745	333	526	541	242
V/C Ratio(X)	0.07	0.05	0.03	0.01	0.34	0.58	0.10	0.45	0.03	0.19	0.24	0.14
Avail Cap(c_a), veh/h	1443	1054	896	1920	1054	896	2105	2165	968	1894	1948	872
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.9	10.0	9.9	10.1	10.7	11.3	10.4	11.3	10.3	12.1	12.2	12.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.5	1.5	0.1	0.4	0.0	0.2	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.1	0.0	1.1	1.8	0.3	1.4	0.1	0.4	0.5	0.3
LnGrp Delay(d),s/veh	11.9	10.0	10.0	10.1	11.1	12.9	10.5	11.7	10.3	12.2	12.4	12.2
LnGrp LOS	B	B	A	B	B	B	B	B	B	B	B	B
Approach Vol, veh/h		87			359			424			261	
Approach Delay, s/veh		11.2			12.1			11.4			12.3	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		11.4		11.8		9.5		11.8
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		20.0		18.5		18.0		18.5
Max Q Clear Time (g_c+I1), s		4.7		4.8		3.1		5.8
Green Ext Time (p_c), s		2.2		1.7		1.0		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	11.8
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	220	0	30	1040	480	300
Future Volume (veh/h)	220	0	30	1040	480	300
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	239	0	33	1130	522	326
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	300	268	41	1866	762	475
Arrive On Green	0.17	0.00	0.02	0.53	0.36	0.36
Sat Flow, veh/h	1774	1583	1774	3632	2189	1306
Grp Volume(v), veh/h	239	0	33	1130	441	407
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1632
Q Serve(g_s), s	5.1	0.0	0.7	8.7	8.3	8.3
Cycle Q Clear(g_c), s	5.1	0.0	0.7	8.7	8.3	8.3
Prop In Lane	1.00	1.00	1.00			0.80
Lane Grp Cap(c), veh/h	300	268	41	1866	644	594
V/C Ratio(X)	0.80	0.00	0.81	0.61	0.68	0.69
Avail Cap(c_a), veh/h	1068	953	951	4967	1264	1166
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.6	0.0	19.1	6.4	10.6	10.6
Incr Delay (d2), s/veh	1.8	0.0	12.7	0.1	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	0.5	4.1	4.0	3.7
LnGrp Delay(d),s/veh	17.5	0.0	31.7	6.6	11.0	11.1
LnGrp LOS	B		C	A	B	B
Approach Vol, veh/h	239			1163	848	
Approach Delay, s/veh	17.5			7.3	11.1	
Approach LOS	B			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.4	20.8				27.2		12.0
Change Period (Y+Rc), s	5.5	* 6.5				* 6.5		5.4
Max Green Setting (Gmax), s	21.0	* 28				* 55		23.6
Max Q Clear Time (g_c+I1), s	2.7	10.3				10.7		7.1
Green Ext Time (p_c), s	0.0	4.0				4.2		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	10	60	30	70	200	20	1210	20	70	1190	40
Future Volume (veh/h)	90	10	60	30	70	200	20	1210	20	70	1190	40
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	98	11	65	33	76	217	22	1315	22	76	1293	43
Adj No. of Lanes	2	1	1	1	1	1	2	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	202	363	308	59	315	268	85	1618	724	125	1779	796
Arrive On Green	0.06	0.19	0.19	0.03	0.17	0.17	0.02	0.46	0.46	0.07	0.50	0.50
Sat Flow, veh/h	3442	1863	1583	1774	1863	1583	3442	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	98	11	65	33	76	217	22	1315	22	76	1293	43
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1863	1583	1721	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.0	0.4	2.5	1.3	2.6	9.7	0.5	23.6	0.6	3.1	21.1	1.0
Cycle Q Clear(g_c), s	2.0	0.4	2.5	1.3	2.6	9.7	0.5	23.6	0.6	3.1	21.1	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	202	363	308	59	315	268	85	1618	724	125	1779	796
V/C Ratio(X)	0.48	0.03	0.21	0.56	0.24	0.81	0.26	0.81	0.03	0.61	0.73	0.05
Avail Cap(c_a), veh/h	234	456	387	121	456	387	234	1618	724	434	2117	947
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.5	24.0	24.9	35.0	26.5	29.4	35.2	17.3	11.0	33.2	14.3	9.3
Incr Delay (d2), s/veh	1.8	0.0	0.3	8.0	0.4	8.1	1.6	3.3	0.0	4.8	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.2	1.1	0.8	1.4	4.8	0.2	12.2	0.2	1.7	10.5	0.4
LnGrp Delay(d),s/veh	35.3	24.0	25.2	43.0	26.9	37.5	36.8	20.5	11.0	38.0	15.4	9.4
LnGrp LOS	D	C	C	D	C	D	D	C	B	D	B	A
Approach Vol, veh/h		174			326			1359			1412	
Approach Delay, s/veh		30.8			35.6			20.6			16.4	
Approach LOS		C			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	41.5	7.0	18.8	9.7	38.1	8.8	16.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	44.0	5.0	18.0	18.0	31.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.5	23.1	3.3	4.5	5.1	25.6	4.0	11.7
Green Ext Time (p_c), s	0.0	13.9	0.0	1.1	0.1	4.9	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	20.8
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1030	620	10	40	730	10	10	50	20	10	10	460
Future Volume (veh/h)	1030	620	10	40	730	10	10	50	20	10	10	460
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	1120	674	0	43	793	11	11	54	22	11	11	500
Adj No. of Lanes	1	2	1	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	683	2032	909	55	787	11	14	70	28	149	149	870
Arrive On Green	0.39	0.57	0.00	0.03	0.22	0.22	0.06	0.06	0.06	0.16	0.16	0.16
Sat Flow, veh/h	1774	3539	1583	1774	3574	50	223	1095	446	909	909	1583
Grp Volume(v), veh/h	1120	674	0	43	393	411	87	0	0	22	0	500
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1854	1765	0	0	1817	0	1583
Q Serve(g_s), s	52.5	13.7	0.0	3.3	30.0	30.0	6.6	0.0	0.0	1.4	0.0	22.4
Cycle Q Clear(g_c), s	52.5	13.7	0.0	3.3	30.0	30.0	6.6	0.0	0.0	1.4	0.0	22.4
Prop In Lane	1.00		1.00	1.00		0.03	0.13		0.25	0.50		1.00
Lane Grp Cap(c), veh/h	683	2032	909	55	390	408	113	0	0	299	0	870
V/C Ratio(X)	1.64	0.33	0.00	0.78	1.01	1.01	0.77	0.00	0.00	0.07	0.00	0.57
Avail Cap(c_a), veh/h	683	2032	909	120	390	408	290	0	0	299	0	870
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.9	15.3	0.0	65.6	53.1	53.1	62.8	0.0	0.0	48.2	0.0	20.2
Incr Delay (d2), s/veh	294.1	0.0	0.0	8.4	47.6	46.6	4.2	0.0	0.0	0.0	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	81.5	6.7	0.0	1.7	19.8	20.6	3.4	0.0	0.0	0.7	0.0	12.4
LnGrp Delay(d),s/veh	336.0	15.3	0.0	74.0	100.8	99.8	67.0	0.0	0.0	48.2	0.0	20.8
LnGrp LOS	F	B		E	F	F	E			D		C
Approach Vol, veh/h		1794			847			87			522	
Approach Delay, s/veh		215.5			98.9			67.0			22.0	
Approach LOS		F			F			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	58.0	36.0		14.3	9.7	84.3		28.0
Change Period (Y+Rc), s	5.5	6.0		* 5.6	5.5	* 6		5.6
Max Green Setting (Gmax), s	52.5	30.0		* 22	9.2	* 74		22.4
Max Q Clear Time (g_c+I1), s	54.5	32.0		8.6	5.3	15.7		24.4
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	2.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	150.1
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	490	590	30	10	30	1200	1020	80	130	50	260	10
Future Volume (veh/h)	490	590	30	10	30	1200	1020	80	130	50	260	10
Number	1	6	16		5	2	12	3	8	18	7	4
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		0.99	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900		1863	1863	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	533	641	33		33	1304	1109	87	141	54	283	11
Adj No. of Lanes	1	2	0		2	3	1	1	1	0	2	2
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2		2	2	2	2	2	2	2	2
Cap, veh/h	383	2154	111		60	2173	668	108	161	62	248	484
Arrive On Green	0.22	0.63	0.63		0.02	0.43	0.43	0.06	0.13	0.13	0.07	0.14
Sat Flow, veh/h	1774	3425	176		3442	5085	1563	1774	1284	492	3442	3539
Grp Volume(v), veh/h	533	331	343		33	1304	1109	87	0	195	283	11
Grp Sat Flow(s),veh/h/ln	1774	1770	1832		1721	1695	1563	1774	0	1776	1721	1770
Q Serve(g_s), s	28.5	11.3	11.3		1.3	26.1	56.4	6.4	0.0	14.2	9.5	0.4
Cycle Q Clear(g_c), s	28.5	11.3	11.3		1.3	26.1	56.4	6.4	0.0	14.2	9.5	0.4
Prop In Lane	1.00		0.10		1.00		1.00	1.00		0.28	1.00	
Lane Grp Cap(c), veh/h	383	1113	1152		60	2173	668	108	0	223	248	484
V/C Ratio(X)	1.39	0.30	0.30		0.55	0.60	1.66	0.80	0.00	0.87	1.14	0.02
Avail Cap(c_a), veh/h	383	1113	1152		138	2173	668	113	0	471	248	960
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	11.2	11.2		64.3	29.1	37.8	61.2	0.0	56.7	61.2	49.3
Incr Delay (d2), s/veh	191.5	0.1	0.1		3.0	0.3	304.0	29.6	0.0	4.2	101.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	34.3	5.5	5.7		0.6	12.3	80.6	4.0	0.0	7.2	8.0	0.2
LnGrp Delay(d),s/veh	243.2	11.2	11.2		67.3	29.4	341.8	90.8	0.0	60.8	162.3	49.3
LnGrp LOS	F	B	B		E	C	F	F		E	F	D
Approach Vol, veh/h		1207				2446			282			392
Approach Delay, s/veh		113.7				171.6			70.1			131.8
Approach LOS		F				F			E			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.0	61.3	13.5	23.1	7.4	87.9	15.0	21.7
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	28.5	* 56	8.4	* 36	* 5.3	* 80	9.5	* 35
Max Q Clear Time (g_c+I1), s	30.5	58.4	8.4	9.5	3.3	13.3	11.5	16.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.4	0.0	5.4	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	145.2
HCM 2010 LOS	F

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	90
Future Volume (veh/h)	90
Number	14
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	98
Adj No. of Lanes	1
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	216
Arrive On Green	0.14
Sat Flow, veh/h	1583
Grp Volume(v), veh/h	98
Grp Sat Flow(s),veh/h/ln	1583
Q Serve(g_s), s	7.5
Cycle Q Clear(g_c), s	7.5
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	216
V/C Ratio(X)	0.45
Avail Cap(c_a), veh/h	429
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	52.4
Incr Delay (d2), s/veh	0.5
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	3.3
LnGrp Delay(d),s/veh	53.0
LnGrp LOS	D
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	280	280	130	1220	180	1020	2250	160	20	800	170
Future Volume (veh/h)	270	280	280	130	1220	180	1020	2250	160	20	800	170
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	293	304	304	141	1326	196	1109	2446	174	22	870	185
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	239	1534	478	189	1460	455	767	2273	699	43	1203	375
Arrive On Green	0.07	0.30	0.30	0.05	0.29	0.29	0.22	0.45	0.45	0.01	0.24	0.24
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1564	3442	5085	1583
Grp Volume(v), veh/h	293	304	304	141	1326	196	1109	2446	174	22	870	185
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1564	1721	1695	1583
Q Serve(g_s), s	9.5	6.1	22.7	5.5	34.4	13.8	30.5	61.2	9.5	0.9	21.6	13.8
Cycle Q Clear(g_c), s	9.5	6.1	22.7	5.5	34.4	13.8	30.5	61.2	9.5	0.9	21.6	13.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	239	1534	478	189	1460	455	767	2273	699	43	1203	375
V/C Ratio(X)	1.23	0.20	0.64	0.75	0.91	0.43	1.45	1.08	0.25	0.51	0.72	0.49
Avail Cap(c_a), veh/h	239	1575	490	287	1642	511	767	2273	699	126	1322	412
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.7	35.5	41.3	63.8	47.1	39.7	53.2	37.9	23.6	67.2	48.1	45.2
Incr Delay (d2), s/veh	133.4	0.0	2.0	2.2	6.8	0.2	208.3	43.1	0.1	3.5	1.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	2.8	10.2	2.7	17.0	6.1	36.7	37.7	4.1	0.4	10.2	6.1
LnGrp Delay(d),s/veh	197.1	35.5	43.3	66.0	53.8	39.9	261.5	81.0	23.6	70.7	49.6	45.5
LnGrp LOS	F	D	D	E	D	D	F	F	C	E	D	D
Approach Vol, veh/h		901			1663			3729			1077	
Approach Delay, s/veh		90.7			53.2			132.0			49.3	
Approach LOS		F			D			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.2	68.6	13.0	48.1	36.0	39.8	15.0	46.1
Change Period (Y+Rc), s	5.5	* 7.4	5.5	* 6.8	5.5	* 7.4	5.5	6.8
Max Green Setting (Gmax), s	5.0	* 61	11.4	* 42	30.5	* 36	9.5	44.2
Max Q Clear Time (g_c+I1), s	2.9	63.2	7.5	24.7	32.5	23.6	11.5	36.4
Green Ext Time (p_c), s	0.0	0.0	0.0	3.8	0.0	7.6	0.0	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	97.1
HCM 2010 LOS	F

Notes

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	380	120	410	1170	800	160
Future Volume (veh/h)	380	120	410	1170	800	160
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	272	282	446	1272	870	174
Adj No. of Lanes	1	1	2	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	371	338	574	2064	1160	519
Arrive On Green	0.21	0.21	0.17	0.58	0.33	0.33
Sat Flow, veh/h	1774	1615	3442	3632	3632	1583
Grp Volume(v), veh/h	272	282	446	1272	870	174
Grp Sat Flow(s),veh/h/ln	1774	1615	1721	1770	1770	1583
Q Serve(g_s), s	7.4	8.7	6.5	12.2	11.4	4.3
Cycle Q Clear(g_c), s	7.4	8.7	6.5	12.2	11.4	4.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	371	338	574	2064	1160	519
V/C Ratio(X)	0.73	0.83	0.78	0.62	0.75	0.34
Avail Cap(c_a), veh/h	607	553	1323	3178	1483	664
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	19.7	20.7	7.1	15.6	13.2
Incr Delay (d2), s/veh	1.1	2.6	0.9	0.1	1.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	4.1	3.1	5.9	5.7	1.9
LnGrp Delay(d),s/veh	20.3	22.3	21.6	7.2	16.7	13.3
LnGrp LOS	C	C	C	A	B	B
Approach Vol, veh/h	554			1718	1044	
Approach Delay, s/veh	21.3			10.9	16.1	
Approach LOS	C			B	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	13.3	23.2				36.4		15.6
Change Period (Y+Rc), s	* 4.6	* 6.1				* 6.1		4.7
Max Green Setting (Gmax), s	* 20	* 22				* 47		17.8
Max Q Clear Time (g_c+I1), s	8.5	13.4				14.2		10.7
Green Ext Time (p_c), s	0.2	3.7				5.3		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	14.3
HCM 2010 LOS	B

Notes

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	10	10	630	350	400	740	60	380	160	580	60	180
Future Volume (veh/h)	10	10	630	350	400	740	60	380	160	580	60	180
Number		1	6	16	5	2	12	7	4	14	3	8
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00	1.00		0.96	1.00		0.99	1.00	
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863
Adj Flow Rate, veh/h		11	685	0	435	804	65	333	461	442	65	196
Adj No. of Lanes		1	2	1	2	2	0	1	1	1	0	2
Peak Hour Factor		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h		14	807	361	492	1198	97	516	542	454	94	292
Arrive On Green		0.01	0.23	0.00	0.14	0.36	0.36	0.29	0.29	0.29	0.14	0.14
Sat Flow, veh/h		1774	3539	1583	3442	3305	267	1774	1863	1560	658	2031
Grp Volume(v), veh/h		11	685	0	435	430	439	333	461	442	181	0
Grp Sat Flow(s),veh/h/ln		1774	1770	1583	1721	1770	1803	1774	1863	1560	1830	0
Q Serve(g_s), s		0.7	19.6	0.0	13.1	21.7	21.7	17.4	24.7	29.7	9.9	0.0
Cycle Q Clear(g_c), s		0.7	19.6	0.0	13.1	21.7	21.7	17.4	24.7	29.7	9.9	0.0
Prop In Lane		1.00		1.00	1.00		0.15	1.00		1.00	0.36	
Lane Grp Cap(c), veh/h		14	807	361	492	641	653	516	542	454	263	0
V/C Ratio(X)		0.79	0.85	0.00	0.88	0.67	0.67	0.65	0.85	0.97	0.69	0.00
Avail Cap(c_a), veh/h		72	906	405	504	641	653	516	542	454	449	0
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh		52.5	39.1	0.0	44.5	28.5	28.5	32.8	35.4	37.2	43.1	0.0
Incr Delay (d2), s/veh		29.9	6.3	0.0	16.0	2.2	2.2	2.2	11.7	35.3	1.2	0.0
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		0.4	10.3	0.0	7.3	11.0	11.2	8.8	14.4	17.2	5.1	0.0
LnGrp Delay(d),s/veh		82.3	45.4	0.0	60.6	30.7	30.7	35.0	47.1	72.4	44.3	0.0
LnGrp LOS		F	D		E	C	C	C	D	E	D	
Approach Vol, veh/h			696			1304			1236			337
Approach Delay, s/veh			46.0			40.6			52.9			44.1
Approach LOS			D			D			D			D

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.1	43.1		36.0	20.3	28.9		20.7
Change Period (Y+Rc), s	* 5.3	* 4.7		* 5.2	* 5.2	* 4.7		5.5
Max Green Setting (Gmax), s	* 4.3	* 38		* 31	* 16	* 27		26.0
Max Q Clear Time (g_c+I1), s	2.7	23.7		31.7	15.1	21.6		11.9
Green Ext Time (p_c), s	0.0	2.6		0.0	0.0	1.7		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	46.3
HCM 2010 LOS	D

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	70
Future Volume (veh/h)	70
Number	18
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.95
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1900
Adj Flow Rate, veh/h	76
Adj No. of Lanes	0
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	117
Arrive On Green	0.14
Sat Flow, veh/h	814
Grp Volume(v), veh/h	156
Grp Sat Flow(s),veh/h/ln	1673
Q Serve(g_s), s	9.3
Cycle Q Clear(g_c), s	9.3
Prop In Lane	0.49
Lane Grp Cap(c), veh/h	240
V/C Ratio(X)	0.65
Avail Cap(c_a), veh/h	411
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	42.8
Incr Delay (d2), s/veh	1.1
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	4.4
LnGrp Delay(d),s/veh	43.9
LnGrp LOS	D
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	1180	0	350	0	1020	670	0	1120	150
Future Volume (veh/h)	0	0	0	1180	0	350	0	1020	670	0	1120	150
Number				3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h				832	632	380	0	1109	0	0	1217	0
Adj No. of Lanes				1	1	0	0	3	1	0	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				991	608	365	0	1464	456	0	1464	456
Arrive On Green				0.56	0.56	0.56	0.00	0.29	0.00	0.00	0.29	0.00
Sat Flow, veh/h				1774	1088	654	0	5253	1583	0	5253	1583
Grp Volume(v), veh/h				832	0	1012	0	1109	0	0	1217	0
Grp Sat Flow(s),veh/h/ln				1774	0	1742	0	1695	1583	0	1695	1583
Q Serve(g_s), s				25.2	0.0	36.1	0.0	12.8	0.0	0.0	14.5	0.0
Cycle Q Clear(g_c), s				25.2	0.0	36.1	0.0	12.8	0.0	0.0	14.5	0.0
Prop In Lane				1.00		0.38	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				991	0	973	0	1464	456	0	1464	456
V/C Ratio(X)				0.84	0.00	1.04	0.00	0.76	0.00	0.00	0.83	0.00
Avail Cap(c_a), veh/h				991	0	973	0	1496	466	0	1551	483
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				11.8	0.0	14.3	0.0	20.9	0.0	0.0	21.5	0.0
Incr Delay (d2), s/veh				6.2	0.0	39.7	0.0	2.0	0.0	0.0	3.5	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				13.7	0.0	27.8	0.0	6.2	0.0	0.0	7.2	0.0
LnGrp Delay(d),s/veh				18.0	0.0	53.9	0.0	22.9	0.0	0.0	25.0	0.0
LnGrp LOS				B		F		C			C	
Approach Vol, veh/h					1844			1109			1217	
Approach Delay, s/veh					37.7			22.9			25.0	
Approach LOS					D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		23.6				23.6		41.0
Change Period (Y+Rc), s		* 5				5.0		4.9
Max Green Setting (Gmax), s		* 20				19.0		36.1
Max Q Clear Time (g_c+I1), s		16.5				14.8		38.1
Green Ext Time (p_c), s		2.1				2.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	30.1
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	280	0	1220	0	0	0	0	1300	490	0	1720	420
Future Volume (veh/h)	280	0	1220	0	0	0	0	1300	490	0	1720	420
Number	7	4	14				1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	203	0	1435				0	1413	0	0	1870	0
Adj No. of Lanes	1	0	2				0	3	0	0	3	1
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	818	0	1457				0	2037	0	0	2037	634
Arrive On Green	0.46	0.00	0.46				0.00	0.40	0.00	0.00	0.40	0.00
Sat Flow, veh/h	1774	0	3163				0	5421	0	0	5253	1583
Grp Volume(v), veh/h	203	0	1435				0	1413	0	0	1870	0
Grp Sat Flow(s),veh/h/ln	1774	0	1581				0	1695	0	0	1695	1583
Q Serve(g_s), s	5.2	0.0	33.6				0.0	17.3	0.0	0.0	26.2	0.0
Cycle Q Clear(g_c), s	5.2	0.0	33.6				0.0	17.3	0.0	0.0	26.2	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	818	0	1457				0	2037	0	0	2037	634
V/C Ratio(X)	0.25	0.00	0.98				0.00	0.69	0.00	0.00	0.92	0.00
Avail Cap(c_a), veh/h	818	0	1457				0	2037	0	0	2066	643
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	12.3	0.0	20.0				0.0	18.7	0.0	0.0	21.3	0.0
Incr Delay (d2), s/veh	0.1	0.0	19.8				0.0	0.9	0.0	0.0	6.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	18.6				0.0	8.1	0.0	0.0	13.4	0.0
LnGrp Delay(d),s/veh	12.4	0.0	39.8				0.0	19.5	0.0	0.0	28.2	0.0
LnGrp LOS	B		D					B			C	
Approach Vol, veh/h		1638						1413			1870	
Approach Delay, s/veh		36.4						19.5			28.2	
Approach LOS		D						B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		35.1		40.0		35.1		
Change Period (Y+Rc), s		* 5		* 5.4		5.0		
Max Green Setting (Gmax), s		* 31		* 35		30.0		
Max Q Clear Time (g_c+I1), s		28.2		35.6		19.3		
Green Ext Time (p_c), s		1.9		0.0		7.1		

Intersection Summary	
HCM 2010 Ctrl Delay	28.5
HCM 2010 LOS	C

Notes

Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (veh/h)	1020	750	20	10	670	270	10
Future Volume (veh/h)	1020	750	20	10	670	270	10
Number	6	16		5	2	3	18
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900		1863	1863	1863	1863
Adj Flow Rate, veh/h	1109	0		11	728	293	11
Adj No. of Lanes	3	0		1	3	2	1
Peak Hour Factor	0.92	0.92		0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2		2	2	2	2
Cap, veh/h	2915	0		15	3517	433	199
Arrive On Green	0.57	0.00		0.01	0.69	0.13	0.13
Sat Flow, veh/h	5421	0		1774	5253	3442	1583
Grp Volume(v), veh/h	1109	0		11	728	293	11
Grp Sat Flow(s),veh/h/ln	1695	0		1774	1695	1721	1583
Q Serve(g_s), s	5.5	0.0		0.3	2.4	3.8	0.3
Cycle Q Clear(g_c), s	5.5	0.0		0.3	2.4	3.8	0.3
Prop In Lane		0.00		1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2915	0		15	3517	433	199
V/C Ratio(X)	0.38	0.00		0.73	0.21	0.68	0.06
Avail Cap(c_a), veh/h	3379	0		248	4647	2146	987
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	5.4	0.0		23.0	2.6	19.4	17.9
Incr Delay (d2), s/veh	0.2	0.0		21.4	0.1	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0		0.2	1.1	1.8	0.1
LnGrp Delay(d),s/veh	5.6	0.0		44.4	2.6	20.1	17.9
LnGrp LOS	A			D	A	C	B
Approach Vol, veh/h	1109				739	304	
Approach Delay, s/veh	5.6				3.3	20.0	
Approach LOS	A				A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		37.2			5.5	31.7		9.3
Change Period (Y+Rc), s		5.0			* 5.1	5.0		3.5
Max Green Setting (Gmax), s		42.5			* 6.5	30.9		29.0
Max Q Clear Time (g_c+I1), s		4.4			2.3	7.5		5.8
Green Ext Time (p_c), s		27.8			0.0	18.9		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	6.8
HCM 2010 LOS	A

Notes

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (veh/h)	10	220	750	220	20	200	840	70	20	440	1360	220
Future Volume (veh/h)	10	220	750	220	20	200	840	70	20	440	1360	220
Number		3	8	18		7	4	14		1	6	16
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.98		1.00		0.98		1.00		1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1900		1863	1863	1863		1863	1863	1863
Adj Flow Rate, veh/h		239	815	239		217	913	76		478	1478	239
Adj No. of Lanes		2	3	0		2	3	1		2	3	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2
Cap, veh/h		273	986	287		281	1299	398		541	1774	551
Arrive On Green		0.08	0.25	0.25		0.08	0.26	0.26		0.16	0.35	0.35
Sat Flow, veh/h		3442	3898	1134		3442	5085	1557		3442	5085	1579
Grp Volume(v), veh/h		239	708	346		217	913	76		478	1478	239
Grp Sat Flow(s),veh/h/ln		1721	1695	1642		1721	1695	1557		1721	1695	1579
Q Serve(g_s), s		6.8	19.6	19.9		6.2	16.2	3.8		13.5	26.6	11.6
Cycle Q Clear(g_c), s		6.8	19.6	19.9		6.2	16.2	3.8		13.5	26.6	11.6
Prop In Lane		1.00		0.69		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h		273	858	415		281	1299	398		541	1774	551
V/C Ratio(X)		0.88	0.83	0.83		0.77	0.70	0.19		0.88	0.83	0.43
Avail Cap(c_a), veh/h		273	974	472		287	1481	454		605	1782	554
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		45.3	35.1	35.2		44.8	33.6	29.0		41.1	29.8	24.9
Incr Delay (d2), s/veh		24.7	4.7	9.8		10.8	1.0	0.1		12.6	3.3	0.2
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		4.2	9.7	10.1		3.3	7.7	1.6		7.4	13.0	5.1
LnGrp Delay(d),s/veh		70.1	39.8	45.0		55.6	34.6	29.1		53.6	33.1	25.1
LnGrp LOS		E	D	D		E	C	C		D	C	C
Approach Vol, veh/h			1293				1206				2195	
Approach Delay, s/veh			46.8				38.0				36.7	
Approach LOS			D				D				D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.1	33.8	13.4	31.2	14.6	40.3	13.6	31.0
Change Period (Y+Rc), s	5.5	* 5.6	5.5	5.8	5.5	* 5.6	5.5	5.8
Max Green Setting (Gmax), s	17.5	* 28	7.9	29.0	10.8	* 35	8.3	28.6
Max Q Clear Time (g_c+I1), s	15.5	30.2	8.8	18.2	9.1	28.6	8.2	21.9
Green Ext Time (p_c), s	0.1	0.0	0.0	4.0	0.0	3.9	0.0	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	45.3
HCM 2010 LOS	D

Notes

Movement	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (veh/h)	230	480	450
Future Volume (veh/h)	230	480	450
Number	5	2	12
Initial Q (Qb), veh	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900
Adj Flow Rate, veh/h	250	522	489
Adj No. of Lanes	2	3	0
Peak Hour Factor	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2
Cap, veh/h	315	960	442
Arrive On Green	0.09	0.28	0.28
Sat Flow, veh/h	3442	3390	1561
Grp Volume(v), veh/h	250	522	489
Grp Sat Flow(s),veh/h/ln	1721	1695	1561
Q Serve(g_s), s	7.1	13.0	28.2
Cycle Q Clear(g_c), s	7.1	13.0	28.2
Prop In Lane	1.00		1.00
Lane Grp Cap(c), veh/h	315	960	442
V/C Ratio(X)	0.79	0.54	1.11
Avail Cap(c_a), veh/h	373	960	442
HCM Platoon Ratio	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.3	30.2	35.7
Incr Delay (d2), s/veh	7.9	0.4	74.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	6.1	21.2
LnGrp Delay(d),s/veh	52.3	30.6	110.4
LnGrp LOS	D	C	F
Approach Vol, veh/h		1261	
Approach Delay, s/veh		65.8	
Approach LOS		E	
Timer			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	110	10	130	140	620	50	1600	140	720	1780	750
Future Volume (veh/h)	30	110	10	130	140	620	50	1600	140	720	1780	750
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	33	120	11	141	152	674	54	1739	152	783	1935	815
Adj No. of Lanes	2	3	0	2	1	2	2	3	0	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	59	741	66	190	359	1350	90	1838	160	823	3046	932
Arrive On Green	0.02	0.16	0.16	0.05	0.19	0.19	0.03	0.39	0.39	0.24	0.60	0.60
Sat Flow, veh/h	3442	4740	422	3548	1863	3077	3442	4761	415	3442	5085	1557
Grp Volume(v), veh/h	33	85	46	141	152	674	54	1237	654	783	1935	815
Grp Sat Flow(s),veh/h/ln	1721	1695	1772	1774	1863	1538	1721	1695	1786	1721	1695	1557
Q Serve(g_s), s	1.3	3.0	3.1	5.4	9.9	21.9	2.1	48.5	48.8	30.8	33.9	60.6
Cycle Q Clear(g_c), s	1.3	3.0	3.1	5.4	9.9	21.9	2.1	48.5	48.8	30.8	33.9	60.6
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	59	530	277	190	359	1350	90	1309	689	823	3046	932
V/C Ratio(X)	0.56	0.16	0.17	0.74	0.42	0.50	0.60	0.95	0.95	0.95	0.64	0.87
Avail Cap(c_a), veh/h	133	690	361	191	414	1442	123	1331	701	838	3046	932
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.1	50.2	50.3	64.2	48.8	28.4	66.3	40.8	40.9	51.5	17.9	23.2
Incr Delay (d2), s/veh	3.0	0.1	0.1	12.8	0.3	0.1	2.3	13.4	21.8	19.7	0.3	8.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.4	1.5	3.0	5.1	9.3	1.0	25.1	28.1	16.9	15.9	28.1
LnGrp Delay(d),s/veh	70.1	50.3	50.4	77.0	49.1	28.5	68.6	54.2	62.7	71.2	18.2	32.1
LnGrp LOS	E	D	D	E	D	C	E	D	E	E	B	C
Approach Vol, veh/h		164			967			1945			3533	
Approach Delay, s/veh		54.3			38.8			57.5			33.2	
Approach LOS		D			D			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	88.1	7.9	32.5	38.4	58.8	12.9	27.5
Change Period (Y+Rc), s	5.5	* 5.7	5.5	* 6	5.5	* 5.7	5.5	* 6
Max Green Setting (Gmax), s	4.9	* 82	5.3	* 31	33.5	* 54	7.4	* 28
Max Q Clear Time (g_c+I1), s	4.1	62.6	3.3	23.9	32.8	50.8	7.4	5.1
Green Ext Time (p_c), s	0.0	13.0	0.0	0.9	0.1	2.3	0.0	1.1

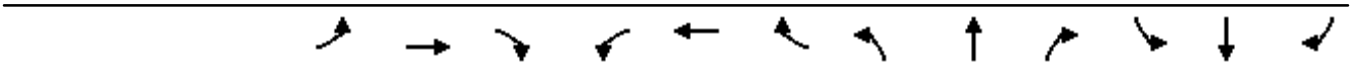
Intersection Summary	
HCM 2010 Ctrl Delay	41.7
HCM 2010 LOS	D

Notes

Movement	EBL2	EBL	EBT	EBR	WBR	WBR2	NBT	NBR	NBR2	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	450	10	910	1310	170	50	1390	710	10	1890	220
Future Volume (vph)	450	10	910	1310	170	50	1390	710	10	1890	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8	6.8	6.8	4.5		4.6			4.6	4.0
Lane Util. Factor		0.91	0.86	0.91	0.88		0.86			0.91	1.00
Frpb, ped/bikes		1.00	0.99	0.98	1.00		0.99			1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt		1.00	0.94	0.85	0.85		0.95			1.00	0.85
Flt Protected		0.95	1.00	1.00	1.00		1.00			1.00	1.00
Satd. Flow (prot)		1610	2991	1418	2787		6031			5085	1545
Flt Permitted		0.95	1.00	1.00	1.00		1.00			1.00	1.00
Satd. Flow (perm)		1610	2991	1418	2787		6031			5085	1545
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	489	11	989	1424	185	54	1511	772	11	2054	239
RTOR Reduction (vph)	0	0	1	30	72	0	1	0	0	0	0
Lane Group Flow (vph)	0	499	1658	725	167	0	2293	0	0	2054	239
Confl. Peds. (#/hr)	6	6		6	3	3		3	3		6
Confl. Bikes (#/hr)								2	2		3
Turn Type	Split	Split	NA	Perm	Prot		NA			NA	Free
Protected Phases	4	4	4		5		6			2	
Permitted Phases				4							Free
Actuated Green, G (s)		55.2	55.2	55.2	6.5		42.4			53.4	120.0
Effective Green, g (s)		55.2	55.2	55.2	6.5		42.4			53.4	120.0
Actuated g/C Ratio		0.46	0.46	0.46	0.05		0.35			0.44	1.00
Clearance Time (s)		6.8	6.8	6.8	4.5		4.6			4.6	
Vehicle Extension (s)		1.0	1.0	1.0	3.0		1.0			1.0	
Lane Grp Cap (vph)		740	1375	652	150		2130			2262	1545
v/s Ratio Prot		0.31	c0.55		0.06		c0.38			c0.40	
v/s Ratio Perm				0.51							0.15
v/c Ratio		0.67	1.21	1.11	1.11		1.39dr			0.91	0.15
Uniform Delay, d1		25.4	32.4	32.4	56.8		38.8			31.0	0.0
Progression Factor		1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		1.9	99.7	70.3	107.4		43.8			5.7	0.2
Delay (s)		27.3	132.1	102.7	164.1		82.6			36.7	0.2
Level of Service		C	F	F	F		F			D	A
Approach Delay (s)			106.5				82.6			32.9	
Approach LOS			F				F			C	

Intersection Summary			
HCM 2000 Control Delay	79.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.9
Intersection Capacity Utilization	100.7%	ICU Level of Service	G
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	1210	0	170	0	850	830	0	1150	480
Future Volume (veh/h)	0	0	0	1210	0	170	0	850	830	0	1150	480
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h				1315	0	185	0	924	0	0	1250	0
Adj No. of Lanes				2	0	1	0	3	2	0	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				1604	0	738	0	1730	948	0	1730	539
Arrive On Green				0.47	0.00	0.47	0.00	0.34	0.00	0.00	0.34	0.00
Sat Flow, veh/h				3442	0	1583	0	5253	2787	0	5253	1583
Grp Volume(v), veh/h				1315	0	185	0	924	0	0	1250	0
Grp Sat Flow(s),veh/h/ln				1721	0	1583	0	1695	1393	0	1695	1583
Q Serve(g_s), s				15.5	0.0	3.3	0.0	6.9	0.0	0.0	10.1	0.0
Cycle Q Clear(g_c), s				15.5	0.0	3.3	0.0	6.9	0.0	0.0	10.1	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				1604	0	738	0	1730	948	0	1730	539
V/C Ratio(X)				0.82	0.00	0.25	0.00	0.53	0.00	0.00	0.72	0.00
Avail Cap(c_a), veh/h				1940	0	893	0	2099	1150	0	2099	653
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				10.8	0.0	7.6	0.0	12.5	0.0	0.0	13.6	0.0
Incr Delay (d2), s/veh				2.4	0.0	0.2	0.0	0.1	0.0	0.0	0.7	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.9	0.0	1.5	0.0	3.2	0.0	0.0	4.7	0.0
LnGrp Delay(d),s/veh				13.3	0.0	7.8	0.0	12.6	0.0	0.0	14.3	0.0
LnGrp LOS				B		A		B			B	
Approach Vol, veh/h					1500			924			1250	
Approach Delay, s/veh					12.6			12.6			14.3	
Approach LOS					B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		20.6				20.6		26.4
Change Period (Y+Rc), s		4.6				4.6		4.5
Max Green Setting (Gmax), s		19.4				19.4		26.5
Max Q Clear Time (g_c+I1), s		8.9				12.1		17.5
Green Ext Time (p_c), s		4.6				3.7		4.4

Intersection Summary	
HCM 2010 Ctrl Delay	13.2
HCM 2010 LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (veh/h)	50	240	340	200	10	250	1090	180	40	290	1530	140
Future Volume (veh/h)	50	240	340	200	10	250	1090	180	40	290	1530	140
Number		3	8	18		7	4	14		1	6	16
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.98		1.00		1.00		1.00		0.99
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1676	1676	1676		1676	1676	1676		1676	1676	1676
Adj Flow Rate, veh/h		261	370	217		272	1185	196		315	1663	152
Adj No. of Lanes		2	2	1		2	3	1		2	3	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2
Cap, veh/h		283	831	365		283	1194	370		310	1974	606
Arrive On Green		0.09	0.26	0.26		0.09	0.26	0.26		0.10	0.43	0.43
Sat Flow, veh/h		3097	3185	1401		3097	4577	1420		3097	4577	1405
Grp Volume(v), veh/h		261	370	217		272	1185	196		315	1663	152
Grp Sat Flow(s),veh/h/ln		1549	1593	1401		1549	1526	1420		1549	1526	1405
Q Serve(g_s), s		9.6	11.2	15.6		10.1	29.7	13.6		11.5	37.3	7.9
Cycle Q Clear(g_c), s		9.6	11.2	15.6		10.1	29.7	13.6		11.5	37.3	7.9
Prop In Lane		1.00		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h		283	831	365		283	1194	370		310	1974	606
V/C Ratio(X)		0.92	0.45	0.59		0.96	0.99	0.53		1.02	0.84	0.25
Avail Cap(c_a), veh/h		283	831	365		283	1194	370		310	1974	606
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		51.8	35.5	37.2		52.1	42.4	36.4		51.8	29.2	20.8
Incr Delay (d2), s/veh		33.3	0.8	3.8		42.7	24.3	4.1		55.5	3.8	0.4
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.1	0.0	0.0
%ile BackOfQ(50%),veh/ln		5.4	5.0	6.4		6.0	15.2	5.8		7.3	16.4	3.1
LnGrp Delay(d),s/veh		85.2	36.3	41.0		94.8	66.7	40.5		107.4	33.0	21.3
LnGrp LOS		F	D	D		F	E	D		F	C	C
Approach Vol, veh/h			848				1653				2130	
Approach Delay, s/veh			52.6				68.2				43.2	
Approach LOS			D				E				D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	46.0	16.0	36.0	7.6	55.4	16.0	36.0
Change Period (Y+Rc), s	5.5	* 5.8	5.5	6.0	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	11.5	* 40	10.5	30.0	4.0	* 48	10.5	30.0
Max Q Clear Time (g_c+I1), s	13.5	42.2	11.6	31.7	3.2	39.3	12.1	17.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	8.5	0.0	11.4

Intersection Summary	
HCM 2010 Ctrl Delay	65.5
HCM 2010 LOS	E

Notes

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Volume (veh/h)	20	30	900	600
Future Volume (veh/h)	20	30	900	600
Number		5	2	12
Initial Q (Qb), veh		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.98
Parking Bus, Adj		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1676	1676	1676
Adj Flow Rate, veh/h		33	978	652
Adj No. of Lanes		2	3	1
Peak Hour Factor		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2
Cap, veh/h		56	1600	490
Arrive On Green		0.02	0.35	0.35
Sat Flow, veh/h		3097	4577	1402
Grp Volume(v), veh/h		33	978	652
Grp Sat Flow(s),veh/h/ln		1549	1526	1402
Q Serve(g_s), s		1.2	20.3	40.2
Cycle Q Clear(g_c), s		1.2	20.3	40.2
Prop In Lane		1.00		1.00
Lane Grp Cap(c), veh/h		56	1600	490
V/C Ratio(X)		0.58	0.61	1.33
Avail Cap(c_a), veh/h		108	1600	490
HCM Platoon Ratio		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00
Uniform Delay (d), s/veh		56.0	30.9	37.4
Incr Delay (d2), s/veh		3.5	1.0	162.1
Initial Q Delay(d3),s/veh		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		0.6	8.7	37.6
LnGrp Delay(d),s/veh		59.5	31.9	199.5
LnGrp LOS		E	C	F
Approach Vol, veh/h			1663	
Approach Delay, s/veh			98.2	
Approach LOS			F	
Timer				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	400	170	20	140	430	140	30	1600	120	170	2000	450
Future Volume (veh/h)	400	170	20	140	430	140	30	1600	120	170	2000	450
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	435	185	22	152	467	152	33	1739	130	185	2174	489
Adj No. of Lanes	2	2	1	2	2	1	2	4	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	474	1022	451	205	779	320	60	2594	639	237	2321	715
Arrive On Green	0.14	0.29	0.29	0.06	0.21	0.21	0.02	0.40	0.40	0.07	0.46	0.46
Sat Flow, veh/h	3442	3539	1562	3548	3725	1529	3442	6408	1579	3442	5085	1568
Grp Volume(v), veh/h	435	185	22	152	467	152	33	1739	130	185	2174	489
Grp Sat Flow(s),veh/h/ln	1721	1770	1562	1774	1863	1529	1721	1602	1579	1721	1695	1568
Q Serve(g_s), s	15.8	5.0	1.3	5.4	14.4	11.1	1.2	28.2	6.8	6.7	51.6	31.3
Cycle Q Clear(g_c), s	15.8	5.0	1.3	5.4	14.4	11.1	1.2	28.2	6.8	6.7	51.6	31.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	474	1022	451	205	779	320	60	2594	639	237	2321	715
V/C Ratio(X)	0.92	0.18	0.05	0.74	0.60	0.48	0.55	0.67	0.20	0.78	0.94	0.68
Avail Cap(c_a), veh/h	474	1075	475	307	938	385	108	2594	639	341	2358	727
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.1	33.9	32.6	58.9	45.4	44.1	61.9	30.9	24.5	58.2	32.8	27.3
Incr Delay (d2), s/veh	22.4	0.1	0.1	2.0	1.3	1.9	4.8	0.6	0.1	4.1	8.2	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	2.5	0.6	2.7	7.5	4.8	0.6	12.5	3.0	3.3	25.7	14.1
LnGrp Delay(d),s/veh	76.4	34.0	32.6	60.9	46.7	46.0	66.7	31.5	24.6	62.3	40.9	30.7
LnGrp LOS	E	C	C	E	D	D	E	C	C	E	D	C
Approach Vol, veh/h		642			771			1902			2848	
Approach Delay, s/veh		62.7			49.4			31.6			40.6	
Approach LOS		E			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	63.8	23.0	32.6	14.3	57.2	12.9	42.7
Change Period (Y+Rc), s	5.5	* 5.8	5.5	6.0	5.5	* 5.8	5.5	* 6
Max Green Setting (Gmax), s	4.0	* 59	17.5	32.0	12.6	* 50	11.0	* 39
Max Q Clear Time (g_c+I1), s	3.2	53.6	17.8	16.4	8.7	30.2	7.4	7.0
Green Ext Time (p_c), s	0.0	4.4	0.0	6.6	0.0	19.8	0.0	9.1

Intersection Summary	
HCM 2010 Ctrl Delay	41.2
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1330	0	670	0	0	0	0	1770	500	0	1900	440
Future Volume (veh/h)	1330	0	670	0	0	0	0	1770	500	0	1900	440
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	1446	0	728				0	1924	0	0	2065	0
Adj No. of Lanes	3	0	2				0	4	1	0	3	1
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2				0	2	2	0	2	2
Cap, veh/h	1713	0	954				0	3598	765	0	2699	765
Arrive On Green	0.34	0.00	0.34				0.00	0.48	0.00	0.00	0.48	0.00
Sat Flow, veh/h	5003	0	2787				0	7451	1583	0	5588	1583
Grp Volume(v), veh/h	1446	0	728				0	1924	0	0	2065	0
Grp Sat Flow(s),veh/h/ln	1668	0	1393				0	1863	1583	0	1863	1583
Q Serve(g_s), s	14.1	0.0	12.2				0.0	9.5	0.0	0.0	16.0	0.0
Cycle Q Clear(g_c), s	14.1	0.0	12.2				0.0	9.5	0.0	0.0	16.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	1713	0	954				0	3598	765	0	2699	765
V/C Ratio(X)	0.84	0.00	0.76				0.00	0.53	0.00	0.00	0.77	0.00
Avail Cap(c_a), veh/h	1757	0	979				0	3919	833	0	2897	821
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	16.0	0.0	15.4				0.0	9.5	0.0	0.0	11.2	0.0
Incr Delay (d2), s/veh	3.9	0.0	3.5				0.0	0.0	0.0	0.0	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.0	5.1				0.0	4.8	0.0	0.0	8.3	0.0
LnGrp Delay(d),s/veh	19.9	0.0	18.9				0.0	9.5	0.0	0.0	12.2	0.0
LnGrp LOS	B		B					A			B	
Approach Vol, veh/h		2174						1924			2065	
Approach Delay, s/veh		19.6						9.5			12.2	
Approach LOS		B						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		30.1		22.5		30.1		
Change Period (Y+Rc), s		* 4.7		4.5		4.7		
Max Green Setting (Gmax), s		* 28		18.5		27.3		
Max Q Clear Time (g_c+I1), s		11.5		16.1		18.0		
Green Ext Time (p_c), s		11.5		2.0		7.5		

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	190	0	400	0	2780	370	0	2180	1670
Future Volume (veh/h)	0	0	0	190	0	400	0	2780	370	0	2180	1670
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h				207	0	435	0	3022	0	0	2370	0
Adj No. of Lanes				2	0	2	0	3	1	0	3	2
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				638	0	516	0	3911	1108	0	3559	1950
Arrive On Green				0.19	0.00	0.19	0.00	0.70	0.00	0.00	0.70	0.00
Sat Flow, veh/h				3442	0	2787	0	5588	1583	0	5253	2787
Grp Volume(v), veh/h				207	0	435	0	3022	0	0	2370	0
Grp Sat Flow(s),veh/h/ln				1721	0	1393	0	1863	1583	0	1695	1393
Q Serve(g_s), s				4.3	0.0	12.5	0.0	29.2	0.0	0.0	21.7	0.0
Cycle Q Clear(g_c), s				4.3	0.0	12.5	0.0	29.2	0.0	0.0	21.7	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				638	0	516	0	3911	1108	0	3559	1950
V/C Ratio(X)				0.32	0.00	0.84	0.00	0.77	0.00	0.00	0.67	0.00
Avail Cap(c_a), veh/h				729	0	590	0	4279	1212	0	3876	2124
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				29.2	0.0	32.5	0.0	8.1	0.0	0.0	7.0	0.0
Incr Delay (d2), s/veh				0.3	0.0	9.7	0.0	0.7	0.0	0.0	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.1	0.0	5.5	0.0	15.1	0.0	0.0	10.0	0.0
LnGrp Delay(d),s/veh				29.5	0.0	42.2	0.0	8.8	0.0	0.0	7.3	0.0
LnGrp LOS				C		D		A			A	
Approach Vol, veh/h					642			3022			2370	
Approach Delay, s/veh					38.1			8.8			7.3	
Approach LOS					D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		62.8				62.8		19.8
Change Period (Y+Rc), s		* 5				5.0		4.5
Max Green Setting (Gmax), s		* 63				63.0		17.5
Max Q Clear Time (g_c+I1), s		31.2				23.7		14.5
Green Ext Time (p_c), s		26.6				31.4		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	11.3
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	120	10	410	30	30	40	30	460	2730	20	40	3340
Future Volume (veh/h)	120	10	410	30	30	40	30	460	2730	20	40	3340
Number	7	4	14	3	8	18		1	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00		1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1900		1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	130	240	294	33	33	43		500	2967	22	43	3630
Adj No. of Lanes	0	1	1	1	1	0		2	3	0	1	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2
Cap, veh/h	144	266	353	114	47	62		299	2598	19	55	2239
Arrive On Green	0.22	0.22	0.22	0.06	0.06	0.06		0.09	0.50	0.50	0.03	0.44
Sat Flow, veh/h	643	1187	1575	1774	733	956		3442	5208	39	1774	5085
Grp Volume(v), veh/h	370	0	294	33	0	76		500	1929	1060	43	3630
Grp Sat Flow(s),veh/h/ln	1831	0	1575	1774	0	1689		1721	1695	1856	1774	1695
Q Serve(g_s), s	22.4	0.0	20.3	2.0	0.0	5.0		9.9	56.9	56.9	2.7	50.2
Cycle Q Clear(g_c), s	22.4	0.0	20.3	2.0	0.0	5.0		9.9	56.9	56.9	2.7	50.2
Prop In Lane	0.35		1.00	1.00		0.57		1.00		0.02	1.00	
Lane Grp Cap(c), veh/h	410	0	353	114	0	109		299	1691	926	55	2239
V/C Ratio(X)	0.90	0.00	0.83	0.29	0.00	0.70		1.67	1.14	1.14	0.78	1.62
Avail Cap(c_a), veh/h	514	0	442	498	0	474		299	1691	926	73	2239
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	0.0	42.2	50.8	0.0	52.2		52.1	28.6	28.6	54.9	31.9
Incr Delay (d2), s/veh	14.6	0.0	8.7	0.5	0.0	3.0		317.2	71.0	78.1	23.1	281.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.0	0.0	9.7	1.0	0.0	2.4		17.9	43.2	49.1	1.7	81.8
LnGrp Delay(d),s/veh	57.6	0.0	50.9	51.4	0.0	55.2		369.2	99.6	106.6	78.0	313.5
LnGrp LOS	E		D	D		E		F	F	F	E	F
Approach Vol, veh/h		664			109				3489			3716
Approach Delay, s/veh		54.7			54.1				140.4			307.4
Approach LOS		D			D				F			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.0	55.1		31.1	8.3	61.8		12.8
Change Period (Y+Rc), s	* 5.1	* 4.9		5.5	* 4.8	* 4.9		5.5
Max Green Setting (Gmax), s	* 9.9	* 50		32.0	* 4.7	* 56		32.0
Max Q Clear Time (g_c+I1), s	11.9	52.2		24.4	4.7	58.9		7.0
Green Ext Time (p_c), s	0.0	0.0		0.7	0.0	0.0		0.1

Intersection Summary			
HCM 2010 Ctrl Delay		209.8	
HCM 2010 LOS		F	

Notes

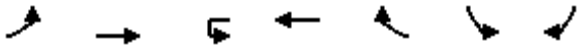
Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	40
Future Volume (veh/h)	40
Number	12
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.97
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	43
Adj No. of Lanes	1
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	679
Arrive On Green	0.44
Sat Flow, veh/h	1542
Grp Volume(v), veh/h	43
Grp Sat Flow(s),veh/h/ln	1542
Q Serve(g_s), s	1.8
Cycle Q Clear(g_c), s	1.8
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	679
V/C Ratio(X)	0.06
Avail Cap(c_a), veh/h	679
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	18.4
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	0.8
LnGrp Delay(d),s/veh	18.4
LnGrp LOS	B
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	330	20	10	1730	950	920
Future Volume (veh/h)	330	20	10	1730	950	920
Number	7	14	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	359	22	11	1880	1033	1000
Adj No. of Lanes	2	1	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	463	226	15	2404	2083	1145
Arrive On Green	0.13	0.13	0.01	0.68	0.59	0.59
Sat Flow, veh/h	3442	1583	1774	3632	3632	1583
Grp Volume(v), veh/h	359	22	11	1880	1033	1000
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1770	1770	1583
Q Serve(g_s), s	6.7	0.8	0.4	24.2	11.3	31.6
Cycle Q Clear(g_c), s	6.7	0.8	0.4	24.2	11.3	31.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	463	226	15	2404	2083	1145
V/C Ratio(X)	0.78	0.10	0.75	0.78	0.50	0.87
Avail Cap(c_a), veh/h	1343	631	107	2757	2237	1214
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.9	24.8	33.0	7.3	8.0	6.9
Incr Delay (d2), s/veh	1.1	0.1	23.9	1.1	0.1	6.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.8	0.3	11.9	5.5	20.1
LnGrp Delay(d),s/veh	28.9	24.9	56.9	8.4	8.0	13.5
LnGrp LOS	C	C	E	A	A	B
Approach Vol, veh/h	381			1891	2033	
Approach Delay, s/veh	28.7			8.7	10.7	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	6.1	46.1		14.5		52.2		
Change Period (Y+Rc), s	5.5	* 6.9		5.5		* 6.9		
Max Green Setting (Gmax), s	4.0	* 42		26.0		* 52		
Max Q Clear Time (g_c+I1), s	2.4	33.6		8.7		26.2		
Green Ext Time (p_c), s	0.0	5.6		0.3		10.0		

Intersection Summary	
HCM 2010 Ctrl Delay	11.4
HCM 2010 LOS	B

Notes



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	850	1190	0	1300	110	50	610
Future Volume (veh/h)	850	1190	0	1300	110	50	610
Number	1	6		2	12	3	18
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863		1863	1863	1863	1863
Adj Flow Rate, veh/h	924	1293		1413	120	54	663
Adj No. of Lanes	2	2		2	1	1	1
Peak Hour Factor	0.92	0.92		0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2		2	2	2	2
Cap, veh/h	964	2488		1313	587	310	277
Arrive On Green	0.28	0.70		0.37	0.37	0.17	0.17
Sat Flow, veh/h	3442	3632		3632	1583	1774	1583
Grp Volume(v), veh/h	924	1293		1413	120	54	663
Grp Sat Flow(s),veh/h/ln	1721	1770		1770	1583	1774	1583
Q Serve(g_s), s	26.4	17.1		37.1	5.2	2.6	17.5
Cycle Q Clear(g_c), s	26.4	17.1		37.1	5.2	2.6	17.5
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	964	2488		1313	587	310	277
V/C Ratio(X)	0.96	0.52		1.08	0.20	0.17	2.39
Avail Cap(c_a), veh/h	964	2488		1313	587	310	277
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.4	6.9		31.4	21.4	35.1	41.3
Incr Delay (d2), s/veh	19.6	0.1		48.1	0.1	0.1	637.7
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.2	8.3		26.8	2.3	1.3	56.7
LnGrp Delay(d),s/veh	55.0	7.0		79.5	21.5	35.2	679.0
LnGrp LOS	D	A		F	C	D	F
Approach Vol, veh/h		2217		1533		717	
Approach Delay, s/veh		27.0		75.0		630.5	
Approach LOS		C		E		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	33.2	43.8				77.0		23.0
Change Period (Y+Rc), s	* 5.2	* 6.7				* 6.7		5.5
Max Green Setting (Gmax), s	* 28	* 37				* 61		17.5
Max Q Clear Time (g_c+I1), s	28.4	39.1				19.1		19.5
Green Ext Time (p_c), s	0.0	0.0				8.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	140.3
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	50	10	60	360	0	10	0	30	0	0	0
Future Volume (veh/h)	0	50	10	60	360	0	10	0	30	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	54	11	65	391	0	11	0	33	0	0	0
Adj No. of Lanes	1	2	1	1	2	1	1	3	1	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	4	407	182	110	978	438	25	2665	830	4	2085	649
Arrive On Green	0.00	0.11	0.11	0.06	0.28	0.00	0.01	0.00	0.52	0.00	0.00	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	0	54	11	65	391	0	11	0	33	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.0	0.6	0.3	1.6	4.1	0.0	0.3	0.0	0.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.6	0.3	1.6	4.1	0.0	0.3	0.0	0.5	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	4	407	182	110	978	438	25	2665	830	4	2085	649
V/C Ratio(X)	0.00	0.13	0.06	0.59	0.40	0.00	0.43	0.00	0.04	0.00	0.00	0.00
Avail Cap(c_a), veh/h	197	1412	632	216	1451	649	197	2665	830	197	2085	649
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	17.9	17.8	20.6	13.3	0.0	22.1	0.0	5.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.1	5.0	0.3	0.0	11.3	0.0	0.1	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.1	0.9	2.0	0.0	0.2	0.0	0.2	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	18.1	17.9	25.7	13.5	0.0	33.4	0.0	5.3	0.0	0.0	0.0
LnGrp LOS		B	B	C	B		C		A			
Approach Vol, veh/h		65			456			44			0	
Approach Delay, s/veh		18.1			15.3			12.3			0.0	
Approach LOS		B			B			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	28.1	7.3	9.7	5.1	23.0	0.0	17.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.5	5.5	18.0	5.0	18.5	5.0	18.5
Max Q Clear Time (g_c+I1), s	0.0	2.5	3.6	2.6	2.3	0.0	0.0	6.1
Green Ext Time (p_c), s	0.0	0.0	0.0	2.6	0.0	0.0	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	15.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	140	250	0	450	300	330	1100	0	100	820	490
Future Volume (veh/h)	200	140	250	0	450	300	330	1100	0	100	820	490
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	217	152	272	0	489	326	359	1196	0	109	891	533
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	281	1288	576	4	800	358	439	2082	648	197	1724	537
Arrive On Green	0.08	0.36	0.36	0.00	0.23	0.23	0.13	0.41	0.00	0.06	0.34	0.34
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	217	152	272	0	489	326	359	1196	0	109	891	533
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	4.9	2.3	10.5	0.0	9.9	16.0	8.1	14.5	0.0	2.5	11.2	26.7
Cycle Q Clear(g_c), s	4.9	2.3	10.5	0.0	9.9	16.0	8.1	14.5	0.0	2.5	11.2	26.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	281	1288	576	4	800	358	439	2082	648	197	1724	537
V/C Ratio(X)	0.77	0.12	0.47	0.00	0.61	0.91	0.82	0.57	0.00	0.55	0.52	0.99
Avail Cap(c_a), veh/h	281	1288	576	216	800	358	454	2082	648	255	1724	537
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	16.8	19.4	0.0	27.7	30.0	33.8	18.2	0.0	36.6	21.1	26.2
Incr Delay (d2), s/veh	12.5	0.0	0.6	0.0	1.4	26.7	11.0	1.2	0.0	2.4	1.1	37.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	1.1	4.7	0.0	5.0	9.6	4.5	7.0	0.0	1.2	5.4	17.2
LnGrp Delay(d),s/veh	48.3	16.9	20.0	0.0	29.1	56.7	44.8	19.3	0.0	39.0	22.2	63.4
LnGrp LOS	D	B	C		C	E	D	B		D	C	E
Approach Vol, veh/h		641			815			1555			1533	
Approach Delay, s/veh		28.9			40.1			25.2			37.7	
Approach LOS		C			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	37.1	0.0	33.5	14.7	31.5	11.0	22.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.9	31.6	5.0	19.5	10.5	27.0	6.5	18.0
Max Q Clear Time (g_c+I1), s	4.5	16.5	0.0	12.5	10.1	28.7	6.9	18.0
Green Ext Time (p_c), s	0.0	12.6	0.0	3.6	0.1	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	32.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	290	100	30	10	140	10	50	720	70	10	230	240
Future Volume (veh/h)	290	100	30	10	140	10	50	720	70	10	230	240
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	315	109	33	11	152	11	54	783	76	11	250	261
Adj No. of Lanes	1	2	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	369	1138	509	25	237	202	86	1307	585	25	1185	530
Arrive On Green	0.21	0.32	0.32	0.01	0.13	0.13	0.05	0.37	0.37	0.01	0.33	0.33
Sat Flow, veh/h	1774	3539	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	315	109	33	11	152	11	54	783	76	11	250	261
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	10.9	1.4	0.9	0.4	5.0	0.4	1.9	11.5	2.0	0.4	3.2	8.4
Cycle Q Clear(g_c), s	10.9	1.4	0.9	0.4	5.0	0.4	1.9	11.5	2.0	0.4	3.2	8.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	369	1138	509	25	237	202	86	1307	585	25	1185	530
V/C Ratio(X)	0.85	0.10	0.06	0.45	0.64	0.05	0.63	0.60	0.13	0.45	0.21	0.49
Avail Cap(c_a), veh/h	486	1689	756	139	525	446	142	1307	585	139	1185	530
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.4	15.2	15.0	31.3	26.5	24.5	29.9	16.3	13.4	31.3	15.2	16.9
Incr Delay (d2), s/veh	10.9	0.0	0.1	12.2	2.9	0.1	7.4	2.0	0.5	12.2	0.4	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	0.7	0.4	0.3	2.7	0.2	1.1	5.9	0.9	0.3	1.6	4.1
LnGrp Delay(d),s/veh	35.3	15.2	15.1	43.4	29.4	24.6	37.3	18.4	13.8	43.4	15.6	20.2
LnGrp LOS	D	B	B	D	C	C	D	B	B	D	B	C
Approach Vol, veh/h		457			174			913			522	
Approach Delay, s/veh		29.1			30.0			19.1			18.5	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.4	28.1	5.4	25.0	7.6	25.9	17.8	12.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	21.5	5.0	30.5	5.1	21.4	17.5	18.0
Max Q Clear Time (g_c+I1), s	2.4	13.5	2.4	3.4	3.9	10.4	12.9	7.0
Green Ext Time (p_c), s	0.0	4.8	0.0	1.7	0.0	6.0	0.4	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	22.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	220	100	60	830	220	240	300	90	60	120	20
Future Volume (veh/h)	30	220	100	60	830	220	240	300	90	60	120	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	33	239	109	65	902	239	261	326	98	65	130	22
Adj No. of Lanes	2	3	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	1660	517	204	1236	553	432	698	312	204	465	208
Arrive On Green	0.04	0.33	0.33	0.06	0.35	0.35	0.13	0.20	0.20	0.06	0.13	0.13
Sat Flow, veh/h	3442	5085	1583	3442	3539	1583	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	33	239	109	65	902	239	261	326	98	65	130	22
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1770	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	0.5	1.7	2.5	0.9	11.2	5.8	3.6	4.1	2.7	0.9	1.7	0.6
Cycle Q Clear(g_c), s	0.5	1.7	2.5	0.9	11.2	5.8	3.6	4.1	2.7	0.9	1.7	0.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	126	1660	517	204	1236	553	432	698	312	204	465	208
V/C Ratio(X)	0.26	0.14	0.21	0.32	0.73	0.43	0.60	0.47	0.31	0.32	0.28	0.11
Avail Cap(c_a), veh/h	342	2071	645	342	1441	645	1230	2214	991	342	1301	582
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	12.0	12.3	22.7	14.3	12.6	20.8	17.9	17.3	22.7	19.7	19.3
Incr Delay (d2), s/veh	1.1	0.0	0.2	0.9	1.6	0.5	1.4	0.5	0.6	0.9	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.8	1.1	0.5	5.7	2.6	1.8	2.0	1.2	0.5	0.8	0.3
LnGrp Delay(d),s/veh	24.7	12.0	12.5	23.6	15.9	13.1	22.2	18.3	17.9	23.6	20.0	19.5
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	C	B
Approach Vol, veh/h		381			1206			685			217	
Approach Delay, s/veh		13.2			15.8			19.7			21.1	
Approach LOS		B			B			B			C	

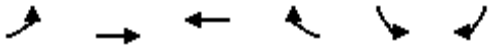
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	14.4	7.5	20.9	10.8	11.1	6.3	22.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	31.5	5.0	20.5	18.0	18.5	5.0	20.5
Max Q Clear Time (g_c+I1), s	2.9	6.1	2.9	4.5	5.6	3.7	2.5	13.2
Green Ext Time (p_c), s	0.0	3.5	0.0	7.3	0.7	2.9	0.0	4.4

Intersection Summary	
HCM 2010 Ctrl Delay	16.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	80	50	40	230	80	140	80	70	40	90	30
Future Volume (veh/h)	20	80	50	40	230	80	140	80	70	40	90	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	22	87	54	43	250	87	152	87	76	43	98	33
Adj No. of Lanes	1	1	1	2	1	1	1	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	46	327	278	152	361	307	192	1416	634	152	1189	532
Arrive On Green	0.03	0.18	0.18	0.04	0.19	0.19	0.11	0.40	0.40	0.04	0.34	0.34
Sat Flow, veh/h	1774	1863	1583	3442	1863	1583	1774	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	22	87	54	43	250	87	152	87	76	43	98	33
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1721	1863	1583	1774	1770	1583	1721	1770	1583
Q Serve(g_s), s	0.7	2.2	1.6	0.6	6.7	2.5	4.5	0.8	1.6	0.6	1.0	0.8
Cycle Q Clear(g_c), s	0.7	2.2	1.6	0.6	6.7	2.5	4.5	0.8	1.6	0.6	1.0	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	46	327	278	152	361	307	192	1416	634	152	1189	532
V/C Ratio(X)	0.48	0.27	0.19	0.28	0.69	0.28	0.79	0.06	0.12	0.28	0.08	0.06
Avail Cap(c_a), veh/h	166	626	532	321	626	532	199	1416	634	321	1189	532
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.7	19.1	18.8	24.8	20.1	18.4	23.3	9.9	10.1	24.8	12.1	12.1
Incr Delay (d2), s/veh	7.4	0.4	0.3	1.0	2.4	0.5	18.7	0.1	0.4	1.0	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.2	0.7	0.3	3.6	1.1	3.2	0.4	0.8	0.3	0.5	0.4
LnGrp Delay(d),s/veh	33.1	19.5	19.2	25.8	22.5	18.9	42.0	10.0	10.5	25.8	12.3	12.3
LnGrp LOS	C	B	B	C	C	B	D	A	B	C	B	B
Approach Vol, veh/h		163			380			315			174	
Approach Delay, s/veh		21.3			22.1			25.5			15.6	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	25.9	6.9	13.9	10.3	22.5	5.9	14.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	6.0	18.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.6	3.6	2.6	4.2	6.5	3.0	2.7	8.7
Green Ext Time (p_c), s	0.0	1.3	0.0	2.1	0.0	1.3	0.0	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	21.9
HCM 2010 LOS	C



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	0	0	0	0	30
Future Volume (veh/h)	30	0	0	0	0	30
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	33	0	0	0	0	33
Adj No. of Lanes	2	2	2	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	139	143	12	6	1145	1022
Arrive On Green	0.04	0.00	0.00	0.00	0.00	0.65
Sat Flow, veh/h	3442	3632	-82054	1583	1774	1583
Grp Volume(v), veh/h	33	0	0	0	0	33
Grp Sat Flow(s),veh/h/ln	1721	1770	1770	1583	1774	1583
Q Serve(g_s), s	0.3	0.0	0.0	0.0	0.0	0.2
Cycle Q Clear(g_c), s	0.3	0.0	0.0	0.0	0.0	0.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	139	143	12	6	1145	1022
V/C Ratio(X)	0.24	0.00	0.00	0.00	0.00	0.03
Avail Cap(c_a), veh/h	601	3397	2223	995	1145	1022
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	13.3	0.0	0.0	0.0	0.0	1.8
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.0	0.0	0.4
LnGrp Delay(d),s/veh	14.2	0.0	0.0	0.0	0.0	1.9
LnGrp LOS	B					A
Approach Vol, veh/h		33	0		33	
Approach Delay, s/veh		14.2	0.0		1.9	
Approach LOS		B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				5.7		23.0	5.7	0.0
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				27.5		18.5	5.0	18.0
Max Q Clear Time (g_c+I1), s				0.0		2.2	2.3	0.0
Green Ext Time (p_c), s				0.0		0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	8.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	50	60	0	400	0	130	0	150	0	0	0
Future Volume (veh/h)	0	50	60	0	400	0	130	0	150	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	54	65	0	435	0	141	0	163	0	0	0
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	9	1134	507	9	1134	507	238	452	384	9	9	8
Arrive On Green	0.00	0.32	0.32	0.00	0.32	0.00	0.13	0.00	0.24	0.00	0.00	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	0	54	65	0	435	0	141	0	163	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.0	0.2	0.6	0.0	2.0	0.0	1.5	0.0	1.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.2	0.6	0.0	2.0	0.0	1.5	0.0	1.8	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	9	1134	507	9	1134	507	238	452	384	9	9	8
V/C Ratio(X)	0.00	0.05	0.13	0.00	0.38	0.00	0.59	0.00	0.42	0.00	0.00	0.00
Avail Cap(c_a), veh/h	431	3093	1384	431	3093	1384	508	1718	1460	431	1637	1391
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	4.8	5.0	0.0	5.4	0.0	8.4	0.0	6.6	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.1	0.0	0.2	0.0	2.3	0.0	0.7	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.3	0.0	0.9	0.0	0.9	0.0	0.8	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	4.8	5.1	0.0	5.6	0.0	10.7	0.0	7.3	0.0	0.0	0.0
LnGrp LOS		A	A		A		B		A			
Approach Vol, veh/h		119			435			304			0	
Approach Delay, s/veh		5.0			5.6			8.9			0.0	
Approach LOS		A			A			A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	9.5	0.0	11.1	7.3	2.2	0.0	11.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	5.9	18.1	5.0	18.0
Max Q Clear Time (g_c+I1), s	0.0	3.8	0.0	2.6	3.5	0.0	0.0	4.0
Green Ext Time (p_c), s	0.0	0.4	0.0	3.1	0.1	0.0	0.0	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	6.7
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	10	20	10	10	0	80	30	10	0	20	10
Future Volume (veh/h)	40	10	20	10	10	0	80	30	10	0	20	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	43	11	22	11	11	0	87	33	11	0	22	11
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	164	139	25	104	88	132	1099	934	4	769	654
Arrive On Green	0.05	0.09	0.09	0.01	0.06	0.00	0.07	0.59	0.59	0.00	0.41	0.41
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	43	11	22	11	11	0	87	33	11	0	22	11
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.0	0.2	0.6	0.3	0.2	0.0	2.1	0.3	0.1	0.0	0.3	0.2
Cycle Q Clear(g_c), s	1.0	0.2	0.6	0.3	0.2	0.0	2.1	0.3	0.1	0.0	0.3	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	82	164	139	25	104	88	132	1099	934	4	769	654
V/C Ratio(X)	0.52	0.07	0.16	0.43	0.11	0.00	0.66	0.03	0.01	0.00	0.03	0.02
Avail Cap(c_a), veh/h	202	765	650	202	765	650	239	1099	934	202	769	654
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	20.4	18.3	18.5	21.4	19.7	0.0	19.7	3.8	3.7	0.0	7.6	7.6
Incr Delay (d2), s/veh	5.0	0.2	0.5	11.2	0.4	0.0	5.5	0.1	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.1	0.3	0.2	0.1	0.0	1.2	0.2	0.1	0.0	0.2	0.1
LnGrp Delay(d),s/veh	25.4	18.5	19.0	32.7	20.1	0.0	25.2	3.8	3.7	0.0	7.7	7.7
LnGrp LOS	C	B	B	C	C		C	A	A		A	A
Approach Vol, veh/h		76			22			131			33	
Approach Delay, s/veh		22.6			26.4			18.0			7.7	
Approach LOS		C			C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	30.4	5.1	8.4	7.8	22.6	6.5	6.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	5.9	18.1	5.0	18.0
Max Q Clear Time (g_c+I1), s	0.0	2.3	2.3	2.6	4.1	2.3	3.0	2.2
Green Ext Time (p_c), s	0.0	0.2	0.0	0.1	0.0	0.2	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	18.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	270	50	20	530	30	250	20	50	20	10	80
Future Volume (veh/h)	20	270	50	20	530	30	250	20	50	20	10	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	22	293	54	22	576	33	272	22	54	22	11	87
Adj No. of Lanes	1	3	1	2	2	1	2	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	46	1240	386	89	863	386	353	730	620	46	586	498
Arrive On Green	0.03	0.24	0.24	0.03	0.24	0.24	0.10	0.39	0.39	0.03	0.31	0.31
Sat Flow, veh/h	1774	5085	1583	3442	3539	1583	3442	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	22	293	54	22	576	33	272	22	54	22	11	87
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1770	1583	1721	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.7	2.7	1.5	0.4	8.5	0.9	4.4	0.4	1.2	0.7	0.2	2.3
Cycle Q Clear(g_c), s	0.7	2.7	1.5	0.4	8.5	0.9	4.4	0.4	1.2	0.7	0.2	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	46	1240	386	89	863	386	353	730	620	46	586	498
V/C Ratio(X)	0.48	0.24	0.14	0.25	0.67	0.09	0.77	0.03	0.09	0.48	0.02	0.17
Avail Cap(c_a), veh/h	154	1592	496	299	1108	496	353	730	620	154	586	498
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.6	17.4	17.0	27.5	19.6	16.8	25.1	10.8	11.0	27.6	13.6	14.3
Incr Delay (d2), s/veh	7.6	0.1	0.2	1.4	1.0	0.1	10.0	0.1	0.3	7.6	0.1	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.3	0.7	0.2	4.2	0.4	2.6	0.2	0.6	0.4	0.1	1.1
LnGrp Delay(d),s/veh	35.3	17.5	17.2	28.9	20.7	16.9	35.1	10.8	11.3	35.3	13.6	15.0
LnGrp LOS	D	B	B	C	C	B	D	B	B	D	B	B
Approach Vol, veh/h		369			631			348			120	
Approach Delay, s/veh		18.5			20.8			29.9			18.6	
Approach LOS		B			C			C			B	

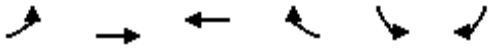
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.0	27.0	6.0	18.5	10.4	22.6	6.0	18.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	5.9	18.1	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.7	3.2	2.4	4.7	6.4	4.3	2.7	10.5
Green Ext Time (p_c), s	0.0	0.5	0.0	5.2	0.0	0.5	0.0	3.6

Intersection Summary	
HCM 2010 Ctrl Delay	22.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	100	10	20	280	20	50	10	100	20	10	10
Future Volume (veh/h)	10	100	10	20	280	20	50	10	100	20	10	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	11	109	11	22	304	22	54	11	109	22	11	11
Adj No. of Lanes	2	1	1	1	1	1	2	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	49	392	333	47	415	353	180	720	612	47	671	570
Arrive On Green	0.01	0.21	0.21	0.03	0.22	0.22	0.05	0.39	0.39	0.03	0.36	0.36
Sat Flow, veh/h	3442	1863	1583	1774	1863	1583	3442	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	11	109	11	22	304	22	54	11	109	22	11	11
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1863	1583	1721	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.2	2.5	0.3	0.6	7.8	0.6	0.8	0.2	2.3	0.6	0.2	0.2
Cycle Q Clear(g_c), s	0.2	2.5	0.3	0.6	7.8	0.6	0.8	0.2	2.3	0.6	0.2	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	49	392	333	47	415	353	180	720	612	47	671	570
V/C Ratio(X)	0.23	0.28	0.03	0.47	0.73	0.06	0.30	0.02	0.18	0.47	0.02	0.02
Avail Cap(c_a), veh/h	335	671	570	173	671	570	335	720	612	173	671	570
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.0	17.0	16.1	24.6	18.5	15.7	23.4	9.7	10.4	24.6	10.6	10.6
Incr Delay (d2), s/veh	2.3	0.4	0.0	7.3	2.5	0.1	0.9	0.0	0.6	7.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.3	0.1	0.4	4.3	0.3	0.4	0.1	1.1	0.4	0.1	0.1
LnGrp Delay(d),s/veh	27.4	17.4	16.1	31.9	21.1	15.8	24.3	9.8	11.0	31.9	10.6	10.6
LnGrp LOS	C	B	B	C	C	B	C	A	B	C	B	B
Approach Vol, veh/h		131			348			174			44	
Approach Delay, s/veh		18.1			21.4			15.1			21.3	
Approach LOS		B			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	24.3	5.8	15.3	7.2	23.0	5.2	15.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.5	5.0	18.5	5.0	18.5	5.0	18.5
Max Q Clear Time (g_c+I1), s	2.6	4.3	2.6	4.5	2.8	2.2	2.2	9.8
Green Ext Time (p_c), s	0.0	0.4	0.0	2.2	0.0	0.4	0.0	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	19.2
HCM 2010 LOS	B



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	100	100	30	60	120
Future Volume (veh/h)	30	100	100	30	60	120
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	33	109	109	33	65	130
Adj No. of Lanes	1	2	2	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	74	1513	635	284	282	252
Arrive On Green	0.04	0.43	0.18	0.18	0.16	0.16
Sat Flow, veh/h	1774	3632	3632	1583	1774	1583
Grp Volume(v), veh/h	33	109	109	33	65	130
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1583	1774	1583
Q Serve(g_s), s	0.4	0.4	0.6	0.4	0.7	1.6
Cycle Q Clear(g_c), s	0.4	0.4	0.6	0.4	0.7	1.6
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	74	1513	635	284	282	252
V/C Ratio(X)	0.45	0.07	0.17	0.12	0.23	0.52
Avail Cap(c_a), veh/h	432	4519	2926	1309	1483	1324
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.2	3.7	7.6	7.5	8.0	8.4
Incr Delay (d2), s/veh	4.2	0.0	0.1	0.2	0.4	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.2	0.3	0.4	0.4	1.5
LnGrp Delay(d),s/veh	14.4	3.7	7.7	7.7	8.4	10.0
LnGrp LOS	B	A	A	A	A	B
Approach Vol, veh/h		142	142		195	
Approach Delay, s/veh		6.2	7.7		9.5	
Approach LOS		A	A		A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				13.8		8.0	5.4	8.4
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				27.8		18.2	5.3	18.0
Max Q Clear Time (g_c+I1), s				2.4		3.6	2.4	2.6
Green Ext Time (p_c), s				1.5		0.5	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	8.0
HCM 2010 LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	50	280	1490	30	40	660
Future Volume (veh/h)	50	280	1490	30	40	660
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	54	304	1620	33	43	717
Adj No. of Lanes	1	1	3	1	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	403	367	2443	761	151	2149
Arrive On Green	0.23	0.23	0.48	0.48	0.04	0.61
Sat Flow, veh/h	1774	1615	5253	1583	3442	3632
Grp Volume(v), veh/h	54	304	1620	33	43	717
Grp Sat Flow(s),veh/h/ln	1774	1615	1695	1583	1721	1770
Q Serve(g_s), s	1.3	9.7	13.2	0.6	0.7	5.4
Cycle Q Clear(g_c), s	1.3	9.7	13.2	0.6	0.7	5.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	403	367	2443	761	151	2149
V/C Ratio(X)	0.13	0.83	0.66	0.04	0.28	0.33
Avail Cap(c_a), veh/h	588	535	2443	761	317	2149
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.7	20.0	10.8	7.5	25.2	5.3
Incr Delay (d2), s/veh	0.1	7.0	1.4	0.1	1.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	5.0	6.5	0.3	0.3	2.7
LnGrp Delay(d),s/veh	16.9	27.0	12.2	7.6	26.2	5.7
LnGrp LOS	B	C	B	A	C	A
Approach Vol, veh/h	358		1653			760
Approach Delay, s/veh	25.5		12.1			6.8
Approach LOS	C		B			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.9	30.6				37.5		16.9
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5
Max Green Setting (Gmax), s	5.0	23.5				33.0		18.0
Max Q Clear Time (g_c+I1), s	2.7	15.2				7.4		11.7
Green Ext Time (p_c), s	0.0	7.0				17.3		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	12.4
HCM 2010 LOS	B

Notes

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	140	30	20	730	740	20
Future Volume (veh/h)	140	30	20	730	740	20
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	152	33	22	793	804	22
Adj No. of Lanes	1	1	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	218	195	48	2349	1876	839
Arrive On Green	0.12	0.12	0.03	0.66	0.53	0.53
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583
Grp Volume(v), veh/h	152	33	22	793	804	22
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583
Q Serve(g_s), s	3.5	0.8	0.5	4.1	5.8	0.3
Cycle Q Clear(g_c), s	3.5	0.8	0.5	4.1	5.8	0.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	218	195	48	2349	1876	839
V/C Ratio(X)	0.70	0.17	0.46	0.34	0.43	0.03
Avail Cap(c_a), veh/h	757	676	210	2349	1876	839
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.7	16.6	20.2	3.1	6.0	4.7
Incr Delay (d2), s/veh	4.0	0.4	6.8	0.4	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.7	0.3	2.1	3.0	0.1
LnGrp Delay(d),s/veh	21.7	17.0	27.0	3.5	6.7	4.8
LnGrp LOS	C	B	C	A	A	A
Approach Vol, veh/h	185			815	826	
Approach Delay, s/veh	20.9			4.1	6.7	
Approach LOS	C			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		32.5		9.7	5.6	26.9		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		28.0		18.0	5.0	18.5		
Max Q Clear Time (g_c+I1), s		6.1		5.5	2.5	7.8		
Green Ext Time (p_c), s		12.1		0.4	0.0	7.3		

Intersection Summary	
HCM 2010 Ctrl Delay	7.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	50	710	240	110	600	0	10	240	1150	140	10	150
Future Volume (veh/h)	50	710	240	110	600	0	10	240	1150	140	10	150
Number	3	8	18	7	4	14		1	6	16		5
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0		0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00		1.00		0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		1863	1863	1900		1863
Adj Flow Rate, veh/h	54	772	261	120	652	0		261	1250	152		163
Adj No. of Lanes	1	1	1	1	1	1		1	3	0		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		0.92	0.92	0.92		0.92
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2		2
Cap, veh/h	69	570	484	100	603	512		183	1658	202		185
Arrive On Green	0.04	0.31	0.31	0.06	0.32	0.00		0.10	0.36	0.36		0.10
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583		1774	4583	557		1774
Grp Volume(v), veh/h	54	772	261	120	652	0		261	925	477		163
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583		1774	1695	1750		1774
Q Serve(g_s), s	4.5	46.0	20.6	8.5	48.6	0.0		15.5	36.0	36.0		13.6
Cycle Q Clear(g_c), s	4.5	46.0	20.6	8.5	48.6	0.0		15.5	36.0	36.0		13.6
Prop In Lane	1.00		1.00	1.00		1.00		1.00		0.32		1.00
Lane Grp Cap(c), veh/h	69	570	484	100	603	512		183	1226	633		185
V/C Ratio(X)	0.78	1.36	0.54	1.20	1.08	0.00		1.43	0.75	0.75		0.88
Avail Cap(c_a), veh/h	71	570	484	100	603	512		183	1226	633		250
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00		1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	71.6	52.2	43.4	70.9	50.9	0.0		67.4	42.1	42.1		66.4
Incr Delay (d2), s/veh	38.0	171.0	0.7	152.1	60.9	0.0		221.0	2.4	4.6		19.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
%ile BackOfQ(50%),veh/ln	3.0	50.6	9.1	8.4	35.1	0.0		18.8	17.2	18.2		7.7
LnGrp Delay(d),s/veh	109.7	223.2	44.0	223.1	111.7	0.0		288.5	44.5	46.7		85.4
LnGrp LOS	F	F	D	F	F			F	D	D		F
Approach Vol, veh/h		1087			772				1663			
Approach Delay, s/veh		174.6			129.1				83.4			
Approach LOS		F			F				F			

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	62.0	11.4	56.0	21.2	61.8	14.0	53.4
Change Period (Y+Rc), s	5.5	7.4	5.5	7.4	5.5	7.4	5.5	* 7.4
Max Green Setting (Gmax), s	15.5	54.6	6.0	48.1	21.2	48.9	8.5	* 46
Max Q Clear Time (g_c+I1), s	17.5	56.6	6.5	50.6	15.6	38.0	10.5	48.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	10.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	194.9
HCM 2010 LOS	F

Notes

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	2610	70
Future Volume (veh/h)	2610	70
Number	2	12
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	2837	0
Adj No. of Lanes	3	1
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	1846	575
Arrive On Green	0.36	0.00
Sat Flow, veh/h	5085	1583
Grp Volume(v), veh/h	2837	0
Grp Sat Flow(s),veh/h/ln	1695	1583
Q Serve(g_s), s	54.6	0.0
Cycle Q Clear(g_c), s	54.6	0.0
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1846	575
V/C Ratio(X)	1.54	0.00
Avail Cap(c_a), veh/h	1846	575
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	47.9	0.0
Incr Delay (d2), s/veh	244.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	67.2	0.0
LnGrp Delay(d),s/veh	292.2	0.0
LnGrp LOS	F	
Approach Vol, veh/h	3000	
Approach Delay, s/veh	281.0	
Approach LOS	F	
Timer		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	780	50	150	580	10	10	150	70	20	680	160
Future Volume (veh/h)	160	780	50	150	580	10	10	150	70	20	680	160
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	174	848	54	163	630	11	11	163	76	22	739	174
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	149	872	56	149	919	16	12	502	234	64	832	707
Arrive On Green	0.08	0.26	0.26	0.08	0.26	0.26	0.01	0.42	0.42	0.04	0.45	0.45
Sat Flow, veh/h	1774	3379	215	1774	3559	62	1774	1203	561	1774	1863	1583
Grp Volume(v), veh/h	174	444	458	163	313	328	11	0	239	22	739	174
Grp Sat Flow(s),veh/h/ln	1774	1770	1825	1774	1770	1852	1774	0	1764	1774	1863	1583
Q Serve(g_s), s	7.0	20.7	20.7	7.0	13.3	13.3	0.5	0.0	7.6	1.0	30.3	5.7
Cycle Q Clear(g_c), s	7.0	20.7	20.7	7.0	13.3	13.3	0.5	0.0	7.6	1.0	30.3	5.7
Prop In Lane	1.00		0.12	1.00		0.03	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	149	457	471	149	457	478	12	0	736	64	832	707
V/C Ratio(X)	1.17	0.97	0.97	1.09	0.69	0.69	0.91	0.00	0.32	0.34	0.89	0.25
Avail Cap(c_a), veh/h	149	457	471	149	457	478	117	0	736	394	872	742
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.1	30.6	30.6	38.1	27.8	27.8	41.3	0.0	16.3	39.2	21.1	14.3
Incr Delay (d2), s/veh	125.5	34.9	34.3	100.8	4.7	4.5	53.3	0.0	1.2	1.2	13.5	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	14.5	14.9	7.6	7.0	7.3	0.4	0.0	4.0	0.5	18.5	2.6
LnGrp Delay(d),s/veh	163.7	65.5	64.9	138.9	32.5	32.3	94.6	0.0	17.5	40.3	34.6	15.1
LnGrp LOS	F	E	E	F	C	C	F		B	D	C	B
Approach Vol, veh/h		1076			804			250			935	
Approach Delay, s/veh		81.1			54.0			20.9			31.1	
Approach LOS		F			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	26.0	4.6	41.7	11.0	26.0	7.0	39.3
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.5
Max Green Setting (Gmax), s	7.0	21.5	5.5	39.0	7.0	21.5	18.5	26.0
Max Q Clear Time (g_c+I1), s	9.0	15.3	2.5	32.3	9.0	22.7	3.0	9.6
Green Ext Time (p_c), s	0.0	4.7	0.0	4.9	0.0	0.0	0.0	14.0

Intersection Summary	
HCM 2010 Ctrl Delay	53.8
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	780	0	20	610	10	10	10	10	10	230	130
Future Volume (veh/h)	80	780	0	20	610	10	10	10	10	10	230	130
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	87	848	0	22	663	11	11	11	11	11	250	141
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	365	1033	0	254	1013	17	184	177	135	75	308	169
Arrive On Green	0.55	0.55	0.00	0.55	0.55	0.55	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	761	1863	0	647	1827	30	338	641	490	18	1117	613
Grp Volume(v), veh/h	87	848	0	22	0	674	33	0	0	402	0	0
Grp Sat Flow(s),veh/h/ln	761	1863	0	647	0	1857	1469	0	0	1748	0	0
Q Serve(g_s), s	4.8	19.8	0.0	1.5	0.0	13.5	0.0	0.0	0.0	2.3	0.0	0.0
Cycle Q Clear(g_c), s	18.3	19.8	0.0	21.3	0.0	13.5	0.7	0.0	0.0	11.5	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.02	0.33		0.33	0.03		0.35
Lane Grp Cap(c), veh/h	365	1033	0	254	0	1030	496	0	0	552	0	0
V/C Ratio(X)	0.24	0.82	0.00	0.09	0.00	0.65	0.07	0.00	0.00	0.73	0.00	0.00
Avail Cap(c_a), veh/h	410	1143	0	292	0	1140	593	0	0	674	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.7	9.7	0.0	18.4	0.0	8.3	14.2	0.0	0.0	18.1	0.0	0.0
Incr Delay (d2), s/veh	0.3	4.5	0.0	0.1	0.0	1.2	0.1	0.0	0.0	3.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	11.2	0.0	0.3	0.0	7.1	0.4	0.0	0.0	6.0	0.0	0.0
LnGrp Delay(d),s/veh	15.0	14.2	0.0	18.5	0.0	9.5	14.2	0.0	0.0	21.2	0.0	0.0
LnGrp LOS	B	B		B		A	B			C		
Approach Vol, veh/h		935			696			33			402	
Approach Delay, s/veh		14.3			9.7			14.2			21.2	
Approach LOS		B			A			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		19.2		34.0		19.2		34.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		18.4		32.6		18.4		32.6
Max Q Clear Time (g_c+I1), s		2.7		21.8		13.5		23.3
Green Ext Time (p_c), s		2.5		6.9		1.2		6.2

Intersection Summary	
HCM 2010 Ctrl Delay	14.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	620	20	50	440	160	20	480	100	260	1170	260
Future Volume (veh/h)	210	620	20	50	440	160	20	480	100	260	1170	260
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	228	674	22	54	478	174	22	522	109	283	1272	283
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	252	712	605	69	521	442	49	837	374	307	1351	829
Arrive On Green	0.14	0.38	0.38	0.04	0.28	0.28	0.03	0.24	0.24	0.17	0.38	0.38
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	228	674	22	54	478	174	22	522	109	283	1272	283
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	16.6	45.9	1.1	4.0	32.6	11.7	1.6	17.3	7.4	20.6	45.4	13.6
Cycle Q Clear(g_c), s	16.6	45.9	1.1	4.0	32.6	11.7	1.6	17.3	7.4	20.6	45.4	13.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	252	712	605	69	521	442	49	837	374	307	1351	829
V/C Ratio(X)	0.91	0.95	0.04	0.78	0.92	0.39	0.45	0.62	0.29	0.92	0.94	0.34
Avail Cap(c_a), veh/h	263	752	639	72	552	469	257	921	412	481	1378	841
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.4	39.2	25.4	62.4	45.8	38.2	62.7	44.8	41.0	53.3	39.1	18.1
Incr Delay (d2), s/veh	30.4	19.9	0.0	36.5	19.2	0.2	2.4	0.7	0.2	12.5	12.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.2	27.5	0.5	2.6	19.5	5.1	0.8	8.6	3.3	11.1	24.6	5.9
LnGrp Delay(d),s/veh	85.7	59.0	25.4	98.9	65.0	38.4	65.1	45.5	41.2	65.9	51.6	18.2
LnGrp LOS	F	E	C	F	E	D	E	D	D	E	D	B
Approach Vol, veh/h		924			706			653			1838	
Approach Delay, s/veh		64.8			61.0			45.5			48.6	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.1	43.4	8.1	56.4	9.6	56.9	27.2	37.4
Change Period (Y+Rc), s	4.5	6.8	4.5	* 6.4	4.5	6.8	4.5	6.4
Max Green Setting (Gmax), s	19.4	38.8	19.0	* 51	5.3	52.9	35.5	34.1
Max Q Clear Time (g_c+I1), s	18.6	34.6	3.6	47.4	6.0	47.9	22.6	19.3
Green Ext Time (p_c), s	0.0	1.9	0.0	2.6	0.0	2.2	0.1	7.3

Intersection Summary	
HCM 2010 Ctrl Delay	53.9
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	680	10	70	380	60	10	700	70	70	620	250
Future Volume (veh/h)	300	680	10	70	380	60	10	700	70	70	620	250
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	326	739	11	76	413	65	11	761	76	76	674	272
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	342	766	11	97	441	69	14	795	79	90	708	286
Arrive On Green	0.19	0.42	0.42	0.05	0.28	0.28	0.01	0.24	0.24	0.05	0.29	0.29
Sat Flow, veh/h	1774	1831	27	1774	1572	247	1774	3251	325	1774	2463	994
Grp Volume(v), veh/h	326	0	750	76	0	478	11	414	423	76	484	462
Grp Sat Flow(s),veh/h/ln	1774	0	1858	1774	0	1819	1774	1770	1805	1774	1770	1687
Q Serve(g_s), s	17.9	0.0	38.8	4.2	0.0	25.3	0.6	22.7	22.8	4.2	26.4	26.5
Cycle Q Clear(g_c), s	17.9	0.0	38.8	4.2	0.0	25.3	0.6	22.7	22.8	4.2	26.4	26.5
Prop In Lane	1.00		0.01	1.00		0.14	1.00		0.18	1.00		0.59
Lane Grp Cap(c), veh/h	342	0	777	97	0	510	14	433	442	90	509	485
V/C Ratio(X)	0.95	0.00	0.96	0.78	0.00	0.94	0.78	0.96	0.96	0.84	0.95	0.95
Avail Cap(c_a), veh/h	342	0	777	207	0	537	90	433	442	90	509	485
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.3	0.0	27.9	46.0	0.0	34.6	48.8	36.7	36.7	46.4	34.4	34.4
Incr Delay (d2), s/veh	36.0	0.0	23.8	5.0	0.0	23.1	28.7	32.0	31.8	46.5	27.9	28.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.2	0.0	24.9	2.2	0.0	15.9	0.4	14.9	15.2	3.2	16.9	16.2
LnGrp Delay(d),s/veh	75.3	0.0	51.7	51.0	0.0	57.7	77.4	68.7	68.5	92.8	62.3	63.2
LnGrp LOS	E		D	D		E	E	E	E	F	E	E
Approach Vol, veh/h		1076			554			848			1022	
Approach Delay, s/veh		58.9			56.8			68.7			65.0	
Approach LOS		E			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.5	34.4	5.3	35.3	9.9	48.0	9.5	31.1
Change Period (Y+Rc), s	4.5	6.8	4.5	* 7	4.5	* 6.8	4.5	7.0
Max Green Setting (Gmax), s	19.0	29.1	5.0	* 24	11.5	* 37	5.0	24.1
Max Q Clear Time (g_c+I1), s	19.9	27.3	2.6	28.5	6.2	40.8	6.2	24.8
Green Ext Time (p_c), s	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	62.7
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	20	20	10	20	110	10	170	10	180	320	40
Future Volume (veh/h)	30	20	20	10	20	110	10	170	10	180	320	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	33	22	22	11	22	120	11	185	11	196	348	43
Adj No. of Lanes	2	1	1	2	1	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	800	265	226	829	265	226	575	592	265	823	846	378
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.17	0.17	0.17	0.24	0.24	0.24
Sat Flow, veh/h	2408	1863	1583	2632	1863	1583	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	33	22	22	11	22	120	11	185	11	196	348	43
Grp Sat Flow(s),veh/h/ln	1204	1863	1583	1316	1863	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	0.4	0.3	0.4	0.1	0.3	2.1	0.1	1.4	0.2	1.4	2.5	0.6
Cycle Q Clear(g_c), s	0.7	0.3	0.4	0.4	0.3	2.1	0.1	1.4	0.2	1.4	2.5	0.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	800	265	226	829	265	226	575	592	265	823	846	378
V/C Ratio(X)	0.04	0.08	0.10	0.01	0.08	0.53	0.02	0.31	0.04	0.24	0.41	0.11
Avail Cap(c_a), veh/h	1946	1152	979	2082	1152	979	2244	2307	1032	2129	2189	979
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.4	11.1	11.2	11.3	11.1	11.9	10.4	10.9	10.4	9.2	9.6	8.9
Incr Delay (d2), s/veh	0.0	0.1	0.2	0.0	0.1	1.9	0.0	0.3	0.1	0.1	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.2	0.0	0.2	1.0	0.0	0.7	0.1	0.7	1.2	0.3
LnGrp Delay(d),s/veh	11.4	11.3	11.3	11.3	11.3	13.8	10.4	11.2	10.5	9.3	9.9	9.0
LnGrp LOS	B	B	B	B	B	B	B	B	B	A	A	A
Approach Vol, veh/h		77			153			207			587	
Approach Delay, s/veh		11.4			13.3			11.2			9.7	
Approach LOS		B			B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		9.5		8.8		11.6		8.8
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		19.5		18.5		18.5		18.5
Max Q Clear Time (g_c+I1), s		3.4		2.7		4.5		4.1
Green Ext Time (p_c), s		1.0		0.7		2.7		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	10.6
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	230	30	10	400	1040	240
Future Volume (veh/h)	230	30	10	400	1040	240
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	250	33	11	435	1130	261
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	310	277	15	2065	1325	304
Arrive On Green	0.17	0.17	0.01	0.58	0.46	0.46
Sat Flow, veh/h	1774	1583	1774	3632	2954	656
Grp Volume(v), veh/h	250	33	11	435	696	695
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1747
Q Serve(g_s), s	6.7	0.9	0.3	2.9	17.1	17.5
Cycle Q Clear(g_c), s	6.7	0.9	0.3	2.9	17.1	17.5
Prop In Lane	1.00	1.00	1.00			0.38
Lane Grp Cap(c), veh/h	310	277	15	2065	820	809
V/C Ratio(X)	0.81	0.12	0.73	0.21	0.85	0.86
Avail Cap(c_a), veh/h	851	759	757	4676	1367	1349
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.5	17.1	24.3	4.9	11.7	11.8
Incr Delay (d2), s/veh	1.9	0.1	21.7	0.0	1.2	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.4	0.2	1.4	8.6	8.6
LnGrp Delay(d),s/veh	21.4	17.2	46.1	4.9	12.9	13.2
LnGrp LOS	C	B	D	A	B	B
Approach Vol, veh/h	283			446	1391	
Approach Delay, s/veh	20.9			5.9	13.0	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	5.9	29.3				35.2		14.0
Change Period (Y+Rc), s	5.5	* 6.5				* 6.5		5.4
Max Green Setting (Gmax), s	21.0	* 38				* 65		23.6
Max Q Clear Time (g_c+I1), s	2.3	19.5				4.9		8.7
Green Ext Time (p_c), s	0.0	3.3				3.5		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	12.6
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	70	40	20	20	80	40	1090	20	250	1120	90
Future Volume (veh/h)	40	70	40	20	20	80	40	1090	20	250	1120	90
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	43	76	43	22	22	87	43	1185	22	272	1217	98
Adj No. of Lanes	2	1	1	1	1	1	2	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	200	170	44	171	145	140	1511	676	323	2012	900
Arrive On Green	0.04	0.11	0.11	0.02	0.09	0.09	0.04	0.43	0.43	0.18	0.57	0.57
Sat Flow, veh/h	3442	1863	1583	1774	1863	1583	3442	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	43	76	43	22	22	87	43	1185	22	272	1217	98
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1863	1583	1721	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.8	2.6	1.7	0.9	0.8	3.7	0.8	20.1	0.6	10.3	15.7	2.0
Cycle Q Clear(g_c), s	0.8	2.6	1.7	0.9	0.8	3.7	0.8	20.1	0.6	10.3	15.7	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	140	200	170	44	171	145	140	1511	676	323	2012	900
V/C Ratio(X)	0.31	0.38	0.25	0.50	0.13	0.60	0.31	0.78	0.03	0.84	0.60	0.11
Avail Cap(c_a), veh/h	247	482	410	127	482	410	247	1577	706	459	2238	1001
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.4	28.9	28.5	33.5	29.1	30.4	32.4	17.2	11.6	27.5	9.9	6.9
Incr Delay (d2), s/veh	1.2	1.2	0.8	8.4	0.3	3.9	1.2	2.6	0.0	9.4	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.4	0.8	0.5	0.4	1.8	0.4	10.3	0.2	5.9	7.7	0.9
LnGrp Delay(d),s/veh	33.7	30.1	29.3	41.9	29.4	34.3	33.7	19.7	11.6	36.9	10.3	7.0
LnGrp LOS	C	C	C	D	C	C	C	B	B	D	B	A
Approach Vol, veh/h		162			131			1250			1587	
Approach Delay, s/veh		30.8			34.8			20.1			14.6	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	44.1	6.2	12.0	17.2	34.2	7.3	10.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	44.0	5.0	18.0	18.0	31.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.8	17.7	2.9	4.6	12.3	22.1	2.8	5.7
Green Ext Time (p_c), s	0.0	18.5	0.0	0.7	0.4	7.6	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	18.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	690	10	30	670	10	10	20	40	10	50	1010
Future Volume (veh/h)	370	690	10	30	670	10	10	20	40	10	50	1010
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	402	750	0	33	728	11	11	22	43	11	54	1098
Adj No. of Lanes	1	2	1	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	431	1620	725	41	848	13	16	32	62	70	346	742
Arrive On Green	0.24	0.46	0.00	0.02	0.24	0.24	0.07	0.07	0.07	0.23	0.23	0.23
Sat Flow, veh/h	1774	3539	1583	1774	3569	54	241	483	943	313	1535	1583
Grp Volume(v), veh/h	402	750	0	33	361	378	76	0	0	65	0	1098
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1853	1667	0	0	1847	0	1583
Q Serve(g_s), s	22.0	14.5	0.0	1.8	19.4	19.4	4.4	0.0	0.0	2.8	0.0	22.4
Cycle Q Clear(g_c), s	22.0	14.5	0.0	1.8	19.4	19.4	4.4	0.0	0.0	2.8	0.0	22.4
Prop In Lane	1.00		1.00	1.00		0.03	0.14		0.57	0.17		1.00
Lane Grp Cap(c), veh/h	431	1620	725	41	421	440	109	0	0	416	0	742
V/C Ratio(X)	0.93	0.46	0.00	0.80	0.86	0.86	0.70	0.00	0.00	0.16	0.00	1.48
Avail Cap(c_a), veh/h	919	2695	1206	125	552	578	376	0	0	416	0	742
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.8	18.5	0.0	48.3	36.3	36.3	45.5	0.0	0.0	30.9	0.0	26.4
Incr Delay (d2), s/veh	4.0	0.1	0.0	12.7	8.3	8.0	3.0	0.0	0.0	0.1	0.0	223.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.3	7.1	0.0	1.0	10.4	10.9	2.1	0.0	0.0	1.4	0.0	66.2
LnGrp Delay(d),s/veh	40.9	18.6	0.0	61.0	44.6	44.3	48.4	0.0	0.0	31.0	0.0	249.8
LnGrp LOS	D	B		E	D	D	D			C		F
Approach Vol, veh/h		1152			772			76			1163	
Approach Delay, s/veh		26.4			45.2			48.4			237.6	
Approach LOS		C			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	29.7	29.6		12.1	7.8	51.5		28.0
Change Period (Y+Rc), s	5.5	6.0		* 5.6	5.5	* 6		5.6
Max Green Setting (Gmax), s	51.5	31.0		* 22	7.0	* 76		22.4
Max Q Clear Time (g_c+I1), s	24.0	21.4		6.4	3.8	16.5		24.4
Green Ext Time (p_c), s	0.1	2.2		0.1	0.0	2.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	109.2
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	940	160	50	730	380	20	20	30	960	140	490
Future Volume (veh/h)	110	940	160	50	730	380	20	20	30	960	140	490
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	120	1022	174	54	793	413	22	22	33	1043	152	533
Adj No. of Lanes	1	2	0	2	3	1	1	1	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	149	1145	195	95	1617	497	26	40	60	1110	1297	580
Arrive On Green	0.08	0.38	0.38	0.03	0.32	0.32	0.01	0.06	0.06	0.32	0.37	0.37
Sat Flow, veh/h	1774	3027	515	3442	5085	1562	1774	674	1011	3442	3539	1583
Grp Volume(v), veh/h	120	597	599	54	793	413	22	0	55	1043	152	533
Grp Sat Flow(s),veh/h/ln	1774	1770	1772	1721	1695	1562	1774	0	1684	1721	1770	1583
Q Serve(g_s), s	6.4	30.6	30.8	1.5	12.2	23.7	1.2	0.0	3.1	28.5	2.8	31.1
Cycle Q Clear(g_c), s	6.4	30.6	30.8	1.5	12.2	23.7	1.2	0.0	3.1	28.5	2.8	31.1
Prop In Lane	1.00		0.29	1.00		1.00	1.00		0.60	1.00		1.00
Lane Grp Cap(c), veh/h	149	669	670	95	1617	497	26	0	99	1110	1297	580
V/C Ratio(X)	0.81	0.89	0.89	0.57	0.49	0.83	0.84	0.00	0.55	0.94	0.12	0.92
Avail Cap(c_a), veh/h	244	864	865	181	2037	626	112	0	609	1503	2591	1159
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.6	28.2	28.3	46.5	26.7	30.6	47.6	0.0	44.3	31.9	20.3	29.3
Incr Delay (d2), s/veh	3.9	8.2	8.4	2.0	0.1	6.2	22.1	0.0	1.8	8.4	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	16.4	16.5	0.7	5.7	11.1	0.7	0.0	1.5	14.8	1.4	13.9
LnGrp Delay(d),s/veh	47.5	36.4	36.6	48.5	26.8	36.8	69.7	0.0	46.1	40.4	20.3	31.9
LnGrp LOS	D	D	D	D	C	D	E		D	D	C	C
Approach Vol, veh/h		1316			1260			77			1728	
Approach Delay, s/veh		37.5			31.0			52.9			36.0	
Approach LOS		D			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.6	35.7	6.9	40.6	7.8	41.5	36.7	10.8
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	13.3	* 39	6.1	* 71	* 5.1	* 47	42.3	* 35
Max Q Clear Time (g_c+I1), s	8.4	25.7	3.2	33.1	3.5	32.8	30.5	5.1
Green Ext Time (p_c), s	0.0	3.8	0.0	0.6	0.0	3.9	0.7	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	35.3
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	160	1000	650	170	410	120	10	380	930	160	370	2140
Future Volume (veh/h)	160	1000	650	170	410	120	10	380	930	160	370	2140
Number	7	4	14	3	8	18		5	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00		1.00		0.99	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	174	1087	707	185	446	130		413	1011	174	402	2326
Adj No. of Lanes	2	3	1	2	3	1		2	3	1	2	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2
Cap, veh/h	220	1447	451	154	1351	421		344	1866	574	448	2019
Arrive On Green	0.06	0.28	0.28	0.04	0.27	0.27		0.10	0.37	0.37	0.13	0.40
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583		3442	5085	1563	3442	5085
Grp Volume(v), veh/h	174	1087	707	185	446	130		413	1011	174	402	2326
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583		1721	1695	1563	1721	1695
Q Serve(g_s), s	7.2	28.2	41.3	6.5	10.2	9.5		14.5	22.8	11.5	16.7	57.6
Cycle Q Clear(g_c), s	7.2	28.2	41.3	6.5	10.2	9.5		14.5	22.8	11.5	16.7	57.6
Prop In Lane	1.00		1.00	1.00		1.00		1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	220	1447	451	154	1351	421		344	1866	574	448	2019
V/C Ratio(X)	0.79	0.75	1.57	1.20	0.33	0.31		1.20	0.54	0.30	0.90	1.15
Avail Cap(c_a), veh/h	296	1447	451	154	1351	421		344	1866	574	600	2019
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.0	47.2	51.9	69.3	42.9	42.6		65.3	36.3	32.7	62.2	43.8
Incr Delay (d2), s/veh	7.0	2.0	266.5	136.2	0.1	0.2		115.0	0.2	0.1	11.2	74.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	13.5	51.4	6.0	4.8	4.2		12.4	10.7	5.0	8.6	40.9
LnGrp Delay(d),s/veh	74.0	49.2	318.4	205.5	42.9	42.8		180.3	36.5	32.8	73.4	118.4
LnGrp LOS	E	D	F	F	D	D		F	D	C	E	F
Approach Vol, veh/h		1968			761				1598			2956
Approach Delay, s/veh		148.1			82.4				73.2			105.6
Approach LOS		F			F				E			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.4	60.6	12.0	48.1	20.0	65.0	14.8	45.3
Change Period (Y+Rc), s	5.5	* 7.4	5.5	* 6.8	5.5	* 7.4	5.5	6.8
Max Green Setting (Gmax), s	25.3	* 47	6.5	* 41	14.5	* 58	12.5	35.2
Max Q Clear Time (g_c+I1), s	18.7	24.8	8.5	43.3	16.5	59.6	9.2	12.2
Green Ext Time (p_c), s	0.2	10.7	0.0	0.0	0.0	0.0	0.0	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	107.6
HCM 2010 LOS	F

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	210
Future Volume (veh/h)	210
Number	16
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	228
Adj No. of Lanes	1
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	629
Arrive On Green	0.40
Sat Flow, veh/h	1583
Grp Volume(v), veh/h	228
Grp Sat Flow(s),veh/h/ln	1583
Q Serve(g_s), s	14.7
Cycle Q Clear(g_c), s	14.7
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	629
V/C Ratio(X)	0.36
Avail Cap(c_a), veh/h	629
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	30.8
Incr Delay (d2), s/veh	0.1
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	6.5
LnGrp Delay(d),s/veh	31.0
LnGrp LOS	C
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	260	380	200	860	1130	240
Future Volume (veh/h)	260	380	200	860	1130	240
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	283	413	217	935	1228	261
Adj No. of Lanes	1	1	2	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	492	448	316	1962	1383	619
Arrive On Green	0.28	0.28	0.09	0.55	0.39	0.39
Sat Flow, veh/h	1774	1615	3442	3632	3632	1583
Grp Volume(v), veh/h	283	413	217	935	1228	261
Grp Sat Flow(s),veh/h/ln	1774	1615	1721	1770	1770	1583
Q Serve(g_s), s	8.8	15.9	3.9	10.3	20.8	7.7
Cycle Q Clear(g_c), s	8.8	15.9	3.9	10.3	20.8	7.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	492	448	316	1962	1383	619
V/C Ratio(X)	0.58	0.92	0.69	0.48	0.89	0.42
Avail Cap(c_a), veh/h	492	448	1073	2851	1478	661
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.9	22.5	28.2	8.7	18.2	14.3
Incr Delay (d2), s/veh	1.1	24.1	1.0	0.1	6.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	10.0	1.9	5.0	11.3	3.4
LnGrp Delay(d),s/veh	21.0	46.6	29.2	8.7	24.6	14.4
LnGrp LOS	C	D	C	A	C	B
Approach Vol, veh/h	696			1152	1489	
Approach Delay, s/veh	36.2			12.6	22.8	
Approach LOS	D			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	10.5	31.2				41.7		22.5
Change Period (Y+Rc), s	* 4.6	* 6.1				* 6.1		4.7
Max Green Setting (Gmax), s	* 20	* 27				* 52		17.8
Max Q Clear Time (g_c+I1), s	5.9	22.8				12.3		17.9
Green Ext Time (p_c), s	0.1	2.3				5.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	22.1
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	870	350	400	690	70	360	330	710	70	120	20
Future Volume (veh/h)	80	870	350	400	690	70	360	330	710	70	120	20
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.98	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	87	946	0	435	750	76	380	562	571	76	130	22
Adj No. of Lanes	1	2	1	2	2	0	1	1	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	111	1075	481	180	943	96	474	497	416	146	264	46
Arrive On Green	0.06	0.30	0.00	0.05	0.29	0.29	0.27	0.27	0.27	0.13	0.13	0.13
Sat Flow, veh/h	1774	3539	1583	3442	3230	327	1774	1863	1558	1146	2075	361
Grp Volume(v), veh/h	87	946	0	435	411	415	380	562	571	120	0	108
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1788	1774	1863	1558	1805	0	1776
Q Serve(g_s), s	4.0	20.9	0.0	4.3	17.6	17.7	16.5	22.0	22.0	5.1	0.0	4.7
Cycle Q Clear(g_c), s	4.0	20.9	0.0	4.3	17.6	17.7	16.5	22.0	22.0	5.1	0.0	4.7
Prop In Lane	1.00		1.00	1.00		0.18	1.00		1.00	0.63		0.20
Lane Grp Cap(c), veh/h	111	1075	481	180	517	522	474	497	416	230	0	226
V/C Ratio(X)	0.78	0.88	0.00	2.42	0.79	0.80	0.80	1.13	1.37	0.52	0.00	0.48
Avail Cap(c_a), veh/h	144	1164	521	180	530	536	474	497	416	570	0	560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.1	27.3	0.0	39.1	26.9	26.9	28.2	30.2	30.2	33.6	0.0	33.4
Incr Delay (d2), s/veh	13.7	7.1	0.0	656.8	7.3	7.3	8.9	81.3	182.3	0.7	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	11.2	0.0	18.4	9.6	9.7	9.2	22.4	30.5	2.6	0.0	2.3
LnGrp Delay(d),s/veh	51.8	34.4	0.0	695.9	34.2	34.2	37.1	111.5	212.6	34.3	0.0	34.0
LnGrp LOS	D	C		F	C	C	D	F	F	C		C
Approach Vol, veh/h		1033			1261			1513			228	
Approach Delay, s/veh		35.8			262.4			131.0			34.2	
Approach LOS		D			F			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.5	28.8		27.2	9.5	29.7		16.0
Change Period (Y+Rc), s	* 5.3	* 4.7		* 5.2	* 5.2	* 4.7		5.5
Max Green Setting (Gmax), s	* 6.7	* 25		* 22	* 4.3	* 27		26.0
Max Q Clear Time (g_c+I1), s	6.0	19.7		24.0	6.3	22.9		7.1
Green Ext Time (p_c), s	0.0	2.0		0.0	0.0	1.8		0.2

Intersection Summary		
HCM 2010 Ctrl Delay		142.2
HCM 2010 LOS		F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	460	0	450	0	1240	1280	0	970	310
Future Volume (veh/h)	0	0	0	460	0	450	0	1240	1280	0	970	310
Number				3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h				494	8	489	0	1348	0	0	1054	0
Adj No. of Lanes				1	1	0	0	3	1	0	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				642	9	559	0	2020	629	0	2020	629
Arrive On Green				0.36	0.36	0.36	0.00	0.40	0.00	0.00	0.40	0.00
Sat Flow, veh/h				1774	25	1545	0	5253	1583	0	5253	1583
Grp Volume(v), veh/h				494	0	497	0	1348	0	0	1054	0
Grp Sat Flow(s),veh/h/ln				1774	0	1570	0	1695	1583	0	1695	1583
Q Serve(g_s), s				10.1	0.0	12.1	0.0	8.9	0.0	0.0	6.5	0.0
Cycle Q Clear(g_c), s				10.1	0.0	12.1	0.0	8.9	0.0	0.0	6.5	0.0
Prop In Lane				1.00		0.98	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				642	0	569	0	2020	629	0	2020	629
V/C Ratio(X)				0.77	0.00	0.87	0.00	0.67	0.00	0.00	0.52	0.00
Avail Cap(c_a), veh/h				759	0	672	0	2783	866	0	2869	893
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				11.6	0.0	12.2	0.0	10.2	0.0	0.0	9.4	0.0
Incr Delay (d2), s/veh				3.2	0.0	9.8	0.0	0.1	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.5	0.0	6.8	0.0	4.1	0.0	0.0	3.0	0.0
LnGrp Delay(d),s/veh				14.8	0.0	22.0	0.0	10.3	0.0	0.0	9.5	0.0
LnGrp LOS				B		C		B			A	
Approach Vol, veh/h					991			1348			1054	
Approach Delay, s/veh					18.4			10.3			9.5	
Approach LOS					B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		21.3				21.3		19.8
Change Period (Y+Rc), s		* 5				5.0		4.9
Max Green Setting (Gmax), s		* 23				22.5		17.6
Max Q Clear Time (g_c+I1), s		8.5				10.9		14.1
Green Ext Time (p_c), s		6.0				5.4		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	12.4
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	0	0	0	0	0	0	820	390	0	80	120
Future Volume (veh/h)	270	0	0	0	0	0	0	820	390	0	80	120
Number	7	4	14				1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	293	0	0				0	891	0	0	87	0
Adj No. of Lanes	2	0	1				0	3	0	0	3	1
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	528	0	236				0	1750	0	0	1750	545
Arrive On Green	0.15	0.00	0.00				0.00	0.34	0.00	0.00	0.34	0.00
Sat Flow, veh/h	3548	0	1583				0	5421	0	0	5253	1583
Grp Volume(v), veh/h	293	0	0				0	891	0	0	87	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	0	0	1695	1583
Q Serve(g_s), s	1.6	0.0	0.0				0.0	2.9	0.0	0.0	0.2	0.0
Cycle Q Clear(g_c), s	1.6	0.0	0.0				0.0	2.9	0.0	0.0	0.2	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	528	0	236				0	1750	0	0	1750	545
V/C Ratio(X)	0.55	0.00	0.00				0.00	0.51	0.00	0.00	0.05	0.00
Avail Cap(c_a), veh/h	3217	0	1436				0	5206	0	0	5330	1659
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	8.1	0.0	0.0				0.0	5.3	0.0	0.0	4.5	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0				0.0	0.1	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0				0.0	1.3	0.0	0.0	0.1	0.0
LnGrp Delay(d),s/veh	8.4	0.0	0.0				0.0	5.4	0.0	0.0	4.5	0.0
LnGrp LOS	A							A			A	
Approach Vol, veh/h		293						891			87	
Approach Delay, s/veh		8.4						5.4			4.5	
Approach LOS		A						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		12.1		8.5		12.1		
Change Period (Y+Rc), s		* 5		* 5.4		5.0		
Max Green Setting (Gmax), s		* 22		* 19		21.0		
Max Q Clear Time (g_c+I1), s		2.2		3.6		4.9		
Green Ext Time (p_c), s		2.3		0.2		2.2		

Intersection Summary	
HCM 2010 Ctrl Delay	6.1
HCM 2010 LOS	A

Notes

Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (veh/h)	690	230	10	10	1120	620	20
Future Volume (veh/h)	690	230	10	10	1120	620	20
Number	6	16		5	2	3	18
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900		1863	1863	1863	1863
Adj Flow Rate, veh/h	750	0		11	1217	674	22
Adj No. of Lanes	3	0		1	3	2	1
Peak Hour Factor	0.92	0.92		0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2		2	2	2	2
Cap, veh/h	2381	0		15	2970	816	375
Arrive On Green	0.47	0.00		0.01	0.58	0.24	0.24
Sat Flow, veh/h	5421	0		1774	5253	3442	1583
Grp Volume(v), veh/h	750	0		11	1217	674	22
Grp Sat Flow(s),veh/h/ln	1695	0		1774	1695	1721	1583
Q Serve(g_s), s	4.4	0.0		0.3	6.2	8.8	0.5
Cycle Q Clear(g_c), s	4.4	0.0		0.3	6.2	8.8	0.5
Prop In Lane		0.00		1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2381	0		15	2970	816	375
V/C Ratio(X)	0.31	0.00		0.73	0.41	0.83	0.06
Avail Cap(c_a), veh/h	2381	0		198	3423	2136	983
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.9	0.0		23.5	5.4	17.2	14.0
Incr Delay (d2), s/veh	0.2	0.0		21.5	0.2	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0		0.2	2.9	4.2	0.2
LnGrp Delay(d),s/veh	8.0	0.0		45.0	5.6	18.0	14.1
LnGrp LOS	A			D	A	B	B
Approach Vol, veh/h	750				1228	696	
Approach Delay, s/veh	8.0				5.9	17.9	
Approach LOS	A				A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		32.8			5.5	27.3		14.8
Change Period (Y+Rc), s		5.0			* 5.1	5.0		3.5
Max Green Setting (Gmax), s		32.0			* 5.3	21.6		29.5
Max Q Clear Time (g_c+I1), s		8.2			2.3	6.4		10.8
Green Ext Time (p_c), s		19.5			0.0	13.4		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	9.6
HCM 2010 LOS	A

Notes

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (veh/h)	10	440	900	520	30	320	920	220	10	230	560	170
Future Volume (veh/h)	10	440	900	520	30	320	920	220	10	230	560	170
Number		3	8	18		7	4	14		1	6	16
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.99		1.00		0.98		1.00		1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1900		1863	1863	1863		1863	1863	1863
Adj Flow Rate, veh/h		478	978	565		348	1000	239		250	609	185
Adj No. of Lanes		2	3	0		2	3	1		2	3	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2
Cap, veh/h		524	1027	472		393	1345	412		298	1936	601
Arrive On Green		0.15	0.30	0.30		0.11	0.26	0.26		0.09	0.38	0.38
Sat Flow, veh/h		3442	3390	1560		3442	5085	1558		3442	5085	1580
Grp Volume(v), veh/h		478	978	565		348	1000	239		250	609	185
Grp Sat Flow(s),veh/h/ln		1721	1695	1560		1721	1695	1558		1721	1695	1580
Q Serve(g_s), s		19.1	39.4	42.2		13.9	25.1	18.6		10.0	11.7	11.4
Cycle Q Clear(g_c), s		19.1	39.4	42.2		13.9	25.1	18.6		10.0	11.7	11.4
Prop In Lane		1.00		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h		524	1027	472		393	1345	412		298	1936	601
V/C Ratio(X)		0.91	0.95	1.20		0.89	0.74	0.58		0.84	0.31	0.31
Avail Cap(c_a), veh/h		615	1027	472		398	1345	412		432	2022	628
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		58.1	47.6	48.6		60.8	46.9	44.5		62.7	30.4	30.3
Incr Delay (d2), s/veh		15.2	17.6	107.3		19.9	2.0	1.4		6.5	0.0	0.1
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		10.2	21.0	32.2		7.7	12.0	8.2		5.0	5.5	5.0
LnGrp Delay(d),s/veh		73.3	65.2	155.9		80.7	48.9	45.9		69.2	30.4	30.4
LnGrp LOS		E	E	F		F	D	D		E	C	C
Approach Vol, veh/h			2021				1587				1044	
Approach Delay, s/veh			92.5				55.4				39.7	
Approach LOS			F				E				D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.6	52.4	26.7	42.7	11.3	58.7	21.4	48.0
Change Period (Y+Rc), s	5.5	* 5.6	5.5	5.8	5.5	* 5.6	5.5	5.8
Max Green Setting (Gmax), s	17.5	* 47	24.9	33.4	8.9	* 55	16.1	42.2
Max Q Clear Time (g_c+I1), s	12.0	46.8	21.1	27.1	5.9	13.7	15.9	44.2
Green Ext Time (p_c), s	0.1	0.0	0.2	3.9	0.0	6.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	68.2
HCM 2010 LOS	E

Notes

Movement	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (veh/h)	90	1180	330
Future Volume (veh/h)	90	1180	330
Number	5	2	12
Initial Q (Qb), veh	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900
Adj Flow Rate, veh/h	98	1283	359
Adj No. of Lanes	2	3	0
Peak Hour Factor	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2
Cap, veh/h	143	1323	370
Arrive On Green	0.04	0.34	0.34
Sat Flow, veh/h	3442	3940	1101
Grp Volume(v), veh/h	98	1104	538
Grp Sat Flow(s),veh/h/ln	1721	1695	1651
Q Serve(g_s), s	3.9	44.7	44.8
Cycle Q Clear(g_c), s	3.9	44.7	44.8
Prop In Lane	1.00		0.67
Lane Grp Cap(c), veh/h	143	1139	554
V/C Ratio(X)	0.68	0.97	0.97
Avail Cap(c_a), veh/h	220	1139	554
HCM Platoon Ratio	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.9	45.6	45.6
Incr Delay (d2), s/veh	2.2	19.5	30.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	23.9	25.1
LnGrp Delay(d),s/veh	68.0	65.1	76.3
LnGrp LOS	E	E	E
Approach Vol, veh/h		1740	
Approach Delay, s/veh		68.7	
Approach LOS		E	
Timer			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	540	260	20	220	170	420	40	1490	130	690	1450	170
Future Volume (veh/h)	540	260	20	220	170	420	40	1490	130	690	1450	170
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	587	283	22	239	185	457	43	1620	141	750	1576	185
Adj No. of Lanes	2	3	0	2	1	2	2	3	0	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	534	1135	87	289	302	1103	75	1560	136	658	2528	773
Arrive On Green	0.16	0.24	0.24	0.08	0.16	0.16	0.02	0.33	0.33	0.19	0.50	0.50
Sat Flow, veh/h	3442	4810	367	3548	1863	3067	3442	4761	414	3442	5085	1555
Grp Volume(v), veh/h	587	198	107	239	185	457	43	1153	608	750	1576	185
Grp Sat Flow(s),veh/h/ln	1721	1695	1787	1774	1863	1534	1721	1695	1785	1721	1695	1555
Q Serve(g_s), s	21.5	6.6	6.7	9.2	12.8	15.7	1.7	45.4	45.4	26.5	31.3	9.4
Cycle Q Clear(g_c), s	21.5	6.6	6.7	9.2	12.8	15.7	1.7	45.4	45.4	26.5	31.3	9.4
Prop In Lane	1.00		0.21	1.00		1.00	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	534	800	422	289	302	1103	75	1111	585	658	2528	773
V/C Ratio(X)	1.10	0.25	0.25	0.83	0.61	0.41	0.58	1.04	1.04	1.14	0.62	0.24
Avail Cap(c_a), veh/h	534	834	440	433	403	1269	129	1111	585	658	2528	773
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.5	43.0	43.0	62.7	54.0	34.0	67.2	46.6	46.6	56.0	25.4	19.9
Incr Delay (d2), s/veh	68.9	0.1	0.1	5.0	0.7	0.1	2.6	37.4	48.0	80.3	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.3	3.1	3.3	4.7	6.6	6.7	0.8	26.9	30.0	19.9	14.7	4.1
LnGrp Delay(d),s/veh	127.5	43.0	43.1	67.7	54.7	34.1	69.7	84.0	94.6	136.4	25.8	19.9
LnGrp LOS	F	D	D	E	D	C	E	F	F	F	C	B
Approach Vol, veh/h		892			881			1804			2511	
Approach Delay, s/veh		98.6			47.6			87.2			58.4	
Approach LOS		F			D			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	74.6	27.0	28.5	32.0	51.1	16.8	38.7
Change Period (Y+Rc), s	5.5	* 5.7	5.5	* 6	5.5	* 5.7	5.5	* 6
Max Green Setting (Gmax), s	5.2	* 66	21.5	* 30	26.5	* 45	16.9	* 34
Max Q Clear Time (g_c+I1), s	3.7	33.3	23.5	17.7	28.5	47.4	11.2	8.7
Green Ext Time (p_c), s	0.0	12.8	0.0	1.2	0.0	0.0	0.1	1.3

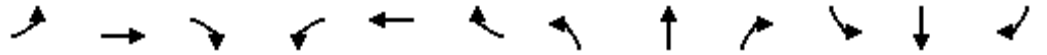
Intersection Summary	
HCM 2010 Ctrl Delay	71.2
HCM 2010 LOS	E

Notes

Movement	EBL2	EBL	EBT	EBR	WBR	WBR2	NBT	NBR	NBR2	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	690	10	120	1090	910	140	1900	490	10	1270	170
Future Volume (vph)	690	10	120	1090	910	140	1900	490	10	1270	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8	6.8	6.8	4.5		4.6			4.6	4.0
Lane Util. Factor		0.91	0.86	0.91	0.88		0.86			0.91	1.00
Frpb, ped/bikes		1.00	0.99	0.98	1.00		1.00			1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt		1.00	0.88	0.85	0.85		0.97			1.00	0.85
Flt Protected		0.95	1.00	1.00	1.00		1.00			1.00	1.00
Satd. Flow (prot)		1610	2773	1415	2787		6177			5085	1545
Flt Permitted		0.95	1.00	1.00	1.00		1.00			1.00	1.00
Satd. Flow (perm)		1610	2773	1415	2787		6177			5085	1545
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	750	11	130	1185	989	152	2065	533	11	1380	185
RTOR Reduction (vph)	0	0	32	38	59	0	1	0	0	0	0
Lane Group Flow (vph)	0	751	701	554	1082	0	2608	0	0	1380	185
Confl. Peds. (#/hr)	6	6		6	3	3		3	3		6
Confl. Bikes (#/hr)								2	2		3
Turn Type	Split	Split	NA	Perm	Prot		NA			NA	Free
Protected Phases	4	4	4		5		6			2	
Permitted Phases				4							Free
Actuated Green, G (s)		37.2	37.2	37.2	26.5		40.4			71.4	120.0
Effective Green, g (s)		37.2	37.2	37.2	26.5		40.4			71.4	120.0
Actuated g/C Ratio		0.31	0.31	0.31	0.22		0.34			0.60	1.00
Clearance Time (s)		6.8	6.8	6.8	4.5		4.6			4.6	
Vehicle Extension (s)		1.0	1.0	1.0	3.0		1.0			1.0	
Lane Grp Cap (vph)		499	859	438	615		2079			3025	1545
v/s Ratio Prot		c0.47	0.25		c0.39		c0.42			0.27	
v/s Ratio Perm				0.39							0.12
v/c Ratio		1.51	1.26dr	1.26	1.76		1.25			0.46	0.12
Uniform Delay, d1		41.4	38.2	41.4	46.8		39.8			13.5	0.0
Progression Factor		1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		237.5	5.7	136.4	348.2		118.7			0.0	0.2
Delay (s)		278.9	43.9	177.8	395.0		158.5			13.5	0.2
Level of Service		F	D	F	F		F			B	A
Approach Delay (s)			167.1				158.5			12.0	
Approach LOS			F				F			B	

Intersection Summary			
HCM 2000 Control Delay	166.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.9
Intersection Capacity Utilization	114.6%	ICU Level of Service	H
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	660	0	340	0	1460	2050	0	1100	670
Future Volume (veh/h)	0	0	0	660	0	340	0	1460	2050	0	1100	670
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h				717	0	370	0	1587	0	0	1196	0
Adj No. of Lanes				2	0	1	0	3	2	0	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				1096	0	504	0	2255	1236	0	2255	702
Arrive On Green				0.32	0.00	0.32	0.00	0.44	0.00	0.00	0.44	0.00
Sat Flow, veh/h				3442	0	1583	0	5253	2787	0	5253	1583
Grp Volume(v), veh/h				717	0	370	0	1587	0	0	1196	0
Grp Sat Flow(s),veh/h/ln				1721	0	1583	0	1695	1393	0	1695	1583
Q Serve(g_s), s				6.9	0.0	7.9	0.0	9.7	0.0	0.0	6.5	0.0
Cycle Q Clear(g_c), s				6.9	0.0	7.9	0.0	9.7	0.0	0.0	6.5	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				1096	0	504	0	2255	1236	0	2255	702
V/C Ratio(X)				0.65	0.00	0.73	0.00	0.70	0.00	0.00	0.53	0.00
Avail Cap(c_a), veh/h				1396	0	642	0	2714	1487	0	2714	845
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				11.2	0.0	11.6	0.0	8.6	0.0	0.0	7.7	0.0
Incr Delay (d2), s/veh				0.7	0.0	3.2	0.0	0.4	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.3	0.0	3.8	0.0	4.5	0.0	0.0	3.0	0.0
LnGrp Delay(d),s/veh				11.9	0.0	14.8	0.0	9.1	0.0	0.0	7.8	0.0
LnGrp LOS				B		B		A			A	
Approach Vol, veh/h					1087			1587			1196	
Approach Delay, s/veh					12.9			9.1			7.8	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		21.5				21.5		16.7
Change Period (Y+Rc), s		4.6				4.6		4.5
Max Green Setting (Gmax), s		20.4				20.4		15.5
Max Q Clear Time (g_c+I1), s		11.7				8.5		9.9
Green Ext Time (p_c), s		5.3				6.4		2.2

Intersection Summary	
HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (veh/h)	40	530	1340	410	10	350	690	40	70	450	1070	340
Future Volume (veh/h)	40	530	1340	410	10	350	690	40	70	450	1070	340
Number		3	8	18		7	4	14		1	6	16
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.98		1.00		1.00		1.00		0.99
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1676	1676	1676		1676	1676	1676		1676	1676	1676
Adj Flow Rate, veh/h		576	1457	446		380	750	43		489	1163	370
Adj No. of Lanes		2	2	1		2	3	1		2	3	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2
Cap, veh/h		613	1098	484		267	1067	331		374	1472	452
Arrive On Green		0.20	0.34	0.34		0.09	0.23	0.23		0.12	0.32	0.32
Sat Flow, veh/h		3097	3185	1403		3097	4577	1420		3097	4577	1404
Grp Volume(v), veh/h		576	1457	446		380	750	43		489	1163	370
Grp Sat Flow(s),veh/h/ln		1549	1593	1403		1549	1526	1420		1549	1526	1404
Q Serve(g_s), s		26.6	50.0	44.3		12.5	21.8	3.5		17.5	33.5	35.2
Cycle Q Clear(g_c), s		26.6	50.0	44.3		12.5	21.8	3.5		17.5	33.5	35.2
Prop In Lane		1.00		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h		613	1098	484		267	1067	331		374	1472	452
V/C Ratio(X)		0.94	1.33	0.92		1.42	0.70	0.13		1.31	0.79	0.82
Avail Cap(c_a), veh/h		641	1098	484		267	1067	331		374	1472	452
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		57.3	47.5	45.6		66.3	51.0	44.0		63.8	44.7	45.3
Incr Delay (d2), s/veh		21.1	153.3	23.9		210.9	3.3	0.6		156.7	3.4	12.5
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		13.2	45.4	20.3		13.2	9.5	1.4		15.6	14.6	15.2
LnGrp Delay(d),s/veh		78.4	200.8	69.5		277.1	54.3	44.6		220.5	48.1	57.8
LnGrp LOS		E	F	E		F	D	D		F	D	E
Approach Vol, veh/h			2479				1173				2022	
Approach Delay, s/veh			148.7				126.1				91.6	
Approach LOS			F				F				F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	48.0	34.2	39.8	18.6	52.4	18.0	56.0
Change Period (Y+Rc), s	5.5	* 5.8	5.5	6.0	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	17.5	* 42	30.0	32.5	14.2	* 46	12.5	50.0
Max Q Clear Time (g_c+I1), s	19.5	44.2	28.6	23.8	13.0	37.2	14.5	52.0
Green Ext Time (p_c), s	0.0	0.0	0.1	8.5	0.0	8.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	120.1
HCM 2010 LOS	F

Notes

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Volume (veh/h)	40	220	1390	170
Future Volume (veh/h)	40	220	1390	170
Number		5	2	12
Initial Q (Qb), veh		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.98
Parking Bus, Adj		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1676	1676	1676
Adj Flow Rate, veh/h		239	1511	185
Adj No. of Lanes		2	3	1
Peak Hour Factor		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2
Cap, veh/h		279	1332	408
Arrive On Green		0.09	0.29	0.29
Sat Flow, veh/h		3097	4577	1401
Grp Volume(v), veh/h		239	1511	185
Grp Sat Flow(s),veh/h/ln		1549	1526	1401
Q Serve(g_s), s		11.0	42.2	15.6
Cycle Q Clear(g_c), s		11.0	42.2	15.6
Prop In Lane		1.00		1.00
Lane Grp Cap(c), veh/h		279	1332	408
V/C Ratio(X)		0.86	1.13	0.45
Avail Cap(c_a), veh/h		303	1332	408
HCM Platoon Ratio		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00
Uniform Delay (d), s/veh		65.1	51.4	42.0
Incr Delay (d2), s/veh		18.3	70.3	1.6
Initial Q Delay(d3),s/veh		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		5.4	26.4	6.2
LnGrp Delay(d),s/veh		83.4	121.7	43.6
LnGrp LOS		F	F	D
Approach Vol, veh/h			1935	
Approach Delay, s/veh			109.5	
Approach LOS			F	
Timer				

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	510	340	30	10	180	300	210	90	1020	60	190	1340
Future Volume (veh/h)	510	340	30	10	180	300	210	90	1020	60	190	1340
Number	3	8	18		7	4	14	1	6	16	5	2
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99		1.00		0.97	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863		1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	554	370	33		196	391	185	98	1109	65	207	1457
Adj No. of Lanes	2	2	1		2	2	1	2	4	1	2	3
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2		2	2	2	2	2	2	2	2
Cap, veh/h	382	1028	454		267	949	391	156	2003	493	277	1768
Arrive On Green	0.11	0.29	0.29		0.08	0.25	0.25	0.05	0.31	0.31	0.08	0.35
Sat Flow, veh/h	3442	3539	1562		3548	3725	1536	3442	6408	1577	3442	5085
Grp Volume(v), veh/h	554	370	33		196	391	185	98	1109	65	207	1457
Grp Sat Flow(s),veh/h/ln	1721	1770	1562		1774	1863	1536	1721	1602	1577	1721	1695
Q Serve(g_s), s	10.5	7.8	1.4		5.1	8.3	9.7	2.6	13.6	2.8	5.6	24.8
Cycle Q Clear(g_c), s	10.5	7.8	1.4		5.1	8.3	9.7	2.6	13.6	2.8	5.6	24.8
Prop In Lane	1.00		1.00		1.00		1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	382	1028	454		267	949	391	156	2003	493	277	1768
V/C Ratio(X)	1.45	0.36	0.07		0.73	0.41	0.47	0.63	0.55	0.13	0.75	0.82
Avail Cap(c_a), veh/h	382	1202	530		394	1261	520	160	2003	493	491	1909
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.0	26.6	24.3		42.8	29.3	29.8	44.3	27.0	23.3	42.5	28.2
Incr Delay (d2), s/veh	216.5	0.3	0.1		1.5	0.5	1.5	6.1	0.3	0.1	1.5	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.4	3.8	0.6		2.6	4.3	4.2	1.4	6.0	1.2	2.7	12.2
LnGrp Delay(d),s/veh	258.5	26.9	24.4		44.3	29.8	31.4	50.5	27.3	23.4	44.1	31.6
LnGrp LOS	F	C	C		D	C	C	D	C	C	D	C
Approach Vol, veh/h		957				772			1272			1936
Approach Delay, s/veh		160.9				33.9			28.9			32.1
Approach LOS		F				C			C			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	38.7	16.0	30.1	13.1	35.4	12.6	33.5
Change Period (Y+Rc), s	5.5	* 5.8	5.5	6.0	5.5	* 5.8	5.5	* 6
Max Green Setting (Gmax), s	4.4	* 36	10.5	32.0	13.5	* 26	10.5	* 32
Max Q Clear Time (g_c+I1), s	4.6	26.8	12.5	11.7	7.6	15.6	7.1	9.8
Green Ext Time (p_c), s	0.0	6.1	0.0	8.8	0.1	10.0	0.1	9.3

Intersection Summary	
HCM 2010 Ctrl Delay	56.5
HCM 2010 LOS	E

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	250
Future Volume (veh/h)	250
Number	12
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.99
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	272
Adj No. of Lanes	1
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	543
Arrive On Green	0.35
Sat Flow, veh/h	1563
Grp Volume(v), veh/h	272
Grp Sat Flow(s),veh/h/ln	1563
Q Serve(g_s), s	13.0
Cycle Q Clear(g_c), s	13.0
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	543
V/C Ratio(X)	0.50
Avail Cap(c_a), veh/h	587
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	24.4
Incr Delay (d2), s/veh	1.5
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	5.8
LnGrp Delay(d),s/veh	25.8
LnGrp LOS	C
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1260	0	350	0	0	0	0	1610	110	0	1430	400
Future Volume (veh/h)	1260	0	350	0	0	0	0	1610	110	0	1430	400
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	1370	0	380				0	1750	0	0	1554	0
Adj No. of Lanes	3	0	2				0	4	1	0	3	1
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2				0	2	2	0	2	2
Cap, veh/h	1855	0	1034				0	3240	689	0	2430	689
Arrive On Green	0.37	0.00	0.37				0.00	0.43	0.00	0.00	0.43	0.00
Sat Flow, veh/h	5003	0	2787				0	7451	1583	0	5588	1583
Grp Volume(v), veh/h	1370	0	380				0	1750	0	0	1554	0
Grp Sat Flow(s),veh/h/ln	1668	0	1393				0	1863	1583	0	1863	1583
Q Serve(g_s), s	11.2	0.0	4.7				0.0	8.2	0.0	0.0	10.3	0.0
Cycle Q Clear(g_c), s	11.2	0.0	4.7				0.0	8.2	0.0	0.0	10.3	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	1855	0	1034				0	3240	689	0	2430	689
V/C Ratio(X)	0.74	0.00	0.37				0.00	0.54	0.00	0.00	0.64	0.00
Avail Cap(c_a), veh/h	2165	0	1206				0	4042	859	0	2985	846
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	12.9	0.0	10.9				0.0	9.9	0.0	0.0	10.5	0.0
Incr Delay (d2), s/veh	1.2	0.0	0.2				0.0	0.1	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	1.8				0.0	4.1	0.0	0.0	5.2	0.0
LnGrp Delay(d),s/veh	14.1	0.0	11.1				0.0	9.9	0.0	0.0	10.6	0.0
LnGrp LOS	B		B					A			B	
Approach Vol, veh/h		1750						1750			1554	
Approach Delay, s/veh		13.4						9.9			10.6	
Approach LOS		B						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		25.3		22.1		25.3		
Change Period (Y+Rc), s		* 4.7		4.5		4.7		
Max Green Setting (Gmax), s		* 26		20.5		25.3		
Max Q Clear Time (g_c+I1), s		10.2		13.2		12.3		
Green Ext Time (p_c), s		9.1		4.3		8.1		

Intersection Summary	
HCM 2010 Ctrl Delay	11.4
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	270	0	640	0	2450	390	0	1570	1350
Future Volume (veh/h)	0	0	0	270	0	640	0	2450	390	0	1570	1350
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h				293	0	696	0	2663	0	0	1707	0
Adj No. of Lanes				2	0	2	0	3	1	0	3	2
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				972	0	787	0	3296	934	0	3000	1644
Arrive On Green				0.28	0.00	0.28	0.00	0.59	0.00	0.00	0.59	0.00
Sat Flow, veh/h				3442	0	2787	0	5588	1583	0	5253	2787
Grp Volume(v), veh/h				293	0	696	0	2663	0	0	1707	0
Grp Sat Flow(s),veh/h/ln				1721	0	1393	0	1863	1583	0	1695	1393
Q Serve(g_s), s				5.0	0.0	17.8	0.0	27.8	0.0	0.0	15.4	0.0
Cycle Q Clear(g_c), s				5.0	0.0	17.8	0.0	27.8	0.0	0.0	15.4	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				972	0	787	0	3296	934	0	3000	1644
V/C Ratio(X)				0.30	0.00	0.88	0.00	0.81	0.00	0.00	0.57	0.00
Avail Cap(c_a), veh/h				1041	0	843	0	3629	1028	0	3282	1798
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				20.9	0.0	25.5	0.0	11.9	0.0	0.0	9.4	0.0
Incr Delay (d2), s/veh				0.2	0.0	10.6	0.0	1.2	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.4	0.0	7.9	0.0	14.4	0.0	0.0	7.1	0.0
LnGrp Delay(d),s/veh				21.1	0.0	36.1	0.0	13.1	0.0	0.0	9.5	0.0
LnGrp LOS				C		D		B			A	
Approach Vol, veh/h					989			2663			1707	
Approach Delay, s/veh					31.7			13.1			9.5	
Approach LOS					C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		48.9				48.9		25.5
Change Period (Y+Rc), s		* 5				5.0		4.5
Max Green Setting (Gmax), s		* 48				48.0		22.5
Max Q Clear Time (g_c+I1), s		29.8				17.4		19.8
Green Ext Time (p_c), s		14.1				20.2		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	15.4
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	130	40	310	60	20	60	30	360	2610	20	60	2480
Future Volume (veh/h)	130	40	310	60	20	60	30	360	2610	20	60	2480
Number	7	4	14	3	8	18		1	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00		1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1900		1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	141	158	260	65	22	65		391	2837	22	65	2696
Adj No. of Lanes	0	1	1	1	1	0		2	3	0	1	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2
Cap, veh/h	164	184	300	132	31	91		309	2604	20	83	2313
Arrive On Green	0.19	0.19	0.19	0.07	0.07	0.07		0.09	0.50	0.50	0.05	0.45
Sat Flow, veh/h	858	962	1573	1774	415	1226		3442	5205	40	1774	5085
Grp Volume(v), veh/h	299	0	260	65	0	87		391	1845	1014	65	2696
Grp Sat Flow(s),veh/h/ln	1820	0	1573	1774	0	1641		1721	1695	1856	1774	1695
Q Serve(g_s), s	17.6	0.0	17.7	3.9	0.0	5.7		9.9	55.2	55.2	4.0	50.2
Cycle Q Clear(g_c), s	17.6	0.0	17.7	3.9	0.0	5.7		9.9	55.2	55.2	4.0	50.2
Prop In Lane	0.47		1.00	1.00		0.75		1.00		0.02	1.00	
Lane Grp Cap(c), veh/h	347	0	300	132	0	122		309	1696	928	83	2313
V/C Ratio(X)	0.86	0.00	0.87	0.49	0.00	0.71		1.27	1.09	1.09	0.78	1.17
Avail Cap(c_a), veh/h	528	0	456	514	0	476		309	1696	928	180	2313
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	0.0	43.3	49.1	0.0	49.9		50.2	27.6	27.6	52.0	30.1
Incr Delay (d2), s/veh	5.9	0.0	7.2	1.1	0.0	2.9		143.2	50.1	57.9	5.8	79.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	0.0	8.3	2.0	0.0	2.7		10.8	37.5	43.0	2.1	40.4
LnGrp Delay(d),s/veh	49.2	0.0	50.5	50.1	0.0	52.8		193.4	77.6	85.5	57.8	109.7
LnGrp LOS	D		D	D		D		F	F	F	E	F
Approach Vol, veh/h		559			152				3250			2891
Approach Delay, s/veh		49.8			51.7				94.0			104.5
Approach LOS		D			D				F			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.0	55.1		26.6	10.0	60.1		13.7
Change Period (Y+Rc), s	* 5.1	* 4.9		5.5	* 4.8	* 4.9		5.5
Max Green Setting (Gmax), s	* 9.9	* 50		32.0	* 11	* 49		32.0
Max Q Clear Time (g_c+I1), s	11.9	52.2		19.7	6.0	57.2		7.7
Green Ext Time (p_c), s	0.0	0.0		0.7	0.0	0.0		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	93.9
HCM 2010 LOS	F

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	120
Future Volume (veh/h)	120
Number	12
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.97
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	130
Adj No. of Lanes	1
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	701
Arrive On Green	0.45
Sat Flow, veh/h	1542
Grp Volume(v), veh/h	130
Grp Sat Flow(s),veh/h/ln	1542
Q Serve(g_s), s	5.5
Cycle Q Clear(g_c), s	5.5
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	701
V/C Ratio(X)	0.19
Avail Cap(c_a), veh/h	701
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	17.9
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	2.4
LnGrp Delay(d),s/veh	18.0
LnGrp LOS	B
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1160	20	20	1130	1470	340
Future Volume (veh/h)	1160	20	20	1130	1470	340
Number	7	14	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	1261	22	22	1228	1598	370
Adj No. of Lanes	2	1	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1299	622	27	1858	1651	738
Arrive On Green	0.38	0.38	0.02	0.52	0.47	0.47
Sat Flow, veh/h	3442	1583	1774	3632	3632	1583
Grp Volume(v), veh/h	1261	22	22	1228	1598	370
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1770	1770	1583
Q Serve(g_s), s	45.7	1.1	1.6	32.0	55.8	20.7
Cycle Q Clear(g_c), s	45.7	1.1	1.6	32.0	55.8	20.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	1299	622	27	1858	1651	738
V/C Ratio(X)	0.97	0.04	0.82	0.66	0.97	0.50
Avail Cap(c_a), veh/h	1315	629	56	1935	1662	743
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.8	23.7	62.3	21.9	33.0	23.6
Incr Delay (d2), s/veh	18.0	0.0	19.4	0.6	15.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.0	1.2	0.9	15.7	30.5	9.1
LnGrp Delay(d),s/veh	56.8	23.8	81.7	22.6	48.0	23.8
LnGrp LOS	E	C	F	C	D	C
Approach Vol, veh/h	1283			1250	1968	
Approach Delay, s/veh	56.2			23.6	43.4	
Approach LOS	E			C	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	7.4	66.1		53.4		73.5		
Change Period (Y+Rc), s	5.5	* 6.9		5.5		* 6.9		
Max Green Setting (Gmax), s	4.0	* 60		48.5		* 69		
Max Q Clear Time (g_c+I1), s	3.6	57.8		47.7		34.0		
Green Ext Time (p_c), s	0.0	1.4		0.2		8.9		

Intersection Summary	
HCM 2010 Ctrl Delay	41.6
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	880	1430	0	990	120	50	760
Future Volume (veh/h)	880	1430	0	990	120	50	760
Number	1	6		2	12	3	18
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863		1863	1863	1863	1863
Adj Flow Rate, veh/h	957	1554		1076	130	54	826
Adj No. of Lanes	2	2		2	1	1	1
Peak Hour Factor	0.92	0.92		0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2		2	2	2	2
Cap, veh/h	1021	2307		1048	469	372	332
Arrive On Green	0.30	0.65		0.30	0.30	0.21	0.21
Sat Flow, veh/h	3442	3632		3632	1583	1774	1583
Grp Volume(v), veh/h	957	1554		1076	130	54	826
Grp Sat Flow(s),veh/h/ln	1721	1770		1770	1583	1774	1583
Q Serve(g_s), s	23.9	24.0		26.1	5.6	2.2	18.5
Cycle Q Clear(g_c), s	23.9	24.0		26.1	5.6	2.2	18.5
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1021	2307		1048	469	372	332
V/C Ratio(X)	0.94	0.67		1.03	0.28	0.15	2.49
Avail Cap(c_a), veh/h	1093	2307		1048	469	372	332
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.2	9.5		31.0	23.8	28.4	34.8
Incr Delay (d2), s/veh	13.7	0.6		34.9	0.1	0.1	677.6
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.2	11.6		17.7	2.4	1.1	70.6
LnGrp Delay(d),s/veh	43.9	10.2		65.9	23.9	28.5	712.5
LnGrp LOS	D	B		F	C	C	F
Approach Vol, veh/h		2511		1206		880	
Approach Delay, s/veh		23.0		61.4		670.5	
Approach LOS		C		E		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	31.4	32.8				64.2		24.0
Change Period (Y+Rc), s	* 5.2	* 6.7				* 6.7		5.5
Max Green Setting (Gmax), s	* 28	* 26				* 50		18.5
Max Q Clear Time (g_c+I1), s	25.9	28.1				26.0		20.5
Green Ext Time (p_c), s	0.3	0.0				7.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	157.0
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	170	10	180	70	0	10	0	110	0	0	0
Future Volume (veh/h)	0	170	10	180	70	0	10	0	110	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	185	11	196	76	0	11	0	120	0	0	0
Adj No. of Lanes	1	2	1	1	2	1	1	3	1	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	4	410	184	188	1124	503	25	2500	778	4	1942	605
Arrive On Green	0.00	0.12	0.12	0.11	0.32	0.00	0.01	0.00	0.49	0.00	0.00	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	0	185	11	196	76	0	11	0	120	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.0	2.3	0.3	5.0	0.7	0.0	0.3	0.0	2.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	2.3	0.3	5.0	0.7	0.0	0.3	0.0	2.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	4	410	184	188	1124	503	25	2500	778	4	1942	605
V/C Ratio(X)	0.00	0.45	0.06	1.04	0.07	0.00	0.44	0.00	0.15	0.00	0.00	0.00
Avail Cap(c_a), veh/h	188	1352	605	188	1352	605	188	2500	778	188	1942	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	19.4	18.5	21.1	11.2	0.0	23.0	0.0	6.6	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	0.1	76.9	0.0	0.0	11.4	0.0	0.4	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.1	0.1	6.4	0.3	0.0	0.2	0.0	0.9	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	20.2	18.7	98.1	11.2	0.0	34.4	0.0	7.0	0.0	0.0	0.0
LnGrp LOS		C	B	F	B		C		A			
Approach Vol, veh/h		196			272			131			0	
Approach Delay, s/veh		20.1			73.8			9.3			0.0	
Approach LOS		C			E			A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	27.7	9.5	10.0	5.2	22.5	0.0	19.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.0	5.0	18.0	5.0	18.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	0.0	4.0	7.0	4.3	2.3	0.0	0.0	2.7
Green Ext Time (p_c), s	0.0	0.3	0.0	1.3	0.0	0.0	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	42.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	470	380	340	0	160	170	230	880	0	280	970	370
Future Volume (veh/h)	470	380	340	0	160	170	230	880	0	280	970	370
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	511	413	370	0	174	185	250	957	0	304	1054	402
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	608	1425	638	5	562	252	334	1435	447	391	1519	473
Arrive On Green	0.18	0.40	0.40	0.00	0.16	0.16	0.10	0.28	0.00	0.11	0.30	0.30
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	511	413	370	0	174	185	250	957	0	304	1054	402
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	9.6	5.3	12.2	0.0	2.9	7.5	4.7	11.1	0.0	5.8	12.3	16.0
Cycle Q Clear(g_c), s	9.6	5.3	12.2	0.0	2.9	7.5	4.7	11.1	0.0	5.8	12.3	16.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	608	1425	638	5	562	252	334	1435	447	391	1519	473
V/C Ratio(X)	0.84	0.29	0.58	0.00	0.31	0.74	0.75	0.67	0.00	0.78	0.69	0.85
Avail Cap(c_a), veh/h	642	1425	638	257	951	426	334	1435	447	391	1519	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	13.5	15.6	0.0	24.9	26.8	29.4	21.2	0.0	28.9	20.8	22.1
Incr Delay (d2), s/veh	9.4	0.1	1.3	0.0	0.3	4.2	9.0	2.5	0.0	9.6	2.6	17.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	2.6	5.5	0.0	1.5	3.5	2.7	5.6	0.0	3.3	6.1	9.2
LnGrp Delay(d),s/veh	36.1	13.6	16.9	0.0	25.2	31.0	38.4	23.7	0.0	38.5	23.4	39.3
LnGrp LOS	D	B	B		C	C	D	C		D	C	D
Approach Vol, veh/h		1294			359			1207			1760	
Approach Delay, s/veh		23.4			28.2			26.8			29.6	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	23.4	0.0	31.5	11.0	24.5	16.3	15.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.6	18.9	5.0	25.5	6.5	20.0	12.5	18.0
Max Q Clear Time (g_c+I1), s	7.8	13.1	0.0	14.2	6.7	18.0	11.6	9.5
Green Ext Time (p_c), s	0.0	5.1	0.0	4.6	0.0	1.9	0.2	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	27.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	140	50	50	100	10	40	300	10	10	600	280
Future Volume (veh/h)	250	140	50	50	100	10	40	300	10	10	600	280
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	272	152	54	54	109	11	43	326	11	11	652	304
Adj No. of Lanes	1	2	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	324	878	393	91	217	184	78	1271	569	25	1166	522
Arrive On Green	0.18	0.25	0.25	0.05	0.12	0.12	0.04	0.36	0.36	0.01	0.33	0.33
Sat Flow, veh/h	1774	3539	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	272	152	54	54	109	11	43	326	11	11	652	304
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	8.1	1.9	1.5	1.6	3.0	0.3	1.3	3.6	0.2	0.3	8.3	8.8
Cycle Q Clear(g_c), s	8.1	1.9	1.5	1.6	3.0	0.3	1.3	3.6	0.2	0.3	8.3	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	324	878	393	91	217	184	78	1271	569	25	1166	522
V/C Ratio(X)	0.84	0.17	0.14	0.60	0.50	0.06	0.55	0.26	0.02	0.44	0.56	0.58
Avail Cap(c_a), veh/h	352	1449	648	207	610	519	161	1271	569	161	1166	522
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.7	16.2	16.1	25.5	22.8	21.6	25.7	12.4	11.4	26.9	15.1	15.3
Incr Delay (d2), s/veh	15.4	0.1	0.2	6.1	1.8	0.1	6.0	0.5	0.1	11.7	1.9	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.9	0.7	0.9	1.7	0.2	0.8	1.8	0.1	0.2	4.4	4.5
LnGrp Delay(d),s/veh	37.0	16.3	16.2	31.6	24.6	21.7	31.8	12.9	11.4	38.6	17.1	20.0
LnGrp LOS	D	B	B	C	C	C	C	B	B	D	B	B
Approach Vol, veh/h		478			174			380			967	
Approach Delay, s/veh		28.1			26.6			15.0			18.2	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.3	24.2	7.3	18.1	6.9	22.6	14.5	10.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.1	6.4	22.5	5.0	18.1	10.9	18.0
Max Q Clear Time (g_c+I1), s	2.3	5.6	3.6	3.9	3.3	10.8	10.1	5.0
Green Ext Time (p_c), s	0.0	6.2	0.0	1.6	0.0	4.3	0.1	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	20.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	740	280	50	350	90	140	150	60	160	280	40
Future Volume (veh/h)	20	740	280	50	350	90	140	150	60	160	280	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	22	804	304	54	380	98	152	163	65	174	304	43
Adj No. of Lanes	2	3	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	1556	484	182	1177	526	347	659	295	316	627	280
Arrive On Green	0.03	0.31	0.31	0.05	0.33	0.33	0.10	0.19	0.19	0.09	0.18	0.18
Sat Flow, veh/h	3442	5085	1583	3442	3539	1583	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	22	804	304	54	380	98	152	163	65	174	304	43
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1770	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	0.3	6.5	8.2	0.7	4.0	2.2	2.1	1.9	1.7	2.4	3.8	1.1
Cycle Q Clear(g_c), s	0.3	6.5	8.2	0.7	4.0	2.2	2.1	1.9	1.7	2.4	3.8	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	91	1556	484	182	1177	526	347	659	295	316	627	280
V/C Ratio(X)	0.24	0.52	0.63	0.30	0.32	0.19	0.44	0.25	0.22	0.55	0.48	0.15
Avail Cap(c_a), veh/h	347	1898	591	347	1321	591	1250	2142	958	590	1464	655
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	14.2	14.8	22.6	12.4	11.8	21.0	17.2	17.1	21.5	18.4	17.3
Incr Delay (d2), s/veh	1.4	0.3	1.5	0.9	0.2	0.2	0.9	0.2	0.4	1.5	0.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.0	3.7	0.4	1.9	1.0	1.0	1.0	0.8	1.2	1.9	0.5
LnGrp Delay(d),s/veh	25.0	14.4	16.3	23.5	12.5	11.9	21.8	17.4	17.5	23.0	18.9	17.5
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		1130			532			380			521	
Approach Delay, s/veh		15.1			13.5			19.2			20.2	
Approach LOS		B			B			B			C	

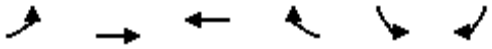
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	13.7	7.1	19.7	9.5	13.3	5.8	21.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.5	30.0	5.0	18.5	18.0	20.5	5.0	18.5
Max Q Clear Time (g_c+I1), s	4.4	3.9	2.7	10.2	4.1	5.8	2.3	6.0
Green Ext Time (p_c), s	0.2	3.5	0.0	5.0	0.4	2.9	0.0	6.6

Intersection Summary	
HCM 2010 Ctrl Delay	16.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	180	120	50	90	70	70	80	40	90	100	20
Future Volume (veh/h)	30	180	120	50	90	70	70	80	40	90	100	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	33	196	130	54	98	76	76	87	43	98	109	22
Adj No. of Lanes	1	1	1	2	1	1	1	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	318	270	179	347	295	113	1274	570	250	1305	584
Arrive On Green	0.04	0.17	0.17	0.05	0.19	0.19	0.06	0.36	0.36	0.07	0.37	0.37
Sat Flow, veh/h	1774	1863	1583	3442	1863	1583	1774	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	33	196	130	54	98	76	76	87	43	98	109	22
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1721	1863	1583	1774	1770	1583	1721	1770	1583
Q Serve(g_s), s	1.0	5.1	3.9	0.8	2.4	2.1	2.2	0.8	0.9	1.4	1.0	0.5
Cycle Q Clear(g_c), s	1.0	5.1	3.9	0.8	2.4	2.1	2.2	0.8	0.9	1.4	1.0	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	65	318	270	179	347	295	113	1274	570	250	1305	584
V/C Ratio(X)	0.51	0.62	0.48	0.30	0.28	0.26	0.67	0.07	0.08	0.39	0.08	0.04
Avail Cap(c_a), veh/h	170	642	546	330	642	546	187	1274	570	343	1305	584
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	20.1	19.6	23.8	18.3	18.2	23.9	11.0	11.0	23.1	10.7	10.5
Incr Delay (d2), s/veh	6.1	2.0	1.3	0.9	0.4	0.5	6.7	0.1	0.3	1.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.8	1.8	0.4	1.2	1.0	1.3	0.4	0.4	0.7	0.5	0.2
LnGrp Delay(d),s/veh	30.8	22.0	20.9	24.8	18.7	18.6	30.6	11.1	11.2	24.1	10.9	10.7
LnGrp LOS	C	C	C	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		359			228			206			229	
Approach Delay, s/veh		22.4			20.1			18.3			16.5	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	23.3	7.2	13.4	7.8	23.8	6.4	14.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.2	18.8	5.0	18.0	5.5	18.5	5.0	18.0
Max Q Clear Time (g_c+I1), s	3.4	2.9	2.8	7.1	4.2	3.0	3.0	4.4
Green Ext Time (p_c), s	0.0	1.2	0.0	1.8	0.0	1.2	0.0	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	19.7
HCM 2010 LOS	B



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	0	0	0	0	30
Future Volume (veh/h)	30	0	0	0	0	30
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	33	0	0	0	0	33
Adj No. of Lanes	2	2	2	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	139	143	12	6	1145	1022
Arrive On Green	0.04	0.00	0.00	0.00	0.00	0.65
Sat Flow, veh/h	3442	3632	-82054	1583	1774	1583
Grp Volume(v), veh/h	33	0	0	0	0	33
Grp Sat Flow(s),veh/h/ln	1721	1770	1770	1583	1774	1583
Q Serve(g_s), s	0.3	0.0	0.0	0.0	0.0	0.2
Cycle Q Clear(g_c), s	0.3	0.0	0.0	0.0	0.0	0.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	139	143	12	6	1145	1022
V/C Ratio(X)	0.24	0.00	0.00	0.00	0.00	0.03
Avail Cap(c_a), veh/h	601	3397	2223	995	1145	1022
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	13.3	0.0	0.0	0.0	0.0	1.8
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.0	0.0	0.4
LnGrp Delay(d),s/veh	14.2	0.0	0.0	0.0	0.0	1.9
LnGrp LOS	B					A
Approach Vol, veh/h		33	0		33	
Approach Delay, s/veh		14.2	0.0		1.9	
Approach LOS		B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				5.7		23.0	5.7	0.0
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				27.5		18.5	5.0	18.0
Max Q Clear Time (g_c+I1), s				0.0		2.2	2.3	0.0
Green Ext Time (p_c), s				0.0		0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	8.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	320	90	100	100	0	70	0	20	0	0	0
Future Volume (veh/h)	0	320	90	100	100	0	70	0	20	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	348	98	109	109	0	76	0	22	0	0	0
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	8	1345	602	613	1345	602	149	412	351	8	8	7
Arrive On Green	0.00	0.38	0.38	0.38	0.38	0.00	0.08	0.00	0.22	0.00	0.00	0.00
Sat Flow, veh/h	1774	3539	1583	940	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	0	348	98	109	109	0	76	0	22	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	940	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.0	1.5	0.9	2.0	0.4	0.0	0.9	0.0	0.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	1.5	0.9	3.6	0.4	0.0	0.9	0.0	0.2	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	8	1345	602	613	1345	602	149	412	351	8	8	7
V/C Ratio(X)	0.00	0.26	0.16	0.18	0.08	0.00	0.51	0.00	0.06	0.00	0.00	0.00
Avail Cap(c_a), veh/h	393	4310	1928	1005	2821	1262	432	1567	1332	393	1526	1297
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	4.8	4.6	6.0	4.5	0.0	9.9	0.0	6.9	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.1	0.0	0.0	2.7	0.0	0.1	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.7	0.4	0.5	0.2	0.0	0.6	0.0	0.1	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	4.9	4.8	6.2	4.5	0.0	12.6	0.0	7.0	0.0	0.0	0.0
LnGrp LOS		A	A	A	A		B		A			
Approach Vol, veh/h		446			218			98			0	
Approach Delay, s/veh		4.9			5.3			11.3			0.0	
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	9.5		13.1	6.4	3.1	0.0	13.1
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0		27.5	5.5	18.5	5.0	18.0
Max Q Clear Time (g_c+I1), s	0.0	2.2		3.5	2.9	0.0	0.0	5.6
Green Ext Time (p_c), s	0.0	0.0		4.0	0.0	0.0	0.0	3.2

Intersection Summary	
HCM 2010 Ctrl Delay	5.8
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	10	70	10	10	0	20	20	10	0	20	30
Future Volume (veh/h)	20	10	70	10	10	0	20	20	10	0	20	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	22	11	76	11	11	0	22	22	11	0	22	33
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	48	183	156	25	160	136	48	1052	894	4	801	681
Arrive On Green	0.03	0.10	0.10	0.01	0.09	0.00	0.03	0.56	0.56	0.00	0.43	0.43
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	22	11	76	11	11	0	22	22	11	0	22	33
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.5	0.2	1.9	0.3	0.2	0.0	0.5	0.2	0.1	0.0	0.3	0.5
Cycle Q Clear(g_c), s	0.5	0.2	1.9	0.3	0.2	0.0	0.5	0.2	0.1	0.0	0.3	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	48	183	156	25	160	136	48	1052	894	4	801	681
V/C Ratio(X)	0.46	0.06	0.49	0.43	0.07	0.00	0.46	0.02	0.01	0.00	0.03	0.05
Avail Cap(c_a), veh/h	212	801	681	212	801	681	212	1052	894	212	801	681
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	20.1	17.1	17.9	20.5	17.6	0.0	20.1	4.0	4.0	0.0	6.9	6.9
Incr Delay (d2), s/veh	6.7	0.1	2.4	11.2	0.2	0.0	6.7	0.0	0.0	0.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	0.9	0.2	0.1	0.0	0.3	0.1	0.1	0.0	0.2	0.2
LnGrp Delay(d),s/veh	26.8	17.2	20.2	31.6	17.8	0.0	26.8	4.1	4.0	0.0	6.9	7.1
LnGrp LOS	C	B	C	C	B		C	A	A		A	A
Approach Vol, veh/h		109			22			55			55	
Approach Delay, s/veh		21.2			24.7			13.1			7.0	
Approach LOS		C			C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	28.1	5.1	8.6	5.6	22.5	5.6	8.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.0	5.0	18.0	5.0	18.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	0.0	2.2	2.3	3.9	2.5	2.5	2.5	2.2
Green Ext Time (p_c), s	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	16.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	480	210	30	310	20	60	10	20	30	10	30
Future Volume (veh/h)	70	480	210	30	310	20	60	10	20	30	10	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	76	522	228	33	337	22	65	11	22	33	11	33
Adj No. of Lanes	1	3	1	2	2	1	2	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	111	1243	387	124	771	345	198	656	558	64	616	524
Arrive On Green	0.06	0.24	0.24	0.04	0.22	0.22	0.06	0.35	0.35	0.04	0.33	0.33
Sat Flow, veh/h	1774	5085	1583	3442	3539	1583	3442	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	76	522	228	33	337	22	65	11	22	33	11	33
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1770	1583	1721	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.3	4.7	6.9	0.5	4.5	0.6	1.0	0.2	0.5	1.0	0.2	0.8
Cycle Q Clear(g_c), s	2.3	4.7	6.9	0.5	4.5	0.6	1.0	0.2	0.5	1.0	0.2	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	111	1243	387	124	771	345	198	656	558	64	616	524
V/C Ratio(X)	0.68	0.42	0.59	0.27	0.44	0.06	0.33	0.02	0.04	0.52	0.02	0.06
Avail Cap(c_a), veh/h	163	1683	524	316	1171	524	316	656	558	163	616	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.0	17.3	18.1	25.5	18.4	16.9	24.6	11.5	11.6	25.7	12.2	12.4
Incr Delay (d2), s/veh	7.1	0.2	1.4	1.1	0.4	0.1	1.0	0.0	0.1	6.3	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	2.2	3.1	0.3	2.2	0.3	0.5	0.1	0.2	0.6	0.1	0.4
LnGrp Delay(d),s/veh	32.1	17.5	19.6	26.6	18.8	16.9	25.6	11.5	11.7	32.0	12.3	12.7
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		826			392			98			77	
Approach Delay, s/veh		19.4			19.3			20.9			20.9	
Approach LOS		B			B			C			C	

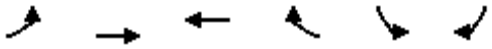
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	23.7	6.5	17.8	7.6	22.5	7.9	16.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.0	5.0	18.0	5.0	18.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	3.0	2.5	2.5	8.9	3.0	2.8	4.3	6.5
Green Ext Time (p_c), s	0.0	0.2	0.0	4.4	0.0	0.2	0.0	5.1

Intersection Summary	
HCM 2010 Ctrl Delay	19.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	160	50	60	110	20	20	10	30	20	10	10
Future Volume (veh/h)	10	160	50	60	110	20	20	10	30	20	10	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	11	174	54	65	120	22	22	11	33	22	11	11
Adj No. of Lanes	2	1	1	1	1	1	2	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	49	295	251	107	382	324	91	703	597	47	703	597
Arrive On Green	0.01	0.16	0.16	0.06	0.20	0.20	0.03	0.38	0.38	0.03	0.38	0.38
Sat Flow, veh/h	3442	1863	1583	1774	1863	1583	3442	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	11	174	54	65	120	22	22	11	33	22	11	11
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1863	1583	1721	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.2	4.1	1.4	1.7	2.6	0.5	0.3	0.2	0.6	0.6	0.2	0.2
Cycle Q Clear(g_c), s	0.2	4.1	1.4	1.7	2.6	0.5	0.3	0.2	0.6	0.6	0.2	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	49	295	251	107	382	324	91	703	597	47	703	597
V/C Ratio(X)	0.22	0.59	0.22	0.61	0.31	0.07	0.24	0.02	0.06	0.47	0.02	0.02
Avail Cap(c_a), veh/h	361	703	597	186	703	597	361	703	597	186	703	597
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.3	18.6	17.5	21.9	16.1	15.3	22.8	9.3	9.5	22.9	9.3	9.3
Incr Delay (d2), s/veh	2.3	1.9	0.4	5.4	0.5	0.1	1.3	0.0	0.2	7.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.3	0.6	1.0	1.4	0.2	0.2	0.1	0.3	0.4	0.1	0.1
LnGrp Delay(d),s/veh	25.6	20.5	17.9	27.3	16.6	15.4	24.1	9.3	9.6	30.0	9.3	9.4
LnGrp LOS	C	C	B	C	B	B	C	A	A	C	A	A
Approach Vol, veh/h		239			207			66			44	
Approach Delay, s/veh		20.1			19.8			14.4			19.7	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	22.5	7.4	12.1	5.8	22.5	5.2	14.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.0	5.0	18.0	5.0	18.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.6	2.6	3.7	6.1	2.3	2.2	2.2	4.6
Green Ext Time (p_c), s	0.0	0.1	0.0	1.5	0.0	0.1	0.0	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	19.3
HCM 2010 LOS	B



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	100	100	100	50	40	40
Future Volume (veh/h)	100	100	100	50	40	40
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	109	109	109	54	43	43
Adj No. of Lanes	1	2	2	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	196	1765	651	291	165	147
Arrive On Green	0.11	0.50	0.18	0.18	0.09	0.09
Sat Flow, veh/h	1774	3632	3632	1583	1774	1583
Grp Volume(v), veh/h	109	109	109	54	43	43
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1583	1774	1583
Q Serve(g_s), s	1.3	0.4	0.6	0.6	0.5	0.6
Cycle Q Clear(g_c), s	1.3	0.4	0.6	0.6	0.5	0.6
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	196	1765	651	291	165	147
V/C Ratio(X)	0.56	0.06	0.17	0.19	0.26	0.29
Avail Cap(c_a), veh/h	427	4465	2891	1293	1465	1308
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.3	2.9	7.6	7.6	9.3	9.3
Incr Delay (d2), s/veh	2.5	0.0	0.1	0.3	0.8	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.2	0.3	0.0	0.3	0.0
LnGrp Delay(d),s/veh	11.7	2.9	7.7	7.9	10.1	10.4
LnGrp LOS	B	A	A	A	B	B
Approach Vol, veh/h		218	163		86	
Approach Delay, s/veh		7.3	7.8		10.3	
Approach LOS		A	A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				15.5		6.5	6.9	8.6
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				27.8		18.2	5.3	18.0
Max Q Clear Time (g_c+I1), s				2.4		2.6	3.3	2.6
Green Ext Time (p_c), s				1.5		0.2	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	8.0
HCM 2010 LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	40	60	790	40	110	1090
Future Volume (veh/h)	40	60	790	40	110	1090
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	43	65	859	43	120	1185
Adj No. of Lanes	1	1	3	1	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	176	160	3055	951	1101	2126
Arrive On Green	0.10	0.10	0.60	0.60	0.60	0.60
Sat Flow, veh/h	1774	1615	5253	1583	1194	3632
Grp Volume(v), veh/h	43	65	859	43	120	1185
Grp Sat Flow(s),veh/h/ln	1774	1615	1695	1583	597	1770
Q Serve(g_s), s	0.7	1.1	2.4	0.3	1.6	6.0
Cycle Q Clear(g_c), s	0.7	1.1	2.4	0.3	4.0	6.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	176	160	3055	951	1101	2126
V/C Ratio(X)	0.24	0.41	0.28	0.05	0.11	0.56
Avail Cap(c_a), veh/h	1066	970	3055	951	1101	2126
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.5	12.7	2.9	2.5	3.8	3.6
Incr Delay (d2), s/veh	0.7	1.7	0.2	0.1	0.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.6	1.2	0.2	0.3	3.1
LnGrp Delay(d),s/veh	13.2	14.3	3.1	2.5	4.0	4.7
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	108		902			1305
Approach Delay, s/veh	13.9		3.1			4.6
Approach LOS	B		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		22.5				22.5		7.5
Change Period (Y+Rc), s		4.5				4.5		4.5
Max Green Setting (Gmax), s		18.0				18.0		18.0
Max Q Clear Time (g_c+I1), s		4.4				8.0		3.1
Green Ext Time (p_c), s		10.3				8.0		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	4.4
HCM 2010 LOS	A

Notes

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	20	30	600	640	100
Future Volume (veh/h)	30	20	30	600	640	100
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	33	22	33	652	696	109
Adj No. of Lanes	1	1	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	110	98	610	2214	2214	990
Arrive On Green	0.06	0.06	0.63	0.63	0.63	0.63
Sat Flow, veh/h	1774	1583	674	3632	3632	1583
Grp Volume(v), veh/h	33	22	33	652	696	109
Grp Sat Flow(s),veh/h/ln	1774	1583	674	1770	1770	1583
Q Serve(g_s), s	0.5	0.4	0.7	2.4	2.6	0.8
Cycle Q Clear(g_c), s	0.5	0.4	3.3	2.4	2.6	0.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	110	98	610	2214	2214	990
V/C Ratio(X)	0.30	0.22	0.05	0.29	0.31	0.11
Avail Cap(c_a), veh/h	1110	990	610	2214	2214	990
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.9	12.8	3.3	2.5	2.5	2.2
Incr Delay (d2), s/veh	1.5	1.1	0.2	0.3	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.2	0.2	1.3	1.4	0.4
LnGrp Delay(d),s/veh	14.4	14.0	3.5	2.8	2.9	2.4
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	55			685	805	
Approach Delay, s/veh	14.3			2.8	2.8	
Approach LOS	B			A	A	

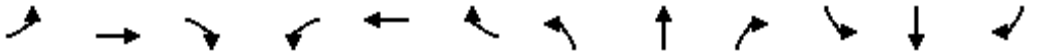
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		22.5		6.3		22.5		
Change Period (Y+Rc), s		4.5		4.5		4.5		
Max Green Setting (Gmax), s		18.0		18.0		18.0		
Max Q Clear Time (g_c+I1), s		5.3		2.5		4.6		
Green Ext Time (p_c), s		7.6		0.1		7.9		

Intersection Summary	
HCM 2010 Ctrl Delay	3.2
HCM 2010 LOS	A

Appendix E

Analysis Worksheets for
Cumulative plus Proposed Project Conditions

Jaeger Ranch
1: Bradshaw Rd & Jackson Rd/SR-16



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	512	230	160	655	90	190	2720	90	20	980	70
Future Volume (veh/h)	160	512	230	160	655	90	190	2720	90	20	980	70
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	174	557	250	174	712	98	207	2957	98	22	1065	0
Adj No. of Lanes	1	1	1	1	1	1	1	3	0	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	530	450	126	530	450	229	2296	75	27	1731	539
Arrive On Green	0.07	0.28	0.28	0.07	0.28	0.28	0.13	0.45	0.45	0.02	0.34	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5054	165	1774	5085	1583
Grp Volume(v), veh/h	174	557	250	174	712	98	207	1972	1083	22	1065	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1829	1774	1695	1583
Q Serve(g_s), s	10.5	42.0	19.8	10.5	42.0	7.0	17.0	67.1	67.1	1.8	25.8	0.0
Cycle Q Clear(g_c), s	10.5	42.0	19.8	10.5	42.0	7.0	17.0	67.1	67.1	1.8	25.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	126	530	450	126	530	450	229	1540	831	27	1731	539
V/C Ratio(X)	1.38	1.05	0.56	1.38	1.34	0.22	0.90	1.28	1.30	0.81	0.62	0.00
Avail Cap(c_a), veh/h	126	530	450	126	530	450	287	1540	831	60	1731	539
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	68.6	52.8	44.9	68.6	52.8	40.3	63.4	40.3	40.3	72.5	40.6	0.0
Incr Delay (d2), s/veh	212.4	53.3	0.9	212.4	167.1	0.1	23.1	131.1	145.2	18.1	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.6	29.3	8.8	12.6	46.1	3.1	9.8	59.3	67.2	1.0	12.1	0.0
LnGrp Delay(d),s/veh	281.0	106.1	45.8	281.0	219.9	40.4	86.5	171.4	185.5	90.6	41.2	0.0
LnGrp LOS	F	F	D	F	F	D	F	F	F	F	D	
Approach Vol, veh/h		981			984			3262			1087	
Approach Delay, s/veh		121.8			212.8			170.7			42.2	
Approach LOS		F			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.6	57.7	16.0	49.4	7.8	74.5	16.0	49.4
Change Period (Y+Rc), s	5.5	7.4	5.5	7.4	5.5	7.4	5.5	* 7.4
Max Green Setting (Gmax), s	23.9	48.2	10.5	41.6	5.0	67.1	10.5	* 42
Max Q Clear Time (g_c+I1), s	19.0	27.8	12.5	44.0	3.8	69.1	12.5	44.0
Green Ext Time (p_c), s	0.1	14.9	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		147.5
HCM 2010 LOS		F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	492	10	75	775	10	40	760	162	10	130	130
Future Volume (veh/h)	120	492	10	75	775	10	40	760	162	10	130	130
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	130	535	11	82	842	11	43	826	176	11	141	141
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	133	947	19	103	894	12	55	785	167	37	963	819
Arrive On Green	0.07	0.27	0.27	0.06	0.25	0.25	0.03	0.53	0.53	0.02	0.52	0.52
Sat Flow, veh/h	1774	3547	73	1774	3577	47	1774	1489	317	1774	1863	1583
Grp Volume(v), veh/h	130	267	279	82	416	437	43	0	1002	11	141	141
Grp Sat Flow(s),veh/h/ln	1774	1770	1850	1774	1770	1854	1774	0	1807	1774	1863	1583
Q Serve(g_s), s	9.8	17.4	17.4	6.1	30.9	30.9	3.2	0.0	70.5	0.8	5.3	6.3
Cycle Q Clear(g_c), s	9.8	17.4	17.4	6.1	30.9	30.9	3.2	0.0	70.5	0.8	5.3	6.3
Prop In Lane	1.00		0.04	1.00		0.03	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	133	472	494	103	442	464	55	0	952	37	963	819
V/C Ratio(X)	0.98	0.56	0.57	0.80	0.94	0.94	0.78	0.00	1.05	0.29	0.15	0.17
Avail Cap(c_a), veh/h	133	472	494	130	450	471	122	0	952	245	1111	945
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.8	42.3	42.3	62.2	49.2	49.2	64.3	0.0	31.6	64.5	16.9	17.1
Incr Delay (d2), s/veh	71.6	1.9	1.9	18.7	28.3	27.5	8.4	0.0	43.9	1.6	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	8.8	9.2	3.5	18.5	19.3	1.7	0.0	46.5	0.4	2.8	2.9
LnGrp Delay(d),s/veh	133.4	44.3	44.2	80.9	77.5	76.7	72.8	0.0	75.5	66.1	17.2	17.6
LnGrp LOS	F	D	D	F	E	E	E		F	E	B	B
Approach Vol, veh/h		676			935			1045			293	
Approach Delay, s/veh		61.4			77.4			75.4			19.2	
Approach LOS		E			E			E			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	37.9	8.2	73.7	11.7	40.2	6.8	75.0
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.5
Max Green Setting (Gmax), s	10.0	34.0	9.2	79.8	9.8	34.2	18.5	70.5
Max Q Clear Time (g_c+I1), s	11.8	32.9	5.2	8.3	8.1	19.4	2.8	72.5
Green Ext Time (p_c), s	0.0	0.6	0.0	55.9	0.0	8.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	67.2
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	604	10	10	710	10	10	250	30	10	10	110
Future Volume (veh/h)	90	604	10	10	710	10	10	250	30	10	10	110
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	98	657	11	11	772	11	11	272	33	11	11	120
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	332	1057	18	407	1060	15	81	384	45	90	48	326
Arrive On Green	0.58	0.58	0.58	0.58	0.58	0.58	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	688	1827	31	766	1832	26	25	1602	190	49	200	1361
Grp Volume(v), veh/h	98	0	668	11	0	783	316	0	0	142	0	0
Grp Sat Flow(s),veh/h/ln	688	0	1857	766	0	1858	1817	0	0	1610	0	0
Q Serve(g_s), s	6.0	0.0	11.7	0.5	0.0	15.2	0.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	21.2	0.0	11.7	12.2	0.0	15.2	7.9	0.0	0.0	3.6	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.01	0.03		0.10	0.08		0.85
Lane Grp Cap(c), veh/h	332	0	1075	407	0	1075	510	0	0	464	0	0
V/C Ratio(X)	0.29	0.00	0.62	0.03	0.00	0.73	0.62	0.00	0.00	0.31	0.00	0.00
Avail Cap(c_a), veh/h	373	0	1183	452	0	1183	789	0	0	703	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.3	0.0	6.9	10.9	0.0	7.6	17.3	0.0	0.0	15.7	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.9	0.0	0.0	2.1	1.2	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	6.2	0.1	0.0	8.2	4.1	0.0	0.0	1.7	0.0	0.0
LnGrp Delay(d),s/veh	15.8	0.0	7.7	10.9	0.0	9.7	18.5	0.0	0.0	16.0	0.0	0.0
LnGrp LOS	B		A	B		A	B			B		
Approach Vol, veh/h		766			794			316			142	
Approach Delay, s/veh		8.8			9.7			18.5			16.0	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		16.3		33.1		16.3		33.1
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		19.5		31.5		19.5		31.5
Max Q Clear Time (g_c+I1), s		9.9		23.2		5.6		17.2
Green Ext Time (p_c), s		2.0		5.5		2.4		8.0

Intersection Summary	
HCM 2010 Ctrl Delay	11.2
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	294	360	30	150	600	370	10	1172	40	160	605	200
Future Volume (veh/h)	294	360	30	150	600	370	10	1172	40	160	605	200
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	320	391	33	163	652	402	11	1274	43	174	658	217
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	232	606	515	186	557	473	38	1068	478	197	1386	827
Arrive On Green	0.13	0.33	0.33	0.10	0.30	0.30	0.02	0.30	0.30	0.11	0.39	0.39
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	320	391	33	163	652	402	11	1274	43	174	658	217
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	18.5	25.3	2.0	12.8	42.2	33.7	0.9	42.6	2.8	13.6	19.6	10.7
Cycle Q Clear(g_c), s	18.5	25.3	2.0	12.8	42.2	33.7	0.9	42.6	2.8	13.6	19.6	10.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	232	606	515	186	557	473	38	1068	478	197	1386	827
V/C Ratio(X)	1.38	0.65	0.06	0.88	1.17	0.85	0.29	1.19	0.09	0.88	0.47	0.26
Avail Cap(c_a), veh/h	232	606	515	225	557	473	239	1068	478	308	1386	827
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.3	40.7	32.8	62.3	49.5	46.5	68.0	49.3	35.4	61.8	32.1	18.6
Incr Delay (d2), s/veh	194.2	1.9	0.0	23.9	94.9	13.0	1.6	96.3	0.0	11.3	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.6	13.3	0.9	7.5	36.3	16.4	0.4	35.0	1.2	7.3	9.6	4.7
LnGrp Delay(d),s/veh	255.5	42.5	32.8	86.2	144.4	59.5	69.6	145.6	35.4	73.2	32.2	18.7
LnGrp LOS	F	D	C	F	F	E	E	F	D	E	C	B
Approach Vol, veh/h		744			1217			1328			1049	
Approach Delay, s/veh		133.7			108.6			141.4			36.2	
Approach LOS		F			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	49.0	7.5	61.7	19.3	52.7	20.2	49.0
Change Period (Y+Rc), s	4.5	6.8	4.5	* 6.4	4.5	6.8	4.5	6.4
Max Green Setting (Gmax), s	18.5	42.2	19.0	* 49	17.9	42.8	24.5	42.6
Max Q Clear Time (g_c+I1), s	20.5	44.2	2.9	21.6	14.8	27.3	15.6	44.6
Green Ext Time (p_c), s	0.0	0.0	0.0	10.0	0.0	4.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	105.4
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	330	0	60	740	70	10	578	40	40	741	380
Future Volume (veh/h)	220	330	0	60	740	70	10	578	40	40	741	380
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	239	359	0	65	804	76	11	628	43	43	805	413
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	212	948	0	82	730	69	13	867	59	55	639	326
Arrive On Green	0.12	0.51	0.00	0.05	0.44	0.44	0.01	0.26	0.26	0.03	0.28	0.28
Sat Flow, veh/h	1774	1863	0	1774	1676	158	1774	3362	230	1774	2270	1158
Grp Volume(v), veh/h	239	359	0	65	0	880	11	330	341	43	627	591
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1774	0	1835	1774	1770	1822	1774	1770	1658
Q Serve(g_s), s	17.5	17.2	0.0	5.3	0.0	63.7	0.9	24.9	25.0	3.5	41.2	41.2
Cycle Q Clear(g_c), s	17.5	17.2	0.0	5.3	0.0	63.7	0.9	24.9	25.0	3.5	41.2	41.2
Prop In Lane	1.00		0.00	1.00		0.09	1.00		0.13	1.00		0.70
Lane Grp Cap(c), veh/h	212	948	0	82	0	799	13	456	470	55	498	467
V/C Ratio(X)	1.13	0.38	0.00	0.79	0.00	1.10	0.84	0.72	0.73	0.78	1.26	1.27
Avail Cap(c_a), veh/h	212	948	0	147	0	799	61	478	492	79	498	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.4	21.9	0.0	69.0	0.0	41.3	72.5	49.5	49.5	70.4	52.5	52.5
Incr Delay (d2), s/veh	99.8	0.1	0.0	6.2	0.0	63.3	37.6	4.3	4.2	16.1	131.3	135.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.4	8.8	0.0	2.7	0.0	46.2	0.6	12.7	13.1	2.0	38.3	36.4
LnGrp Delay(d),s/veh	164.2	22.0	0.0	75.2	0.0	104.6	110.1	53.8	53.8	86.4	183.9	188.4
LnGrp LOS	F	C		E		F	F	D	D	F	F	F
Approach Vol, veh/h		598			945			682			1261	
Approach Delay, s/veh		78.8			102.5			54.7			182.7	
Approach LOS		E			F			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	70.5	5.6	48.2	11.3	81.2	9.1	44.7
Change Period (Y+Rc), s	4.5	6.8	4.5	* 7	4.5	* 6.8	4.5	7.0
Max Green Setting (Gmax), s	17.5	63.7	5.0	* 41	12.1	* 70	6.5	39.5
Max Q Clear Time (g_c+I1), s	19.5	65.7	2.9	43.2	7.3	19.2	5.5	27.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	5.1	0.0	5.7

Intersection Summary	
HCM 2010 Ctrl Delay	118.1
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	50	10	41	208	508	70	310	22	214	120	30
Future Volume (veh/h)	50	50	10	41	208	508	70	310	22	214	120	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	54	54	11	45	226	552	76	337	24	233	130	33
Adj No. of Lanes	2	1	1	2	1	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	724	724	615	1273	724	615	610	627	281	474	488	218
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.18	0.18	0.18	0.14	0.14	0.14
Sat Flow, veh/h	1340	1863	1583	2583	1863	1583	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	54	54	11	45	226	552	76	337	24	233	130	33
Grp Sat Flow(s),veh/h/ln	670	1863	1583	1291	1863	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	1.3	0.8	0.2	0.5	3.8	14.9	0.8	3.9	0.6	2.9	1.5	0.8
Cycle Q Clear(g_c), s	5.2	0.8	0.2	1.3	3.8	14.9	0.8	3.9	0.6	2.9	1.5	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	724	724	615	1273	724	615	610	627	281	474	488	218
V/C Ratio(X)	0.07	0.07	0.02	0.04	0.31	0.90	0.12	0.54	0.09	0.49	0.27	0.15
Avail Cap(c_a), veh/h	747	756	643	1318	756	643	1511	1554	695	1360	1398	626
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.5	8.8	8.6	9.2	9.7	13.1	15.8	17.0	15.7	18.2	17.6	17.3
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.2	15.0	0.1	0.7	0.1	0.8	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.4	0.1	0.2	2.0	9.0	0.4	2.0	0.3	1.4	0.7	0.4
LnGrp Delay(d),s/veh	11.5	8.8	8.6	9.2	9.9	28.1	15.9	17.8	15.8	18.9	17.9	17.6
LnGrp LOS	B	A	A	A	A	C	B	B	B	B	B	B
Approach Vol, veh/h		119			823			437			396	
Approach Delay, s/veh		10.0			22.1			17.3			18.5	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		12.6		22.2		10.8		22.2
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		20.0		18.5		18.0		18.5
Max Q Clear Time (g_c+I1), s		5.9		7.2		4.9		16.9
Green Ext Time (p_c), s		2.1		3.6		1.4		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	19.3
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	222	0	30	1040	480	305
Future Volume (veh/h)	222	0	30	1040	480	305
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	241	0	33	1130	522	332
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	302	270	41	1867	759	482
Arrive On Green	0.17	0.00	0.02	0.53	0.36	0.36
Sat Flow, veh/h	1774	1583	1774	3632	2172	1320
Grp Volume(v), veh/h	241	0	33	1130	444	410
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1630
Q Serve(g_s), s	5.1	0.0	0.7	8.7	8.4	8.4
Cycle Q Clear(g_c), s	5.1	0.0	0.7	8.7	8.4	8.4
Prop In Lane	1.00	1.00	1.00			0.81
Lane Grp Cap(c), veh/h	302	270	41	1867	646	595
V/C Ratio(X)	0.80	0.00	0.81	0.61	0.69	0.69
Avail Cap(c_a), veh/h	1062	948	945	4940	1257	1158
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.7	0.0	19.2	6.5	10.6	10.6
Incr Delay (d2), s/veh	1.8	0.0	12.7	0.1	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	0.5	4.3	4.2	3.8
LnGrp Delay(d),s/veh	17.5	0.0	31.9	6.6	11.1	11.2
LnGrp LOS	B		C	A	B	B
Approach Vol, veh/h	241			1163	854	
Approach Delay, s/veh	17.5			7.3	11.1	
Approach LOS	B			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.4	20.9				27.3		12.1
Change Period (Y+Rc), s	5.5	* 6.5				* 6.5		5.4
Max Green Setting (Gmax), s	21.0	* 28				* 55		23.6
Max Q Clear Time (g_c+I1), s	2.7	10.4				10.7		7.1
Green Ext Time (p_c), s	0.0	4.0				4.3		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	10	60	30	70	202	20	1210	20	75	1190	40
Future Volume (veh/h)	90	10	60	30	70	202	20	1210	20	75	1190	40
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	98	11	65	33	76	220	22	1315	22	82	1293	43
Adj No. of Lanes	2	1	1	1	1	1	2	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	202	365	310	59	318	270	85	1605	718	130	1778	795
Arrive On Green	0.06	0.20	0.20	0.03	0.17	0.17	0.02	0.45	0.45	0.07	0.50	0.50
Sat Flow, veh/h	3442	1863	1583	1774	1863	1583	3442	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	98	11	65	33	76	220	22	1315	22	82	1293	43
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1863	1583	1721	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.0	0.4	2.5	1.4	2.6	9.9	0.5	23.9	0.6	3.3	21.2	1.0
Cycle Q Clear(g_c), s	2.0	0.4	2.5	1.4	2.6	9.9	0.5	23.9	0.6	3.3	21.2	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	202	365	310	59	318	270	85	1605	718	130	1778	795
V/C Ratio(X)	0.49	0.03	0.21	0.56	0.24	0.81	0.26	0.82	0.03	0.63	0.73	0.05
Avail Cap(c_a), veh/h	233	454	386	120	454	386	233	1605	718	432	2107	943
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.7	24.0	24.9	35.2	26.5	29.5	35.4	17.6	11.2	33.2	14.4	9.4
Incr Delay (d2), s/veh	1.8	0.0	0.3	8.0	0.4	8.6	1.6	3.5	0.0	4.9	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.2	1.1	0.8	1.4	4.9	0.2	12.3	0.3	1.8	10.5	0.4
LnGrp Delay(d),s/veh	35.5	24.1	25.2	43.2	26.9	38.1	37.0	21.1	11.2	38.1	15.5	9.4
LnGrp LOS	D	C	C	D	C	D	D	C	B	D	B	A
Approach Vol, veh/h		174			329			1359			1418	
Approach Delay, s/veh		30.9			36.0			21.2			16.6	
Approach LOS		C			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	41.6	7.0	19.0	9.9	38.0	8.8	17.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	44.0	5.0	18.0	18.0	31.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.5	23.2	3.4	4.5	5.3	25.9	4.0	11.9
Green Ext Time (p_c), s	0.0	14.0	0.0	1.1	0.1	4.7	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	21.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1030	626	10	45	746	10	10	50	22	10	10	460
Future Volume (veh/h)	1030	626	10	45	746	10	10	50	22	10	10	460
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	1120	680	0	49	811	11	11	54	24	11	11	500
Adj No. of Lanes	1	2	1	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	682	2014	901	63	786	11	14	69	31	149	149	869
Arrive On Green	0.38	0.57	0.00	0.04	0.22	0.22	0.07	0.07	0.07	0.16	0.16	0.16
Sat Flow, veh/h	1774	3539	1583	1774	3575	48	217	1068	474	909	909	1583
Grp Volume(v), veh/h	1120	680	0	49	401	421	89	0	0	22	0	500
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1854	1759	0	0	1817	0	1583
Q Serve(g_s), s	52.5	14.0	0.0	3.7	30.0	30.0	6.8	0.0	0.0	1.4	0.0	22.4
Cycle Q Clear(g_c), s	52.5	14.0	0.0	3.7	30.0	30.0	6.8	0.0	0.0	1.4	0.0	22.4
Prop In Lane	1.00		1.00	1.00		0.03	0.12		0.27	0.50		1.00
Lane Grp Cap(c), veh/h	682	2014	901	63	389	408	114	0	0	298	0	869
V/C Ratio(X)	1.64	0.34	0.00	0.78	1.03	1.03	0.78	0.00	0.00	0.07	0.00	0.58
Avail Cap(c_a), veh/h	682	2014	901	120	389	408	289	0	0	298	0	869
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.0	15.7	0.0	65.3	53.2	53.2	62.8	0.0	0.0	48.3	0.0	20.3
Incr Delay (d2), s/veh	295.1	0.0	0.0	7.5	54.1	53.1	4.2	0.0	0.0	0.0	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	81.5	6.8	0.0	2.0	20.4	21.3	3.4	0.0	0.0	0.7	0.0	12.5
LnGrp Delay(d),s/veh	337.1	15.7	0.0	72.7	107.3	106.3	67.1	0.0	0.0	48.3	0.0	20.9
LnGrp LOS	F	B		E	F	F	E			D		C
Approach Vol, veh/h		1800			871			89			522	
Approach Delay, s/veh		215.7			104.9			67.1			22.1	
Approach LOS		F			F			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	58.0	36.0		14.5	10.3	83.7		28.0
Change Period (Y+Rc), s	5.5	6.0		* 5.6	5.5	* 6		5.6
Max Green Setting (Gmax), s	52.5	30.0		* 22	9.2	* 74		22.4
Max Q Clear Time (g_c+I1), s	54.5	32.0		8.8	5.7	16.0		24.4
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	2.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	151.5
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	490	620	30	10	30	1277	1081	80	130	50	284	10
Future Volume (veh/h)	490	620	30	10	30	1277	1081	80	130	50	284	10
Number	1	6	16		5	2	12	3	8	18	7	4
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		0.99	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900		1863	1863	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	533	674	33		33	1388	1175	87	141	54	309	11
Adj No. of Lanes	1	2	0		2	3	1	1	1	0	2	2
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2		2	2	2	2	2	2	2	2
Cap, veh/h	383	2160	106		60	2173	668	108	161	62	248	484
Arrive On Green	0.22	0.63	0.63		0.02	0.43	0.43	0.06	0.13	0.13	0.07	0.14
Sat Flow, veh/h	1774	3435	168		3442	5085	1563	1774	1284	492	3442	3539
Grp Volume(v), veh/h	533	347	360		33	1388	1175	87	0	195	309	11
Grp Sat Flow(s),veh/h/ln	1774	1770	1833		1721	1695	1563	1774	0	1776	1721	1770
Q Serve(g_s), s	28.5	11.9	12.0		1.3	28.4	56.4	6.4	0.0	14.2	9.5	0.4
Cycle Q Clear(g_c), s	28.5	11.9	12.0		1.3	28.4	56.4	6.4	0.0	14.2	9.5	0.4
Prop In Lane	1.00		0.09		1.00		1.00	1.00		0.28	1.00	
Lane Grp Cap(c), veh/h	383	1113	1153		60	2173	668	108	0	223	248	484
V/C Ratio(X)	1.39	0.31	0.31		0.55	0.64	1.76	0.80	0.00	0.87	1.25	0.02
Avail Cap(c_a), veh/h	383	1113	1153		138	2173	668	113	0	471	248	960
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	11.3	11.3		64.3	29.8	37.8	61.2	0.0	56.7	61.2	49.3
Incr Delay (d2), s/veh	191.5	0.1	0.1		3.0	0.5	348.0	29.6	0.0	4.2	140.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	34.3	5.8	6.0		0.6	13.3	88.8	4.0	0.0	7.2	9.3	0.2
LnGrp Delay(d),s/veh	243.2	11.4	11.4		67.3	30.3	385.8	90.8	0.0	60.8	201.6	49.3
LnGrp LOS	F	B	B		E	C	F	F		E	F	D
Approach Vol, veh/h		1240				2596			282			418
Approach Delay, s/veh		111.0				191.6			70.1			162.8
Approach LOS		F				F			E			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.0	61.3	13.5	23.1	7.4	87.9	15.0	21.7
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	28.5	* 56	8.4	* 36	* 5.3	* 80	9.5	* 35
Max Q Clear Time (g_c+I1), s	30.5	58.4	8.4	9.5	3.3	14.0	11.5	16.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.4	0.0	6.1	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	159.4
HCM 2010 LOS	F

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	90
Future Volume (veh/h)	90
Number	14
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	98
Adj No. of Lanes	1
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	216
Arrive On Green	0.14
Sat Flow, veh/h	1583
Grp Volume(v), veh/h	98
Grp Sat Flow(s),veh/h/ln	1583
Q Serve(g_s), s	7.5
Cycle Q Clear(g_c), s	7.5
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	216
V/C Ratio(X)	0.45
Avail Cap(c_a), veh/h	429
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	52.4
Incr Delay (d2), s/veh	0.5
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	3.3
LnGrp Delay(d),s/veh	53.0
LnGrp LOS	D
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	332	282	130	1353	263	1025	2276	160	52	810	170
Future Volume (veh/h)	270	332	282	130	1353	263	1025	2276	160	52	810	170
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	293	361	307	141	1471	286	1114	2474	174	57	880	185
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	228	1601	499	187	1540	480	733	2174	668	94	1229	383
Arrive On Green	0.07	0.31	0.31	0.05	0.30	0.30	0.21	0.43	0.43	0.03	0.24	0.24
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1564	3442	5085	1583
Grp Volume(v), veh/h	293	361	307	141	1471	286	1114	2474	174	57	880	185
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1564	1721	1695	1583
Q Serve(g_s), s	9.5	7.5	23.6	5.8	40.6	22.0	30.5	61.2	10.3	2.3	22.7	14.4
Cycle Q Clear(g_c), s	9.5	7.5	23.6	5.8	40.6	22.0	30.5	61.2	10.3	2.3	22.7	14.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	228	1601	499	187	1540	480	733	2174	668	94	1229	383
V/C Ratio(X)	1.28	0.23	0.62	0.75	0.96	0.60	1.52	1.14	0.26	0.61	0.72	0.48
Avail Cap(c_a), veh/h	228	1601	499	274	1570	489	733	2174	668	120	1265	394
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.8	36.2	41.7	66.7	48.9	42.5	56.3	41.0	26.4	68.9	49.8	46.6
Incr Delay (d2), s/veh	156.4	0.0	1.7	3.1	13.3	1.3	240.6	68.3	0.1	2.4	1.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	3.5	10.6	2.8	21.0	9.8	39.0	42.3	4.5	1.1	10.9	6.3
LnGrp Delay(d),s/veh	223.2	36.2	43.4	69.8	62.2	43.8	296.9	109.3	26.5	71.2	51.4	47.0
LnGrp LOS	F	D	D	E	E	D	F	F	C	E	D	D
Approach Vol, veh/h		961			1898			3762			1122	
Approach Delay, s/veh		95.5			60.0			161.0			51.7	
Approach LOS		F			E			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	68.6	13.3	51.9	36.0	42.0	15.0	50.2
Change Period (Y+Rc), s	5.5	* 7.4	5.5	* 6.8	5.5	* 7.4	5.5	6.8
Max Green Setting (Gmax), s	5.0	* 61	11.4	* 42	30.5	* 36	9.5	44.2
Max Q Clear Time (g_c+I1), s	4.3	63.2	7.8	25.6	32.5	24.7	11.5	42.6
Green Ext Time (p_c), s	0.0	0.0	0.0	4.4	0.0	7.2	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	112.3
HCM 2010 LOS	F

Notes

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	380	120	410	1237	824	160
Future Volume (veh/h)	380	120	410	1237	824	160
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	272	282	446	1345	896	174
Adj No. of Lanes	1	1	2	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	370	337	572	2078	1181	528
Arrive On Green	0.21	0.21	0.17	0.59	0.33	0.33
Sat Flow, veh/h	1774	1615	3442	3632	3632	1583
Grp Volume(v), veh/h	272	282	446	1345	896	174
Grp Sat Flow(s),veh/h/ln	1774	1615	1721	1770	1770	1583
Q Serve(g_s), s	7.6	8.8	6.6	13.4	11.9	4.3
Cycle Q Clear(g_c), s	7.6	8.8	6.6	13.4	11.9	4.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	370	337	572	2078	1181	528
V/C Ratio(X)	0.73	0.84	0.78	0.65	0.76	0.33
Avail Cap(c_a), veh/h	597	544	1302	3127	1460	653
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.5	20.1	21.1	7.3	15.7	13.2
Incr Delay (d2), s/veh	1.1	3.0	0.9	0.1	1.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	4.2	3.2	6.4	5.9	1.9
LnGrp Delay(d),s/veh	20.6	23.1	22.0	7.4	17.1	13.3
LnGrp LOS	C	C	C	A	B	B
Approach Vol, veh/h	554			1791	1070	
Approach Delay, s/veh	21.9			11.0	16.5	
Approach LOS	C			B	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	13.4	23.7				37.1		15.7
Change Period (Y+Rc), s	* 4.6	* 6.1				* 6.1		4.7
Max Green Setting (Gmax), s	* 20	* 22				* 47		17.8
Max Q Clear Time (g_c+I1), s	8.6	13.9				15.4		10.8
Green Ext Time (p_c), s	0.2	3.7				5.7		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	14.5
HCM 2010 LOS	B

Notes

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	10	10	630	350	400	740	60	380	165	580	60	182
Future Volume (veh/h)	10	10	630	350	400	740	60	380	165	580	60	182
Number		1	6	16	5	2	12	7	4	14	3	8
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00	1.00		0.96	1.00		0.99	1.00	
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863
Adj Flow Rate, veh/h		11	685	0	435	804	65	335	462	444	65	198
Adj No. of Lanes		1	2	1	2	2	0	1	1	1	0	2
Peak Hour Factor		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h		14	807	361	492	1197	97	516	541	454	94	294
Arrive On Green		0.01	0.23	0.00	0.14	0.36	0.36	0.29	0.29	0.29	0.14	0.14
Sat Flow, veh/h		1774	3539	1583	3442	3305	267	1774	1863	1560	654	2040
Grp Volume(v), veh/h		11	685	0	435	430	439	335	462	444	182	0
Grp Sat Flow(s),veh/h/ln		1774	1770	1583	1721	1770	1803	1774	1863	1560	1830	0
Q Serve(g_s), s		0.7	19.6	0.0	13.1	21.7	21.7	17.5	24.8	29.9	10.0	0.0
Cycle Q Clear(g_c), s		0.7	19.6	0.0	13.1	21.7	21.7	17.5	24.8	29.9	10.0	0.0
Prop In Lane		1.00		1.00	1.00		0.15	1.00		1.00	0.36	
Lane Grp Cap(c), veh/h		14	807	361	492	641	653	516	541	454	264	0
V/C Ratio(X)		0.79	0.85	0.00	0.88	0.67	0.67	0.65	0.85	0.98	0.69	0.00
Avail Cap(c_a), veh/h		72	905	405	503	641	653	516	541	454	449	0
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh		52.5	39.2	0.0	44.6	28.5	28.5	32.9	35.5	37.3	43.1	0.0
Incr Delay (d2), s/veh		29.9	6.3	0.0	16.0	2.2	2.2	2.3	12.0	36.6	1.2	0.0
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		0.4	10.3	0.0	7.3	11.0	11.2	8.9	14.5	17.5	5.1	0.0
LnGrp Delay(d),s/veh		82.4	45.5	0.0	60.6	30.7	30.7	35.1	47.4	73.8	44.3	0.0
LnGrp LOS		F	D		E	C	C	D	D	E	D	
Approach Vol, veh/h			696			1304			1241			339
Approach Delay, s/veh			46.1			40.7			53.6			44.1
Approach LOS			D			D			D			D

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.1	43.1		36.0	20.3	28.9		20.8
Change Period (Y+Rc), s	* 5.3	* 4.7		* 5.2	* 5.2	* 4.7		5.5
Max Green Setting (Gmax), s	* 4.3	* 38		* 31	* 16	* 27		26.0
Max Q Clear Time (g_c+I1), s	2.7	23.7		31.9	15.1	21.6		12.0
Green Ext Time (p_c), s	0.0	2.6		0.0	0.0	1.7		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	46.5
HCM 2010 LOS	D

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	70
Future Volume (veh/h)	70
Number	18
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.95
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1900
Adj Flow Rate, veh/h	76
Adj No. of Lanes	0
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	117
Arrive On Green	0.14
Sat Flow, veh/h	810
Grp Volume(v), veh/h	157
Grp Sat Flow(s),veh/h/ln	1674
Q Serve(g_s), s	9.4
Cycle Q Clear(g_c), s	9.4
Prop In Lane	0.48
Lane Grp Cap(c), veh/h	241
V/C Ratio(X)	0.65
Avail Cap(c_a), veh/h	411
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	42.8
Incr Delay (d2), s/veh	1.1
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	4.4
LnGrp Delay(d),s/veh	44.0
LnGrp LOS	D
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	1180	0	350	0	1025	706	0	1122	150
Future Volume (veh/h)	0	0	0	1180	0	350	0	1025	706	0	1122	150
Number				3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h				832	632	380	0	1114	0	0	1220	0
Adj No. of Lanes				1	1	0	0	3	1	0	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				991	608	365	0	1466	456	0	1466	456
Arrive On Green				0.56	0.56	0.56	0.00	0.29	0.00	0.00	0.29	0.00
Sat Flow, veh/h				1774	1088	654	0	5253	1583	0	5253	1583
Grp Volume(v), veh/h				832	0	1012	0	1114	0	0	1220	0
Grp Sat Flow(s),veh/h/ln				1774	0	1742	0	1695	1583	0	1695	1583
Q Serve(g_s), s				25.2	0.0	36.1	0.0	12.9	0.0	0.0	14.5	0.0
Cycle Q Clear(g_c), s				25.2	0.0	36.1	0.0	12.9	0.0	0.0	14.5	0.0
Prop In Lane				1.00		0.38	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				991	0	973	0	1466	456	0	1466	456
V/C Ratio(X)				0.84	0.00	1.04	0.00	0.76	0.00	0.00	0.83	0.00
Avail Cap(c_a), veh/h				991	0	973	0	1495	465	0	1550	483
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				11.9	0.0	14.3	0.0	21.0	0.0	0.0	21.5	0.0
Incr Delay (d2), s/veh				6.2	0.0	39.8	0.0	2.0	0.0	0.0	3.5	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				13.7	0.0	27.8	0.0	6.3	0.0	0.0	7.3	0.0
LnGrp Delay(d),s/veh				18.0	0.0	54.1	0.0	23.0	0.0	0.0	25.1	0.0
LnGrp LOS				B		F		C			C	
Approach Vol, veh/h					1844			1114			1220	
Approach Delay, s/veh					37.8			23.0			25.1	
Approach LOS					D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		23.6				23.6		41.0
Change Period (Y+Rc), s		* 5				5.0		4.9
Max Green Setting (Gmax), s		* 20				19.0		36.1
Max Q Clear Time (g_c+I1), s		16.5				14.9		38.1
Green Ext Time (p_c), s		2.1				2.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	30.1
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	280	0	1234	0	0	0	0	1341	490	0	1722	420
Future Volume (veh/h)	280	0	1234	0	0	0	0	1341	490	0	1722	420
Number	7	4	14				1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	203	0	1450				0	1458	0	0	1872	0
Adj No. of Lanes	1	0	2				0	3	0	0	3	1
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	817	0	1457				0	2038	0	0	2038	634
Arrive On Green	0.46	0.00	0.46				0.00	0.40	0.00	0.00	0.40	0.00
Sat Flow, veh/h	1774	0	3163				0	5421	0	0	5253	1583
Grp Volume(v), veh/h	203	0	1450				0	1458	0	0	1872	0
Grp Sat Flow(s),veh/h/ln	1774	0	1581				0	1695	0	0	1695	1583
Q Serve(g_s), s	5.2	0.0	34.3				0.0	18.1	0.0	0.0	26.2	0.0
Cycle Q Clear(g_c), s	5.2	0.0	34.3				0.0	18.1	0.0	0.0	26.2	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	817	0	1457				0	2038	0	0	2038	634
V/C Ratio(X)	0.25	0.00	1.00				0.00	0.72	0.00	0.00	0.92	0.00
Avail Cap(c_a), veh/h	817	0	1457				0	2038	0	0	2066	643
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	12.3	0.0	20.2				0.0	18.9	0.0	0.0	21.3	0.0
Incr Delay (d2), s/veh	0.1	0.0	22.3				0.0	1.1	0.0	0.0	6.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	19.2				0.0	8.6	0.0	0.0	13.4	0.0
LnGrp Delay(d),s/veh	12.4	0.0	42.5				0.0	20.0	0.0	0.0	28.3	0.0
LnGrp LOS	B		D					B			C	
Approach Vol, veh/h		1653						1458			1872	
Approach Delay, s/veh		38.8						20.0			28.3	
Approach LOS		D						B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		35.1		40.0		35.1		
Change Period (Y+Rc), s		* 5		* 5.4		5.0		
Max Green Setting (Gmax), s		* 31		* 35		30.0		
Max Q Clear Time (g_c+I1), s		28.2		36.3		20.1		
Green Ext Time (p_c), s		1.9		0.0		6.8		

Intersection Summary	
HCM 2010 Ctrl Delay	29.3
HCM 2010 LOS	C

Notes

Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (veh/h)	1036	750	20	10	711	270	10
Future Volume (veh/h)	1036	750	20	10	711	270	10
Number	6	16		5	2	3	18
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900		1863	1863	1863	1863
Adj Flow Rate, veh/h	1126	0		11	773	293	11
Adj No. of Lanes	3	0		1	3	2	1
Peak Hour Factor	0.92	0.92		0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2		2	2	2	2
Cap, veh/h	2949	0		15	3539	430	198
Arrive On Green	0.58	0.00		0.01	0.70	0.13	0.13
Sat Flow, veh/h	5421	0		1774	5253	3442	1583
Grp Volume(v), veh/h	1126	0		11	773	293	11
Grp Sat Flow(s),veh/h/ln	1695	0		1774	1695	1721	1583
Q Serve(g_s), s	5.7	0.0		0.3	2.6	3.9	0.3
Cycle Q Clear(g_c), s	5.7	0.0		0.3	2.6	3.9	0.3
Prop In Lane		0.00		1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2949	0		15	3539	430	198
V/C Ratio(X)	0.38	0.00		0.73	0.22	0.68	0.06
Avail Cap(c_a), veh/h	3310	0		243	4553	2103	967
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	5.4	0.0		23.5	2.6	19.9	18.3
Incr Delay (d2), s/veh	0.2	0.0		21.5	0.1	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0		0.2	1.2	1.9	0.1
LnGrp Delay(d),s/veh	5.5	0.0		45.0	2.7	20.6	18.3
LnGrp LOS	A			D	A	C	B
Approach Vol, veh/h	1126				784	304	
Approach Delay, s/veh	5.5				3.2	20.5	
Approach LOS	A				A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		38.0			5.5	32.5		9.4
Change Period (Y+Rc), s		5.0			* 5.1	5.0		3.5
Max Green Setting (Gmax), s		42.5			* 6.5	30.9		29.0
Max Q Clear Time (g_c+I1), s		4.6			2.3	7.7		5.9
Green Ext Time (p_c), s		28.4			0.0	19.1		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	6.8
HCM 2010 LOS	A

Notes

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (veh/h)	10	220	750	224	20	200	840	70	20	450	1406	220
Future Volume (veh/h)	10	220	750	224	20	200	840	70	20	450	1406	220
Number		3	8	18		7	4	14		1	6	16
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.98		1.00		0.98		1.00		1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1900		1863	1863	1863		1863	1863	1863
Adj Flow Rate, veh/h		239	815	243		217	913	76		489	1528	239
Adj No. of Lanes		2	3	0		2	3	1		2	3	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2
Cap, veh/h		272	982	291		281	1301	398		551	1781	553
Arrive On Green		0.08	0.25	0.25		0.08	0.26	0.26		0.16	0.35	0.35
Sat Flow, veh/h		3442	3881	1148		3442	5085	1558		3442	5085	1579
Grp Volume(v), veh/h		239	711	347		217	913	76		489	1528	239
Grp Sat Flow(s),veh/h/ln		1721	1695	1639		1721	1695	1558		1721	1695	1579
Q Serve(g_s), s		6.9	19.9	20.1		6.2	16.3	3.8		13.9	28.0	11.6
Cycle Q Clear(g_c), s		6.9	19.9	20.1		6.2	16.3	3.8		13.9	28.0	11.6
Prop In Lane		1.00		0.70		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h		272	858	415		281	1301	398		551	1781	553
V/C Ratio(X)		0.88	0.83	0.84		0.77	0.70	0.19		0.89	0.86	0.43
Avail Cap(c_a), veh/h		272	968	468		285	1473	451		601	1781	553
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		45.7	35.3	35.4		45.1	33.8	29.2		41.2	30.2	24.9
Incr Delay (d2), s/veh		25.7	4.9	10.2		11.0	1.0	0.1		13.4	4.2	0.2
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		4.3	9.9	10.2		3.4	7.7	1.6		7.6	13.7	5.1
LnGrp Delay(d),s/veh		71.4	40.2	45.6		56.1	34.8	29.2		54.6	34.5	25.1
LnGrp LOS		E	D	D		E	C	C		D	C	C
Approach Vol, veh/h			1297				1206				2256	
Approach Delay, s/veh			47.4				38.3				37.8	
Approach LOS			D				D				D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.5	33.8	13.4	31.4	14.7	40.7	13.7	31.1
Change Period (Y+Rc), s	5.5	* 5.6	5.5	5.8	5.5	* 5.6	5.5	5.8
Max Green Setting (Gmax), s	17.5	* 28	7.9	29.0	10.8	* 35	8.3	28.6
Max Q Clear Time (g_c+I1), s	15.9	30.2	8.9	18.3	9.1	30.0	8.2	22.1
Green Ext Time (p_c), s	0.1	0.0	0.0	4.0	0.0	3.3	0.0	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	46.1
HCM 2010 LOS	D

Notes

Movement	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (veh/h)	230	498	450
Future Volume (veh/h)	230	498	450
Number	5	2	12
Initial Q (Qb), veh	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900
Adj Flow Rate, veh/h	250	541	489
Adj No. of Lanes	2	3	0
Peak Hour Factor	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2
Cap, veh/h	315	955	440
Arrive On Green	0.09	0.28	0.28
Sat Flow, veh/h	3442	3390	1561
Grp Volume(v), veh/h	250	541	489
Grp Sat Flow(s),veh/h/ln	1721	1695	1561
Q Serve(g_s), s	7.1	13.7	28.2
Cycle Q Clear(g_c), s	7.1	13.7	28.2
Prop In Lane	1.00		1.00
Lane Grp Cap(c), veh/h	315	955	440
V/C Ratio(X)	0.79	0.57	1.11
Avail Cap(c_a), veh/h	371	955	440
HCM Platoon Ratio	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	30.7	36.0
Incr Delay (d2), s/veh	8.1	0.5	77.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	6.5	21.5
LnGrp Delay(d),s/veh	52.7	31.2	113.0
LnGrp LOS	D	C	F
Approach Vol, veh/h		1280	
Approach Delay, s/veh		66.7	
Approach LOS		E	
Timer			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	110	10	130	140	620	50	1646	140	720	1798	750
Future Volume (veh/h)	30	110	10	130	140	620	50	1646	140	720	1798	750
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	33	120	11	141	152	674	54	1789	152	783	1954	815
Adj No. of Lanes	2	3	0	2	1	2	2	3	0	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	59	740	66	190	358	1349	90	1846	156	823	3050	934
Arrive On Green	0.02	0.16	0.16	0.05	0.19	0.19	0.03	0.39	0.39	0.24	0.60	0.60
Sat Flow, veh/h	3442	4740	422	3548	1863	3077	3442	4774	404	3442	5085	1557
Grp Volume(v), veh/h	33	85	46	141	152	674	54	1269	672	783	1954	815
Grp Sat Flow(s),veh/h/ln	1721	1695	1772	1774	1863	1538	1721	1695	1788	1721	1695	1557
Q Serve(g_s), s	1.3	3.0	3.1	5.4	9.9	22.0	2.1	50.6	51.0	30.9	34.5	60.7
Cycle Q Clear(g_c), s	1.3	3.0	3.1	5.4	9.9	22.0	2.1	50.6	51.0	30.9	34.5	60.7
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	59	529	277	190	358	1349	90	1311	691	823	3050	934
V/C Ratio(X)	0.56	0.16	0.17	0.74	0.42	0.50	0.60	0.97	0.97	0.95	0.64	0.87
Avail Cap(c_a), veh/h	132	688	360	190	413	1440	122	1327	700	836	3050	934
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.3	50.4	50.4	64.4	49.0	28.6	66.5	41.5	41.6	51.7	18.0	23.2
Incr Delay (d2), s/veh	3.0	0.1	0.1	13.0	0.3	0.1	2.3	17.3	26.8	19.8	0.4	8.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.4	1.5	3.0	5.1	9.3	1.0	26.8	30.3	16.9	16.2	28.1
LnGrp Delay(d),s/veh	70.3	50.4	50.5	77.3	49.3	28.7	68.8	58.7	68.4	71.5	18.3	32.0
LnGrp LOS	E	D	D	E	D	C	E	E	E	E	B	C
Approach Vol, veh/h		164			967			1995			3552	
Approach Delay, s/veh		54.5			39.0			62.3			33.2	
Approach LOS		D			D			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	88.4	7.9	32.5	38.5	59.1	12.9	27.5
Change Period (Y+Rc), s	5.5	* 5.7	5.5	* 6	5.5	* 5.7	5.5	* 6
Max Green Setting (Gmax), s	4.9	* 82	5.3	* 31	33.5	* 54	7.4	* 28
Max Q Clear Time (g_c+I1), s	4.1	62.7	3.3	24.0	32.9	53.0	7.4	5.1
Green Ext Time (p_c), s	0.0	13.2	0.0	0.9	0.1	0.4	0.0	1.1

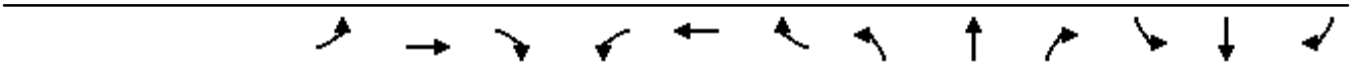
Intersection Summary	
HCM 2010 Ctrl Delay	43.2
HCM 2010 LOS	D

Notes

Movement	EBL2	EBL	EBT	EBR	WBR	WBR2	NBT	NBR	NBR2	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	450	10	910	1324	170	50	1436	710	10	1894	220
Future Volume (vph)	450	10	910	1324	170	50	1436	710	10	1894	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8	6.8	6.8	4.5		4.6			4.6	4.0
Lane Util. Factor		0.91	0.86	0.91	0.88		0.86			0.91	1.00
Frpb, ped/bikes		1.00	0.99	0.98	1.00		0.99			1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt		1.00	0.94	0.85	0.85		0.95			1.00	0.85
Flt Protected		0.95	1.00	1.00	1.00		1.00			1.00	1.00
Satd. Flow (prot)		1610	2989	1418	2787		6039			5085	1545
Flt Permitted		0.95	1.00	1.00	1.00		1.00			1.00	1.00
Satd. Flow (perm)		1610	2989	1418	2787		6039			5085	1545
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	489	11	989	1439	185	54	1561	772	11	2059	239
RTOR Reduction (vph)	0	0	1	30	72	0	1	0	0	0	0
Lane Group Flow (vph)	0	499	1665	733	167	0	2343	0	0	2059	239
Confl. Peds. (#/hr)	6	6		6	3	3		3	3		6
Confl. Bikes (#/hr)								2	2		3
Turn Type	Split	Split	NA	Perm	Prot		NA			NA	Free
Protected Phases	4	4	4		5		6			2	
Permitted Phases				4							Free
Actuated Green, G (s)		55.2	55.2	55.2	6.5		42.4			53.4	120.0
Effective Green, g (s)		55.2	55.2	55.2	6.5		42.4			53.4	120.0
Actuated g/C Ratio		0.46	0.46	0.46	0.05		0.35			0.44	1.00
Clearance Time (s)		6.8	6.8	6.8	4.5		4.6			4.6	
Vehicle Extension (s)		1.0	1.0	1.0	3.0		1.0			1.0	
Lane Grp Cap (vph)		740	1374	652	150		2133			2262	1545
v/s Ratio Prot		0.31	c0.56		0.06		c0.39			c0.40	
v/s Ratio Perm				0.52							0.15
v/c Ratio		0.67	1.21	1.12	1.11		1.39dr			0.91	0.15
Uniform Delay, d1		25.4	32.4	32.4	56.8		38.8			31.1	0.0
Progression Factor		1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		1.9	102.3	74.8	107.4		52.3			5.9	0.2
Delay (s)		27.3	134.7	107.2	164.1		91.1			37.0	0.2
Level of Service		C	F	F	F		F			D	A
Approach Delay (s)			109.2				91.1			33.1	
Approach LOS			F				F			C	

Intersection Summary			
HCM 2000 Control Delay	83.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.9
Intersection Capacity Utilization	101.4%	ICU Level of Service	G
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	1210	0	170	0	860	866	0	1154	480
Future Volume (veh/h)	0	0	0	1210	0	170	0	860	866	0	1154	480
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h				1315	0	185	0	935	0	0	1254	0
Adj No. of Lanes				2	0	1	0	3	2	0	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				1603	0	738	0	1733	950	0	1733	540
Arrive On Green				0.47	0.00	0.47	0.00	0.34	0.00	0.00	0.34	0.00
Sat Flow, veh/h				3442	0	1583	0	5253	2787	0	5253	1583
Grp Volume(v), veh/h				1315	0	185	0	935	0	0	1254	0
Grp Sat Flow(s),veh/h/ln				1721	0	1583	0	1695	1393	0	1695	1583
Q Serve(g_s), s				15.6	0.0	3.3	0.0	7.0	0.0	0.0	10.2	0.0
Cycle Q Clear(g_c), s				15.6	0.0	3.3	0.0	7.0	0.0	0.0	10.2	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				1603	0	738	0	1733	950	0	1733	540
V/C Ratio(X)				0.82	0.00	0.25	0.00	0.54	0.00	0.00	0.72	0.00
Avail Cap(c_a), veh/h				1937	0	891	0	2095	1148	0	2095	652
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				10.9	0.0	7.6	0.0	12.5	0.0	0.0	13.6	0.0
Incr Delay (d2), s/veh				2.5	0.0	0.2	0.0	0.1	0.0	0.0	0.7	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.9	0.0	1.5	0.0	3.2	0.0	0.0	4.8	0.0
LnGrp Delay(d),s/veh				13.3	0.0	7.8	0.0	12.6	0.0	0.0	14.3	0.0
LnGrp LOS				B		A		B			B	
Approach Vol, veh/h					1500			935			1254	
Approach Delay, s/veh					12.7			12.6			14.3	
Approach LOS					B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		20.6				20.6		26.4
Change Period (Y+Rc), s		4.6				4.6		4.5
Max Green Setting (Gmax), s		19.4				19.4		26.5
Max Q Clear Time (g_c+I1), s		9.0				12.2		17.6
Green Ext Time (p_c), s		4.6				3.7		4.4

Intersection Summary	
HCM 2010 Ctrl Delay	13.2
HCM 2010 LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (veh/h)	50	240	340	206	10	250	1090	180	40	306	1581	140
Future Volume (veh/h)	50	240	340	206	10	250	1090	180	40	306	1581	140
Number		3	8	18		7	4	14		1	6	16
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.98		1.00		1.00		1.00		0.99
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1676	1676	1676		1676	1676	1676		1676	1676	1676
Adj Flow Rate, veh/h		261	370	224		272	1185	196		333	1718	152
Adj No. of Lanes		2	2	1		2	3	1		2	3	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2
Cap, veh/h		283	831	365		283	1194	370		310	1974	606
Arrive On Green		0.09	0.26	0.26		0.09	0.26	0.26		0.10	0.43	0.43
Sat Flow, veh/h		3097	3185	1401		3097	4577	1420		3097	4577	1405
Grp Volume(v), veh/h		261	370	224		272	1185	196		333	1718	152
Grp Sat Flow(s),veh/h/ln		1549	1593	1401		1549	1526	1420		1549	1526	1405
Q Serve(g_s), s		9.6	11.2	16.2		10.1	29.7	13.6		11.5	39.3	7.9
Cycle Q Clear(g_c), s		9.6	11.2	16.2		10.1	29.7	13.6		11.5	39.3	7.9
Prop In Lane		1.00		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h		283	831	365		283	1194	370		310	1974	606
V/C Ratio(X)		0.92	0.45	0.61		0.96	0.99	0.53		1.08	0.87	0.25
Avail Cap(c_a), veh/h		283	831	365		283	1194	370		310	1974	606
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		51.8	35.5	37.4		52.1	42.4	36.4		51.8	29.8	20.8
Incr Delay (d2), s/veh		33.3	0.8	4.3		42.7	24.3	4.1		72.5	4.8	0.4
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		5.4	5.0	6.7		6.0	15.2	5.8		8.0	17.4	3.1
LnGrp Delay(d),s/veh		85.2	36.3	41.7		94.8	66.7	40.5		124.3	34.6	21.3
LnGrp LOS		F	D	D		F	E	D		F	C	C
Approach Vol, veh/h			855				1653				2203	
Approach Delay, s/veh			52.6				68.2				47.2	
Approach LOS			D				E				D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	46.0	16.0	36.0	7.6	55.4	16.0	36.0
Change Period (Y+Rc), s	5.5	* 5.8	5.5	6.0	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	11.5	* 40	10.5	30.0	4.0	* 48	10.5	30.0
Max Q Clear Time (g_c+I1), s	13.5	42.2	11.6	31.7	3.2	41.3	12.1	18.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	6.6	0.0	10.9

Intersection Summary	
HCM 2010 Ctrl Delay	66.6
HCM 2010 LOS	E

Notes

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Volume (veh/h)	20	30	920	600
Future Volume (veh/h)	20	30	920	600
Number		5	2	12
Initial Q (Qb), veh		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.98
Parking Bus, Adj		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1676	1676	1676
Adj Flow Rate, veh/h		33	1000	652
Adj No. of Lanes		2	3	1
Peak Hour Factor		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2
Cap, veh/h		56	1600	490
Arrive On Green		0.02	0.35	0.35
Sat Flow, veh/h		3097	4577	1402
Grp Volume(v), veh/h		33	1000	652
Grp Sat Flow(s),veh/h/ln		1549	1526	1402
Q Serve(g_s), s		1.2	20.9	40.2
Cycle Q Clear(g_c), s		1.2	20.9	40.2
Prop In Lane		1.00		1.00
Lane Grp Cap(c), veh/h		56	1600	490
V/C Ratio(X)		0.58	0.63	1.33
Avail Cap(c_a), veh/h		108	1600	490
HCM Platoon Ratio		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00
Uniform Delay (d), s/veh		56.0	31.1	37.4
Incr Delay (d2), s/veh		3.5	1.1	162.1
Initial Q Delay(d3),s/veh		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		0.6	9.0	37.6
LnGrp Delay(d),s/veh		59.5	32.2	199.5
LnGrp LOS		E	C	F
Approach Vol, veh/h			1685	
Approach Delay, s/veh			97.5	
Approach LOS			F	
Timer				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	400	170	20	140	430	140	30	1641	120	170	2016	450
Future Volume (veh/h)	400	170	20	140	430	140	30	1641	120	170	2016	450
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	435	185	22	152	467	152	33	1784	130	185	2191	489
Adj No. of Lanes	2	2	1	2	2	1	2	4	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	474	1022	451	206	779	320	60	2594	639	237	2321	715
Arrive On Green	0.14	0.29	0.29	0.06	0.21	0.21	0.02	0.40	0.40	0.07	0.46	0.46
Sat Flow, veh/h	3442	3539	1562	3548	3725	1529	3442	6408	1579	3442	5085	1568
Grp Volume(v), veh/h	435	185	22	152	467	152	33	1784	130	185	2191	489
Grp Sat Flow(s),veh/h/ln	1721	1770	1562	1774	1863	1529	1721	1602	1579	1721	1695	1568
Q Serve(g_s), s	15.8	5.0	1.3	5.4	14.4	11.1	1.2	29.2	6.8	6.7	52.3	31.3
Cycle Q Clear(g_c), s	15.8	5.0	1.3	5.4	14.4	11.1	1.2	29.2	6.8	6.7	52.3	31.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	474	1022	451	206	779	320	60	2594	639	237	2321	715
V/C Ratio(X)	0.92	0.18	0.05	0.74	0.60	0.48	0.55	0.69	0.20	0.78	0.94	0.68
Avail Cap(c_a), veh/h	474	1075	475	307	938	385	108	2594	639	341	2358	727
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.1	33.9	32.6	58.9	45.4	44.1	61.9	31.2	24.5	58.2	33.0	27.3
Incr Delay (d2), s/veh	22.4	0.1	0.1	2.0	1.3	1.9	4.8	0.7	0.1	4.1	8.9	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	2.5	0.6	2.7	7.5	4.8	0.6	13.0	3.0	3.3	26.3	14.1
LnGrp Delay(d),s/veh	76.4	34.0	32.6	60.9	46.7	46.0	66.7	31.9	24.6	62.3	41.9	30.7
LnGrp LOS	E	C	C	E	D	D	E	C	C	E	D	C
Approach Vol, veh/h		642			771			1947			2865	
Approach Delay, s/veh		62.7			49.4			32.0			41.3	
Approach LOS		E			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	63.8	23.0	32.6	14.3	57.2	12.9	42.7
Change Period (Y+Rc), s	5.5	* 5.8	5.5	6.0	5.5	* 5.8	5.5	* 6
Max Green Setting (Gmax), s	4.0	* 59	17.5	32.0	12.6	* 50	11.0	* 39
Max Q Clear Time (g_c+I1), s	3.2	54.3	17.8	16.4	8.7	31.2	7.4	7.0
Green Ext Time (p_c), s	0.0	3.7	0.0	6.6	0.0	18.8	0.0	9.1

Intersection Summary	
HCM 2010 Ctrl Delay	41.6
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1330	0	670	0	0	0	0	1811	500	0	1916	440
Future Volume (veh/h)	1330	0	670	0	0	0	0	1811	500	0	1916	440
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	1446	0	728				0	1968	0	0	2083	0
Adj No. of Lanes	3	0	2				0	4	1	0	3	1
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2				0	2	2	0	2	2
Cap, veh/h	1709	0	952				0	3608	767	0	2706	767
Arrive On Green	0.34	0.00	0.34				0.00	0.48	0.00	0.00	0.48	0.00
Sat Flow, veh/h	5003	0	2787				0	7451	1583	0	5588	1583
Grp Volume(v), veh/h	1446	0	728				0	1968	0	0	2083	0
Grp Sat Flow(s),veh/h/ln	1668	0	1393				0	1863	1583	0	1863	1583
Q Serve(g_s), s	14.1	0.0	12.3				0.0	9.8	0.0	0.0	16.2	0.0
Cycle Q Clear(g_c), s	14.1	0.0	12.3				0.0	9.8	0.0	0.0	16.2	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	1709	0	952				0	3608	767	0	2706	767
V/C Ratio(X)	0.85	0.00	0.76				0.00	0.55	0.00	0.00	0.77	0.00
Avail Cap(c_a), veh/h	1752	0	976				0	3906	830	0	2887	818
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	16.1	0.0	15.5				0.0	9.5	0.0	0.0	11.2	0.0
Incr Delay (d2), s/veh	4.0	0.0	3.6				0.0	0.1	0.0	0.0	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	0.0	5.1				0.0	4.9	0.0	0.0	8.4	0.0
LnGrp Delay(d),s/veh	20.1	0.0	19.1				0.0	9.6	0.0	0.0	12.3	0.0
LnGrp LOS	C		B					A			B	
Approach Vol, veh/h		2174						1968			2083	
Approach Delay, s/veh		19.8						9.6			12.3	
Approach LOS		B						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		30.3		22.5		30.3		
Change Period (Y+Rc), s		* 4.7		4.5		4.7		
Max Green Setting (Gmax), s		* 28		18.5		27.3		
Max Q Clear Time (g_c+I1), s		11.8		16.1		18.2		
Green Ext Time (p_c), s		11.5		1.9		7.4		

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	190	0	400	0	2821	370	0	2196	1670
Future Volume (veh/h)	0	0	0	190	0	400	0	2821	370	0	2196	1670
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h				207	0	435	0	3066	0	0	2387	0
Adj No. of Lanes				2	0	2	0	3	1	0	3	2
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				636	0	515	0	3919	1110	0	3566	1954
Arrive On Green				0.18	0.00	0.18	0.00	0.70	0.00	0.00	0.70	0.00
Sat Flow, veh/h				3442	0	2787	0	5588	1583	0	5253	2787
Grp Volume(v), veh/h				207	0	435	0	3066	0	0	2387	0
Grp Sat Flow(s),veh/h/ln				1721	0	1393	0	1863	1583	0	1695	1393
Q Serve(g_s), s				4.3	0.0	12.6	0.0	30.3	0.0	0.0	22.0	0.0
Cycle Q Clear(g_c), s				4.3	0.0	12.6	0.0	30.3	0.0	0.0	22.0	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				636	0	515	0	3919	1110	0	3566	1954
V/C Ratio(X)				0.33	0.00	0.84	0.00	0.78	0.00	0.00	0.67	0.00
Avail Cap(c_a), veh/h				723	0	585	0	4244	1202	0	3844	2106
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				29.5	0.0	32.8	0.0	8.2	0.0	0.0	7.0	0.0
Incr Delay (d2), s/veh				0.3	0.0	10.0	0.0	0.8	0.0	0.0	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.1	0.0	5.5	0.0	15.6	0.0	0.0	10.3	0.0
LnGrp Delay(d),s/veh				29.8	0.0	42.8	0.0	9.0	0.0	0.0	7.3	0.0
LnGrp LOS				C		D		A			A	
Approach Vol, veh/h					642			3066			2387	
Approach Delay, s/veh					38.6			9.0			7.3	
Approach LOS					D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		63.4				63.4		19.9
Change Period (Y+Rc), s		* 5				5.0		4.5
Max Green Setting (Gmax), s		* 63				63.0		17.5
Max Q Clear Time (g_c+I1), s		32.3				24.0		14.6
Green Ext Time (p_c), s		26.2				31.6		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	11.5
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	120	10	412	30	30	40	30	465	2766	20	40	3354
Future Volume (veh/h)	120	10	412	30	30	40	30	465	2766	20	40	3354
Number	7	4	14	3	8	18		1	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00		1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1900		1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	130	241	294	33	33	43		505	3007	22	43	3646
Adj No. of Lanes	0	1	1	1	1	0		2	3	0	1	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2
Cap, veh/h	144	267	354	114	47	62		299	2596	19	55	2238
Arrive On Green	0.22	0.22	0.22	0.06	0.06	0.06		0.09	0.50	0.50	0.03	0.44
Sat Flow, veh/h	641	1189	1575	1774	733	956		3442	5208	38	1774	5085
Grp Volume(v), veh/h	371	0	294	33	0	76		505	1955	1074	43	3646
Grp Sat Flow(s),veh/h/ln	1831	0	1575	1774	0	1689		1721	1695	1856	1774	1695
Q Serve(g_s), s	22.5	0.0	20.3	2.0	0.0	5.0		9.9	56.9	56.9	2.7	50.2
Cycle Q Clear(g_c), s	22.5	0.0	20.3	2.0	0.0	5.0		9.9	56.9	56.9	2.7	50.2
Prop In Lane	0.35		1.00	1.00		0.57		1.00		0.02	1.00	
Lane Grp Cap(c), veh/h	411	0	354	114	0	109		299	1690	925	55	2238
V/C Ratio(X)	0.90	0.00	0.83	0.29	0.00	0.70		1.69	1.16	1.16	0.78	1.63
Avail Cap(c_a), veh/h	514	0	442	498	0	474		299	1690	925	73	2238
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	0.0	42.2	50.9	0.0	52.3		52.1	28.6	28.6	54.9	31.9
Incr Delay (d2), s/veh	14.8	0.0	8.6	0.5	0.0	3.0		325.0	77.7	84.5	23.2	285.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.0	0.0	9.7	1.0	0.0	2.4		18.2	44.8	50.8	1.7	82.5
LnGrp Delay(d),s/veh	57.8	0.0	50.8	51.4	0.0	55.3		377.1	106.3	113.1	78.1	317.2
LnGrp LOS	E		D	D		E		F	F	F	E	F
Approach Vol, veh/h		665			109				3534			3732
Approach Delay, s/veh		54.7			54.1				147.0			311.0
Approach LOS		D			D				F			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.0	55.1		31.1	8.3	61.8		12.9
Change Period (Y+Rc), s	* 5.1	* 4.9		5.5	* 4.8	* 4.9		5.5
Max Green Setting (Gmax), s	* 9.9	* 50		32.0	* 4.7	* 56		32.0
Max Q Clear Time (g_c+I1), s	11.9	52.2		24.5	4.7	58.9		7.0
Green Ext Time (p_c), s	0.0	0.0		0.7	0.0	0.0		0.1

Intersection Summary			
HCM 2010 Ctrl Delay		214.3	
HCM 2010 LOS		F	

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	40
Future Volume (veh/h)	40
Number	12
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.97
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	43
Adj No. of Lanes	1
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	679
Arrive On Green	0.44
Sat Flow, veh/h	1542
Grp Volume(v), veh/h	43
Grp Sat Flow(s),veh/h/ln	1542
Q Serve(g_s), s	1.8
Cycle Q Clear(g_c), s	1.8
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	679
V/C Ratio(X)	0.06
Avail Cap(c_a), veh/h	679
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	18.4
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	0.8
LnGrp Delay(d),s/veh	18.4
LnGrp LOS	B
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	330	20	10	1797	974	920
Future Volume (veh/h)	330	20	10	1797	974	920
Number	7	14	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	359	22	11	1953	1059	1000
Adj No. of Lanes	2	1	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	463	226	15	2406	2086	1146
Arrive On Green	0.13	0.13	0.01	0.68	0.59	0.59
Sat Flow, veh/h	3442	1583	1774	3632	3632	1583
Grp Volume(v), veh/h	359	22	11	1953	1059	1000
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1770	1770	1583
Q Serve(g_s), s	6.7	0.8	0.4	26.3	11.7	31.6
Cycle Q Clear(g_c), s	6.7	0.8	0.4	26.3	11.7	31.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	463	226	15	2406	2086	1146
V/C Ratio(X)	0.78	0.10	0.75	0.81	0.51	0.87
Avail Cap(c_a), veh/h	1339	629	106	2749	2230	1211
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.9	24.9	33.1	7.6	8.0	6.9
Incr Delay (d2), s/veh	1.1	0.1	24.0	1.5	0.1	6.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.8	0.3	13.0	5.6	20.4
LnGrp Delay(d),s/veh	29.0	25.0	57.0	9.1	8.1	13.5
LnGrp LOS	C	C	E	A	A	B
Approach Vol, veh/h	381			1964	2059	
Approach Delay, s/veh	28.8			9.4	10.7	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	6.1	46.3		14.5		52.3		
Change Period (Y+Rc), s	5.5	* 6.9		5.5		* 6.9		
Max Green Setting (Gmax), s	4.0	* 42		26.0		* 52		
Max Q Clear Time (g_c+I1), s	2.4	33.6		8.7		28.3		
Green Ext Time (p_c), s	0.0	5.7		0.3		10.2		

Intersection Summary	
HCM 2010 Ctrl Delay	11.7
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	871	1236	0	1316	110	50	618
Future Volume (veh/h)	871	1236	0	1316	110	50	618
Number	1	6		2	12	3	18
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863		1863	1863	1863	1863
Adj Flow Rate, veh/h	947	1343		1430	120	54	672
Adj No. of Lanes	2	2		2	1	1	1
Peak Hour Factor	0.92	0.92		0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2		2	2	2	2
Cap, veh/h	964	2488		1313	587	310	277
Arrive On Green	0.28	0.70		0.37	0.37	0.17	0.17
Sat Flow, veh/h	3442	3632		3632	1583	1774	1583
Grp Volume(v), veh/h	947	1343		1430	120	54	672
Grp Sat Flow(s),veh/h/ln	1721	1770		1770	1583	1774	1583
Q Serve(g_s), s	27.3	18.2		37.1	5.2	2.6	17.5
Cycle Q Clear(g_c), s	27.3	18.2		37.1	5.2	2.6	17.5
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	964	2488		1313	587	310	277
V/C Ratio(X)	0.98	0.54		1.09	0.20	0.17	2.43
Avail Cap(c_a), veh/h	964	2488		1313	587	310	277
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	7.1		31.4	21.4	35.1	41.3
Incr Delay (d2), s/veh	24.7	0.1		52.8	0.1	0.1	652.2
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.2	8.8		27.7	2.3	1.3	57.9
LnGrp Delay(d),s/veh	60.4	7.2		84.3	21.5	35.2	693.5
LnGrp LOS	E	A		F	C	D	F
Approach Vol, veh/h		2290		1550		726	
Approach Delay, s/veh		29.2		79.4		644.5	
Approach LOS		C		E		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	33.2	43.8				77.0		23.0
Change Period (Y+Rc), s	* 5.2	* 6.7				* 6.7		5.5
Max Green Setting (Gmax), s	* 28	* 37				* 61		17.5
Max Q Clear Time (g_c+I1), s	29.3	39.1				20.2		19.5
Green Ext Time (p_c), s	0.0	0.0				8.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	144.1
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	50	10	60	360	0	10	0	30	0	0	0
Future Volume (veh/h)	0	50	10	60	360	0	10	0	30	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	54	11	65	391	0	11	0	33	0	0	0
Adj No. of Lanes	1	2	1	1	2	1	1	3	1	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	4	407	182	110	978	438	25	2665	830	4	2085	649
Arrive On Green	0.00	0.11	0.11	0.06	0.28	0.00	0.01	0.00	0.52	0.00	0.00	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	0	54	11	65	391	0	11	0	33	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.0	0.6	0.3	1.6	4.1	0.0	0.3	0.0	0.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.6	0.3	1.6	4.1	0.0	0.3	0.0	0.5	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	4	407	182	110	978	438	25	2665	830	4	2085	649
V/C Ratio(X)	0.00	0.13	0.06	0.59	0.40	0.00	0.43	0.00	0.04	0.00	0.00	0.00
Avail Cap(c_a), veh/h	197	1412	632	216	1451	649	197	2665	830	197	2085	649
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	17.9	17.8	20.6	13.3	0.0	22.1	0.0	5.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.1	5.0	0.3	0.0	11.3	0.0	0.1	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.1	0.9	2.0	0.0	0.2	0.0	0.2	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	18.1	17.9	25.7	13.5	0.0	33.4	0.0	5.3	0.0	0.0	0.0
LnGrp LOS		B	B	C	B		C		A			
Approach Vol, veh/h		65			456			44			0	
Approach Delay, s/veh		18.1			15.3			12.3			0.0	
Approach LOS		B			B			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	28.1	7.3	9.7	5.1	23.0	0.0	17.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.5	5.5	18.0	5.0	18.5	5.0	18.5
Max Q Clear Time (g_c+I1), s	0.0	2.5	3.6	2.6	2.3	0.0	0.0	6.1
Green Ext Time (p_c), s	0.0	0.0	0.0	2.6	0.0	0.0	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	15.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	140	250	0	450	300	330	1156	0	100	842	490
Future Volume (veh/h)	200	140	250	0	450	300	330	1156	0	100	842	490
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	217	152	272	0	489	326	359	1257	0	109	915	533
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	281	1288	576	4	800	358	439	2082	648	197	1724	537
Arrive On Green	0.08	0.36	0.36	0.00	0.23	0.23	0.13	0.41	0.00	0.06	0.34	0.34
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	217	152	272	0	489	326	359	1257	0	109	915	533
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	4.9	2.3	10.5	0.0	9.9	16.0	8.1	15.4	0.0	2.5	11.6	26.7
Cycle Q Clear(g_c), s	4.9	2.3	10.5	0.0	9.9	16.0	8.1	15.4	0.0	2.5	11.6	26.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	281	1288	576	4	800	358	439	2082	648	197	1724	537
V/C Ratio(X)	0.77	0.12	0.47	0.00	0.61	0.91	0.82	0.60	0.00	0.55	0.53	0.99
Avail Cap(c_a), veh/h	281	1288	576	216	800	358	454	2082	648	255	1724	537
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	16.8	19.4	0.0	27.7	30.0	33.8	18.5	0.0	36.6	21.2	26.2
Incr Delay (d2), s/veh	12.5	0.0	0.6	0.0	1.4	26.7	11.0	1.3	0.0	2.4	1.2	37.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	1.1	4.7	0.0	5.0	9.6	4.5	7.5	0.0	1.2	5.6	17.2
LnGrp Delay(d),s/veh	48.3	16.9	20.0	0.0	29.1	56.7	44.8	19.8	0.0	39.0	22.4	63.4
LnGrp LOS	D	B	C		C	E	D	B		D	C	E
Approach Vol, veh/h		641			815			1616			1557	
Approach Delay, s/veh		28.9			40.1			25.3			37.6	
Approach LOS		C			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	37.1	0.0	33.5	14.7	31.5	11.0	22.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.9	31.6	5.0	19.5	10.5	27.0	6.5	18.0
Max Q Clear Time (g_c+I1), s	4.5	17.4	0.0	12.5	10.1	28.7	6.9	18.0
Green Ext Time (p_c), s	0.0	12.1	0.0	3.6	0.1	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	32.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	290	100	30	12	140	10	50	791	75	10	258	240
Future Volume (veh/h)	290	100	30	12	140	10	50	791	75	10	258	240
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	315	109	33	13	152	11	54	860	82	11	280	261
Adj No. of Lanes	1	2	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	369	1130	505	29	237	202	86	1307	585	25	1185	530
Arrive On Green	0.21	0.32	0.32	0.02	0.13	0.13	0.05	0.37	0.37	0.01	0.33	0.33
Sat Flow, veh/h	1774	3539	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	315	109	33	13	152	11	54	860	82	11	280	261
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	10.9	1.4	0.9	0.5	5.0	0.4	1.9	12.9	2.2	0.4	3.7	8.4
Cycle Q Clear(g_c), s	10.9	1.4	0.9	0.5	5.0	0.4	1.9	12.9	2.2	0.4	3.7	8.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	369	1130	505	29	237	202	86	1307	585	25	1185	530
V/C Ratio(X)	0.85	0.10	0.07	0.45	0.64	0.05	0.63	0.66	0.14	0.45	0.24	0.49
Avail Cap(c_a), veh/h	486	1689	756	139	525	446	142	1307	585	139	1185	530
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.4	15.3	15.1	31.2	26.5	24.5	29.9	16.8	13.4	31.3	15.4	16.9
Incr Delay (d2), s/veh	10.9	0.0	0.1	10.8	2.9	0.1	7.4	2.6	0.5	12.2	0.5	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	0.7	0.4	0.3	2.7	0.2	1.1	6.8	1.0	0.3	1.9	4.1
LnGrp Delay(d),s/veh	35.3	15.3	15.2	42.0	29.4	24.6	37.3	19.4	13.9	43.4	15.8	20.2
LnGrp LOS	D	B	B	D	C	C	D	B	B	D	B	C
Approach Vol, veh/h		457			176			996			552	
Approach Delay, s/veh		29.1			30.0			19.9			18.4	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.4	28.1	5.5	24.9	7.6	25.9	17.8	12.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	21.5	5.0	30.5	5.1	21.4	17.5	18.0
Max Q Clear Time (g_c+I1), s	2.4	14.9	2.5	3.4	3.9	10.4	12.9	7.0
Green Ext Time (p_c), s	0.0	4.4	0.0	1.7	0.0	6.5	0.4	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	22.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	220	186	62	830	220	461	392	95	60	156	20
Future Volume (veh/h)	30	220	186	62	830	220	461	392	95	60	156	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	33	239	202	67	902	239	501	426	103	65	170	22
Adj No. of Lanes	2	3	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	1532	477	195	1141	511	663	985	441	192	500	224
Arrive On Green	0.04	0.30	0.30	0.06	0.32	0.32	0.19	0.28	0.28	0.06	0.14	0.14
Sat Flow, veh/h	3442	5085	1583	3442	3539	1583	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	33	239	202	67	902	239	501	426	103	65	170	22
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1770	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	0.5	2.0	6.0	1.1	13.5	7.0	8.0	5.8	2.9	1.1	2.5	0.7
Cycle Q Clear(g_c), s	0.5	2.0	6.0	1.1	13.5	7.0	8.0	5.8	2.9	1.1	2.5	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	122	1532	477	195	1141	511	663	985	441	192	500	224
V/C Ratio(X)	0.27	0.16	0.42	0.34	0.79	0.47	0.76	0.43	0.23	0.34	0.34	0.10
Avail Cap(c_a), veh/h	294	1783	555	294	1241	555	1060	1907	853	294	1120	501
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	15.0	16.4	26.5	18.0	15.8	22.3	17.3	16.3	26.6	22.6	21.9
Incr Delay (d2), s/veh	1.2	0.0	0.6	1.0	3.3	0.7	1.8	0.3	0.3	1.0	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.9	2.7	0.5	7.0	3.1	4.0	2.8	1.3	0.5	1.3	0.3
LnGrp Delay(d),s/veh	28.6	15.0	17.0	27.6	21.3	16.5	24.1	17.6	16.6	27.6	23.0	22.0
LnGrp LOS	C	B	B	C	C	B	C	B	B	C	C	C
Approach Vol, veh/h		474			1208			1030			257	
Approach Delay, s/veh		16.8			20.7			20.6			24.1	
Approach LOS		B			C			C			C	

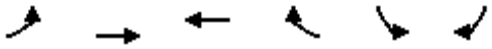
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	20.8	7.8	22.1	15.8	12.8	6.6	23.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	31.5	5.0	20.5	18.0	18.5	5.0	20.5
Max Q Clear Time (g_c+I1), s	3.1	7.8	3.1	8.0	10.0	4.5	2.5	15.5
Green Ext Time (p_c), s	0.0	4.5	0.0	6.6	1.2	3.7	0.0	3.3

Intersection Summary	
HCM 2010 Ctrl Delay	20.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	80	50	40	230	80	140	88	70	40	111	30
Future Volume (veh/h)	20	80	50	40	230	80	140	88	70	40	111	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	22	87	54	43	250	87	152	96	76	43	121	33
Adj No. of Lanes	1	1	1	2	1	1	1	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	46	327	278	152	361	307	192	1416	634	152	1189	532
Arrive On Green	0.03	0.18	0.18	0.04	0.19	0.19	0.11	0.40	0.40	0.04	0.34	0.34
Sat Flow, veh/h	1774	1863	1583	3442	1863	1583	1774	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	22	87	54	43	250	87	152	96	76	43	121	33
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1721	1863	1583	1774	1770	1583	1721	1770	1583
Q Serve(g_s), s	0.7	2.2	1.6	0.6	6.7	2.5	4.5	0.9	1.6	0.6	1.3	0.8
Cycle Q Clear(g_c), s	0.7	2.2	1.6	0.6	6.7	2.5	4.5	0.9	1.6	0.6	1.3	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	46	327	278	152	361	307	192	1416	634	152	1189	532
V/C Ratio(X)	0.48	0.27	0.19	0.28	0.69	0.28	0.79	0.07	0.12	0.28	0.10	0.06
Avail Cap(c_a), veh/h	166	626	532	321	626	532	199	1416	634	321	1189	532
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.7	19.1	18.8	24.8	20.1	18.4	23.3	9.9	10.1	24.8	12.2	12.1
Incr Delay (d2), s/veh	7.4	0.4	0.3	1.0	2.4	0.5	18.7	0.1	0.4	1.0	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.2	0.7	0.3	3.6	1.1	3.2	0.5	0.8	0.3	0.6	0.4
LnGrp Delay(d),s/veh	33.1	19.5	19.2	25.8	22.5	18.9	42.0	10.0	10.5	25.8	12.4	12.3
LnGrp LOS	C	B	B	C	C	B	D	A	B	C	B	B
Approach Vol, veh/h		163			380			324			197	
Approach Delay, s/veh		21.3			22.1			25.1			15.3	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	25.9	6.9	13.9	10.3	22.5	5.9	14.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	6.0	18.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.6	3.6	2.6	4.2	6.5	3.3	2.7	8.7
Green Ext Time (p_c), s	0.0	1.5	0.0	2.1	0.0	1.4	0.0	1.7

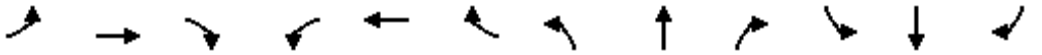
Intersection Summary	
HCM 2010 Ctrl Delay	21.6
HCM 2010 LOS	C



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	0	0	0	0	30
Future Volume (veh/h)	30	0	0	0	0	30
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	33	0	0	0	0	33
Adj No. of Lanes	2	2	2	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	139	143	12	6	1145	1022
Arrive On Green	0.04	0.00	0.00	0.00	0.00	0.65
Sat Flow, veh/h	3442	3632	-82054	1583	1774	1583
Grp Volume(v), veh/h	33	0	0	0	0	33
Grp Sat Flow(s),veh/h/ln	1721	1770	1770	1583	1774	1583
Q Serve(g_s), s	0.3	0.0	0.0	0.0	0.0	0.2
Cycle Q Clear(g_c), s	0.3	0.0	0.0	0.0	0.0	0.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	139	143	12	6	1145	1022
V/C Ratio(X)	0.24	0.00	0.00	0.00	0.00	0.03
Avail Cap(c_a), veh/h	601	3397	2223	995	1145	1022
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	13.3	0.0	0.0	0.0	0.0	1.8
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.0	0.0	0.4
LnGrp Delay(d),s/veh	14.2	0.0	0.0	0.0	0.0	1.9
LnGrp LOS	B					A
Approach Vol, veh/h		33	0		33	
Approach Delay, s/veh		14.2	0.0		1.9	
Approach LOS		B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				5.7		23.0	5.7	0.0
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				27.5		18.5	5.0	18.0
Max Q Clear Time (g_c+I1), s				0.0		2.2	2.3	0.0
Green Ext Time (p_c), s				0.0		0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	8.0
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	50	60	0	400	0	130	0	150	0	0	0
Future Volume (veh/h)	0	50	60	0	400	0	130	0	150	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	54	65	0	435	0	141	0	163	0	0	0
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	9	1134	507	9	1134	507	238	452	384	9	9	8
Arrive On Green	0.00	0.32	0.32	0.00	0.32	0.00	0.13	0.00	0.24	0.00	0.00	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	0	54	65	0	435	0	141	0	163	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.0	0.2	0.6	0.0	2.0	0.0	1.5	0.0	1.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.2	0.6	0.0	2.0	0.0	1.5	0.0	1.8	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	9	1134	507	9	1134	507	238	452	384	9	9	8
V/C Ratio(X)	0.00	0.05	0.13	0.00	0.38	0.00	0.59	0.00	0.42	0.00	0.00	0.00
Avail Cap(c_a), veh/h	431	3093	1384	431	3093	1384	508	1718	1460	431	1637	1391
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	4.8	5.0	0.0	5.4	0.0	8.4	0.0	6.6	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.1	0.0	0.2	0.0	2.3	0.0	0.7	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.3	0.0	0.9	0.0	0.9	0.0	0.8	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	4.8	5.1	0.0	5.6	0.0	10.7	0.0	7.3	0.0	0.0	0.0
LnGrp LOS		A	A		A		B		A			
Approach Vol, veh/h		119			435			304			0	
Approach Delay, s/veh		5.0			5.6			8.9			0.0	
Approach LOS		A			A			A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	9.5	0.0	11.1	7.3	2.2	0.0	11.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	5.9	18.1	5.0	18.0
Max Q Clear Time (g_c+I1), s	0.0	3.8	0.0	2.6	3.5	0.0	0.0	4.0
Green Ext Time (p_c), s	0.0	0.4	0.0	3.1	0.1	0.0	0.0	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	6.7
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	10	20	10	10	0	80	30	10	0	20	10
Future Volume (veh/h)	40	10	20	10	10	0	80	30	10	0	20	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	43	11	22	11	11	0	87	33	11	0	22	11
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	164	139	25	104	88	132	1099	934	4	769	654
Arrive On Green	0.05	0.09	0.09	0.01	0.06	0.00	0.07	0.59	0.59	0.00	0.41	0.41
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	43	11	22	11	11	0	87	33	11	0	22	11
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.0	0.2	0.6	0.3	0.2	0.0	2.1	0.3	0.1	0.0	0.3	0.2
Cycle Q Clear(g_c), s	1.0	0.2	0.6	0.3	0.2	0.0	2.1	0.3	0.1	0.0	0.3	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	82	164	139	25	104	88	132	1099	934	4	769	654
V/C Ratio(X)	0.52	0.07	0.16	0.43	0.11	0.00	0.66	0.03	0.01	0.00	0.03	0.02
Avail Cap(c_a), veh/h	202	765	650	202	765	650	239	1099	934	202	769	654
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	20.4	18.3	18.5	21.4	19.7	0.0	19.7	3.8	3.7	0.0	7.6	7.6
Incr Delay (d2), s/veh	5.0	0.2	0.5	11.2	0.4	0.0	5.5	0.1	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.1	0.3	0.2	0.1	0.0	1.2	0.2	0.1	0.0	0.2	0.1
LnGrp Delay(d),s/veh	25.4	18.5	19.0	32.7	20.1	0.0	25.2	3.8	3.7	0.0	7.7	7.7
LnGrp LOS	C	B	B	C	C		C	A	A		A	A
Approach Vol, veh/h		76			22			131			33	
Approach Delay, s/veh		22.6			26.4			18.0			7.7	
Approach LOS		C			C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	30.4	5.1	8.4	7.8	22.6	6.5	6.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	5.9	18.1	5.0	18.0
Max Q Clear Time (g_c+I1), s	0.0	2.3	2.3	2.6	4.1	2.3	3.0	2.2
Green Ext Time (p_c), s	0.0	0.2	0.0	0.1	0.0	0.2	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	18.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	270	50	20	530	30	250	20	50	20	10	80
Future Volume (veh/h)	20	270	50	20	530	30	250	20	50	20	10	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	22	293	54	22	576	33	272	22	54	22	11	87
Adj No. of Lanes	1	3	1	2	2	1	2	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	46	1240	386	89	863	386	353	730	620	46	586	498
Arrive On Green	0.03	0.24	0.24	0.03	0.24	0.24	0.10	0.39	0.39	0.03	0.31	0.31
Sat Flow, veh/h	1774	5085	1583	3442	3539	1583	3442	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	22	293	54	22	576	33	272	22	54	22	11	87
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1770	1583	1721	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.7	2.7	1.5	0.4	8.5	0.9	4.4	0.4	1.2	0.7	0.2	2.3
Cycle Q Clear(g_c), s	0.7	2.7	1.5	0.4	8.5	0.9	4.4	0.4	1.2	0.7	0.2	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	46	1240	386	89	863	386	353	730	620	46	586	498
V/C Ratio(X)	0.48	0.24	0.14	0.25	0.67	0.09	0.77	0.03	0.09	0.48	0.02	0.17
Avail Cap(c_a), veh/h	154	1592	496	299	1108	496	353	730	620	154	586	498
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.6	17.4	17.0	27.5	19.6	16.8	25.1	10.8	11.0	27.6	13.6	14.3
Incr Delay (d2), s/veh	7.6	0.1	0.2	1.4	1.0	0.1	10.0	0.1	0.3	7.6	0.1	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.3	0.7	0.2	4.2	0.4	2.6	0.2	0.6	0.4	0.1	1.1
LnGrp Delay(d),s/veh	35.3	17.5	17.2	28.9	20.7	16.9	35.1	10.8	11.3	35.3	13.6	15.0
LnGrp LOS	D	B	B	C	C	B	D	B	B	D	B	B
Approach Vol, veh/h		369			631			348			120	
Approach Delay, s/veh		18.5			20.8			29.9			18.6	
Approach LOS		B			C			C			B	

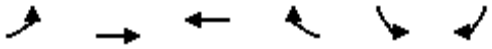
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.0	27.0	6.0	18.5	10.4	22.6	6.0	18.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	5.9	18.1	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.7	3.2	2.4	4.7	6.4	4.3	2.7	10.5
Green Ext Time (p_c), s	0.0	0.5	0.0	5.2	0.0	0.5	0.0	3.6

Intersection Summary	
HCM 2010 Ctrl Delay	22.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	182	10	20	310	20	50	10	100	20	10	14
Future Volume (veh/h)	20	182	10	20	310	20	50	10	100	20	10	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	22	198	11	22	337	22	54	11	109	22	11	15
Adj No. of Lanes	2	1	1	1	1	1	2	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	90	451	383	46	451	383	177	690	586	46	642	546
Arrive On Green	0.03	0.24	0.24	0.03	0.24	0.24	0.05	0.37	0.37	0.03	0.34	0.34
Sat Flow, veh/h	3442	1863	1583	1774	1863	1583	3442	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	22	198	11	22	337	22	54	11	109	22	11	15
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1863	1583	1721	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.3	4.8	0.3	0.7	9.0	0.6	0.8	0.2	2.5	0.7	0.2	0.3
Cycle Q Clear(g_c), s	0.3	4.8	0.3	0.7	9.0	0.6	0.8	0.2	2.5	0.7	0.2	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	90	451	383	46	451	383	177	690	586	46	642	546
V/C Ratio(X)	0.25	0.44	0.03	0.48	0.75	0.06	0.30	0.02	0.19	0.48	0.02	0.03
Avail Cap(c_a), veh/h	321	642	546	165	642	546	321	690	586	165	642	546
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.6	17.2	15.5	25.8	18.8	15.6	24.5	10.7	11.4	25.8	11.6	11.6
Incr Delay (d2), s/veh	1.4	0.7	0.0	7.4	2.9	0.1	1.0	0.0	0.7	7.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.6	0.1	0.4	5.0	0.3	0.4	0.1	1.2	0.4	0.1	0.2
LnGrp Delay(d),s/veh	27.0	17.9	15.5	33.2	21.8	15.7	25.5	10.7	12.1	33.2	11.6	11.7
LnGrp LOS	C	B	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		231			381			174			48	
Approach Delay, s/veh		18.7			22.1			16.2			21.5	
Approach LOS		B			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.9	24.4	5.9	17.5	7.3	23.0	5.9	17.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.5	5.0	18.5	5.0	18.5	5.0	18.5
Max Q Clear Time (g_c+I1), s	2.7	4.5	2.7	6.8	2.8	2.3	2.3	11.0
Green Ext Time (p_c), s	0.0	0.4	0.0	2.6	0.0	0.4	0.0	2.0

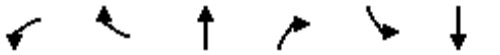
Intersection Summary	
HCM 2010 Ctrl Delay	19.9
HCM 2010 LOS	B



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	100	100	30	60	120
Future Volume (veh/h)	30	100	100	30	60	120
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	33	109	109	33	65	130
Adj No. of Lanes	1	2	2	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	74	1513	635	284	282	252
Arrive On Green	0.04	0.43	0.18	0.18	0.16	0.16
Sat Flow, veh/h	1774	3632	3632	1583	1774	1583
Grp Volume(v), veh/h	33	109	109	33	65	130
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1583	1774	1583
Q Serve(g_s), s	0.4	0.4	0.6	0.4	0.7	1.6
Cycle Q Clear(g_c), s	0.4	0.4	0.6	0.4	0.7	1.6
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	74	1513	635	284	282	252
V/C Ratio(X)	0.45	0.07	0.17	0.12	0.23	0.52
Avail Cap(c_a), veh/h	432	4519	2926	1309	1483	1324
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.2	3.7	7.6	7.5	8.0	8.4
Incr Delay (d2), s/veh	4.2	0.0	0.1	0.2	0.4	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.2	0.3	0.4	0.4	1.5
LnGrp Delay(d),s/veh	14.4	3.7	7.7	7.7	8.4	10.0
LnGrp LOS	B	A	A	A	A	B
Approach Vol, veh/h		142	142		195	
Approach Delay, s/veh		6.2	7.7		9.5	
Approach LOS		A	A		A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				13.8		8.0	5.4	8.4
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				27.8		18.2	5.3	18.0
Max Q Clear Time (g_c+I1), s				2.4		3.6	2.4	2.6
Green Ext Time (p_c), s				1.5		0.5	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	8.0
HCM 2010 LOS	A



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	81	311	1490	42	52	660
Future Volume (veh/h)	81	311	1490	42	52	660
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	88	338	1620	46	57	717
Adj No. of Lanes	1	1	3	1	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	439	399	2330	726	181	2093
Arrive On Green	0.25	0.25	0.46	0.46	0.05	0.59
Sat Flow, veh/h	1774	1615	5253	1583	3442	3632
Grp Volume(v), veh/h	88	338	1620	46	57	717
Grp Sat Flow(s),veh/h/ln	1774	1615	1695	1583	1721	1770
Q Serve(g_s), s	2.2	11.1	14.1	0.9	0.9	5.8
Cycle Q Clear(g_c), s	2.2	11.1	14.1	0.9	0.9	5.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	439	399	2330	726	181	2093
V/C Ratio(X)	0.20	0.85	0.70	0.06	0.32	0.34
Avail Cap(c_a), veh/h	572	521	2330	726	308	2093
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.6	20.0	12.0	8.4	25.5	5.8
Incr Delay (d2), s/veh	0.2	9.8	1.7	0.2	1.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.0	6.8	0.4	0.4	2.9
LnGrp Delay(d),s/veh	16.9	29.8	13.8	8.6	26.4	6.3
LnGrp LOS	B	C	B	A	C	A
Approach Vol, veh/h	426		1666			774
Approach Delay, s/veh	27.1		13.6			7.8
Approach LOS	C		B			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	7.4	30.1				37.5		18.3
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5
Max Green Setting (Gmax), s	5.0	23.5				33.0		18.0
Max Q Clear Time (g_c+I1), s	2.9	16.1				7.8		13.1
Green Ext Time (p_c), s	0.0	6.3				17.2		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B

Notes

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	217	35	22	730	740	48
Future Volume (veh/h)	217	35	22	730	740	48
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	236	38	24	793	804	52
Adj No. of Lanes	1	1	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	315	281	51	2202	1746	781
Arrive On Green	0.18	0.18	0.03	0.62	0.49	0.49
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583
Grp Volume(v), veh/h	236	38	24	793	804	52
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583
Q Serve(g_s), s	5.7	0.9	0.6	4.9	6.7	0.8
Cycle Q Clear(g_c), s	5.7	0.9	0.6	4.9	6.7	0.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	315	281	51	2202	1746	781
V/C Ratio(X)	0.75	0.14	0.47	0.36	0.46	0.07
Avail Cap(c_a), veh/h	710	633	197	2202	1746	781
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.5	15.6	21.5	4.1	7.5	6.0
Incr Delay (d2), s/veh	3.6	0.2	6.6	0.5	0.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.9	0.4	2.5	3.5	0.4
LnGrp Delay(d),s/veh	21.1	15.8	28.1	4.6	8.3	6.1
LnGrp LOS	C	B	C	A	A	A
Approach Vol, veh/h	274			817	856	
Approach Delay, s/veh	20.4			5.3	8.2	
Approach LOS	C			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		32.5		12.5	5.8	26.7		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		28.0		18.0	5.0	18.5		
Max Q Clear Time (g_c+I1), s		6.9		7.7	2.6	8.7		
Green Ext Time (p_c), s		11.9		0.6	0.0	6.9		

Intersection Summary	
HCM 2010 Ctrl Delay	8.7
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	50	716	240	110	604	0	10	240	1150	140	10	150
Future Volume (veh/h)	50	716	240	110	604	0	10	240	1150	140	10	150
Number	3	8	18	7	4	14		1	6	16		5
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0		0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00		1.00		0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		1863	1863	1900		1863
Adj Flow Rate, veh/h	54	778	261	120	657	0		261	1250	152		163
Adj No. of Lanes	1	1	1	1	1	1		1	3	0		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		0.92	0.92	0.92		0.92
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2		2
Cap, veh/h	69	570	484	100	603	512		183	1658	202		185
Arrive On Green	0.04	0.31	0.31	0.06	0.32	0.00		0.10	0.36	0.36		0.10
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583		1774	4583	557		1774
Grp Volume(v), veh/h	54	778	261	120	657	0		261	925	477		163
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583		1774	1695	1750		1774
Q Serve(g_s), s	4.5	46.0	20.6	8.5	48.6	0.0		15.5	36.0	36.0		13.6
Cycle Q Clear(g_c), s	4.5	46.0	20.6	8.5	48.6	0.0		15.5	36.0	36.0		13.6
Prop In Lane	1.00		1.00	1.00		1.00		1.00		0.32		1.00
Lane Grp Cap(c), veh/h	69	570	484	100	603	512		183	1226	633		185
V/C Ratio(X)	0.78	1.37	0.54	1.20	1.09	0.00		1.43	0.75	0.75		0.88
Avail Cap(c_a), veh/h	71	570	484	100	603	512		183	1226	633		250
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00		1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	71.6	52.2	43.4	70.9	50.9	0.0		67.4	42.1	42.1		66.4
Incr Delay (d2), s/veh	38.0	175.6	0.7	152.1	63.7	0.0		221.0	2.4	4.6		19.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
%ile BackOfQ(50%),veh/ln	3.0	51.4	9.1	8.4	35.6	0.0		18.8	17.2	18.2		7.7
LnGrp Delay(d),s/veh	109.7	227.8	44.0	223.1	114.6	0.0		288.5	44.5	46.7		85.4
LnGrp LOS	F	F	D	F	F			F	D	D		F
Approach Vol, veh/h		1093			777				1663			
Approach Delay, s/veh		178.1			131.3				83.4			
Approach LOS		F			F				F			

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	62.0	11.4	56.0	21.2	61.8	14.0	53.4
Change Period (Y+Rc), s	5.5	7.4	5.5	7.4	5.5	7.4	5.5	* 7.4
Max Green Setting (Gmax), s	15.5	54.6	6.0	48.1	21.2	48.9	8.5	* 46
Max Q Clear Time (g_c+I1), s	17.5	56.6	6.5	50.6	15.6	38.0	10.5	48.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	10.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	195.7
HCM 2010 LOS	F

Notes

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	2610	70
Future Volume (veh/h)	2610	70
Number	2	12
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	2837	0
Adj No. of Lanes	3	1
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	1846	575
Arrive On Green	0.36	0.00
Sat Flow, veh/h	5085	1583
Grp Volume(v), veh/h	2837	0
Grp Sat Flow(s),veh/h/ln	1695	1583
Q Serve(g_s), s	54.6	0.0
Cycle Q Clear(g_c), s	54.6	0.0
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1846	575
V/C Ratio(X)	1.54	0.00
Avail Cap(c_a), veh/h	1846	575
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	47.9	0.0
Incr Delay (d2), s/veh	244.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	67.2	0.0
LnGrp Delay(d),s/veh	292.2	0.0
LnGrp LOS	F	
Approach Vol, veh/h	3000	
Approach Delay, s/veh	281.0	
Approach LOS	F	
Timer		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	786	50	154	584	10	10	150	76	20	680	160
Future Volume (veh/h)	160	786	50	154	584	10	10	150	76	20	680	160
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	174	854	54	167	635	11	11	163	83	22	739	174
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	149	873	55	149	919	16	12	486	248	64	832	707
Arrive On Green	0.08	0.26	0.26	0.08	0.26	0.26	0.01	0.42	0.42	0.04	0.45	0.45
Sat Flow, veh/h	1774	3381	214	1774	3560	62	1774	1165	593	1774	1863	1583
Grp Volume(v), veh/h	174	447	461	167	316	330	11	0	246	22	739	174
Grp Sat Flow(s),veh/h/ln	1774	1770	1825	1774	1770	1852	1774	0	1758	1774	1863	1583
Q Serve(g_s), s	7.0	20.9	20.9	7.0	13.4	13.4	0.5	0.0	7.9	1.0	30.3	5.7
Cycle Q Clear(g_c), s	7.0	20.9	20.9	7.0	13.4	13.4	0.5	0.0	7.9	1.0	30.3	5.7
Prop In Lane	1.00		0.12	1.00		0.03	1.00		0.34	1.00		1.00
Lane Grp Cap(c), veh/h	149	457	471	149	457	478	12	0	734	64	832	707
V/C Ratio(X)	1.17	0.98	0.98	1.12	0.69	0.69	0.91	0.00	0.34	0.34	0.89	0.25
Avail Cap(c_a), veh/h	149	457	471	149	457	478	117	0	734	394	873	742
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.1	30.6	30.6	38.1	27.9	27.9	41.3	0.0	16.4	39.2	21.1	14.3
Incr Delay (d2), s/veh	125.4	36.4	35.8	109.4	4.9	4.7	53.3	0.0	1.2	1.2	13.5	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	14.8	15.2	7.9	7.1	7.5	0.4	0.0	4.1	0.5	18.5	2.6
LnGrp Delay(d),s/veh	163.6	67.0	66.4	147.5	32.7	32.5	94.6	0.0	17.7	40.3	34.7	15.1
LnGrp LOS	F	E	E	F	C	C	F		B	D	C	B
Approach Vol, veh/h		1082			813			257			935	
Approach Delay, s/veh		82.3			56.2			21.0			31.2	
Approach LOS		F			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	26.0	4.6	41.7	11.0	26.0	7.0	39.2
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.5
Max Green Setting (Gmax), s	7.0	21.5	5.5	39.0	7.0	21.5	18.5	26.0
Max Q Clear Time (g_c+I1), s	9.0	15.4	2.5	32.3	9.0	22.9	3.0	9.9
Green Ext Time (p_c), s	0.0	4.6	0.0	4.9	0.0	0.0	0.0	13.8

Intersection Summary	
HCM 2010 Ctrl Delay	54.8
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	792	0	20	618	10	10	10	10	10	230	130
Future Volume (veh/h)	80	792	0	20	618	10	10	10	10	10	230	130
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	87	861	0	22	672	11	11	11	11	11	250	141
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	360	1037	0	247	1018	17	182	176	134	74	307	169
Arrive On Green	0.56	0.56	0.00	0.56	0.56	0.56	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	755	1863	0	639	1828	30	337	639	488	18	1117	613
Grp Volume(v), veh/h	87	861	0	22	0	683	33	0	0	402	0	0
Grp Sat Flow(s),veh/h/ln	755	1863	0	639	0	1857	1463	0	0	1748	0	0
Q Serve(g_s), s	4.9	20.4	0.0	1.6	0.0	13.8	0.0	0.0	0.0	2.4	0.0	0.0
Cycle Q Clear(g_c), s	18.7	20.4	0.0	22.0	0.0	13.8	0.7	0.0	0.0	11.6	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.02	0.33		0.33	0.03		0.35
Lane Grp Cap(c), veh/h	360	1037	0	247	0	1035	492	0	0	550	0	0
V/C Ratio(X)	0.24	0.83	0.00	0.09	0.00	0.66	0.07	0.00	0.00	0.73	0.00	0.00
Avail Cap(c_a), veh/h	399	1132	0	279	0	1129	586	0	0	668	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.9	9.8	0.0	18.8	0.0	8.3	14.4	0.0	0.0	18.3	0.0	0.0
Incr Delay (d2), s/veh	0.3	5.0	0.0	0.2	0.0	1.3	0.1	0.0	0.0	3.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	11.7	0.0	0.3	0.0	7.4	0.4	0.0	0.0	6.1	0.0	0.0
LnGrp Delay(d),s/veh	15.2	14.8	0.0	19.0	0.0	9.6	14.4	0.0	0.0	21.5	0.0	0.0
LnGrp LOS	B	B		B		A	B			C		
Approach Vol, veh/h		948			705			33			402	
Approach Delay, s/veh		14.8			9.9			14.4			21.5	
Approach LOS		B			A			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		19.3		34.4		19.3		34.4
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		18.4		32.6		18.4		32.6
Max Q Clear Time (g_c+I1), s		2.7		22.4		13.6		24.0
Green Ext Time (p_c), s		2.5		6.7		1.2		5.9

Intersection Summary	
HCM 2010 Ctrl Delay	14.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	222	620	20	50	440	160	20	486	100	260	1174	268
Future Volume (veh/h)	222	620	20	50	440	160	20	486	100	260	1174	268
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	241	674	22	54	478	174	22	528	109	283	1276	291
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	260	718	610	69	518	440	49	831	372	306	1346	834
Arrive On Green	0.15	0.39	0.39	0.04	0.28	0.28	0.03	0.23	0.23	0.17	0.38	0.38
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	241	674	22	54	478	174	22	528	109	283	1276	291
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	17.7	46.1	1.1	4.0	33.0	11.8	1.6	17.7	7.5	20.8	46.2	14.1
Cycle Q Clear(g_c), s	17.7	46.1	1.1	4.0	33.0	11.8	1.6	17.7	7.5	20.8	46.2	14.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	260	718	610	69	518	440	49	831	372	306	1346	834
V/C Ratio(X)	0.93	0.94	0.04	0.78	0.92	0.40	0.45	0.64	0.29	0.92	0.95	0.35
Avail Cap(c_a), veh/h	260	745	633	71	546	464	255	912	408	476	1364	843
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.7	39.1	25.3	63.0	46.4	38.7	63.4	45.5	41.6	53.9	39.7	18.1
Incr Delay (d2), s/veh	36.0	18.8	0.0	37.2	20.3	0.2	2.4	0.8	0.2	13.0	13.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.3	27.3	0.5	2.7	19.9	5.2	0.8	8.8	3.3	11.3	25.1	6.1
LnGrp Delay(d),s/veh	91.8	57.9	25.3	100.2	66.7	39.0	65.8	46.4	41.7	66.9	53.3	18.2
LnGrp LOS	F	E	C	F	E	D	E	D	D	E	D	B
Approach Vol, veh/h		937			706			659			1850	
Approach Delay, s/veh		65.9			62.4			46.2			49.9	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.9	43.6	8.1	56.7	9.7	57.8	27.4	37.5
Change Period (Y+Rc), s	4.5	6.8	4.5	* 6.4	4.5	6.8	4.5	6.4
Max Green Setting (Gmax), s	19.4	38.8	19.0	* 51	5.3	52.9	35.5	34.1
Max Q Clear Time (g_c+I1), s	19.7	35.0	3.6	48.2	6.0	48.1	22.8	19.7
Green Ext Time (p_c), s	0.0	1.8	0.0	2.1	0.0	2.1	0.1	7.3

Intersection Summary	
HCM 2010 Ctrl Delay	55.0
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	680	10	70	380	60	10	723	70	70	635	250
Future Volume (veh/h)	300	680	10	70	380	60	10	723	70	70	635	250
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	326	739	11	76	413	65	11	786	76	76	690	272
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	342	766	11	97	441	69	14	798	77	90	713	281
Arrive On Green	0.19	0.42	0.42	0.05	0.28	0.28	0.01	0.24	0.24	0.05	0.29	0.29
Sat Flow, veh/h	1774	1831	27	1774	1572	247	1774	3261	315	1774	2482	978
Grp Volume(v), veh/h	326	0	750	76	0	478	11	426	436	76	492	470
Grp Sat Flow(s),veh/h/ln	1774	0	1858	1774	0	1819	1774	1770	1807	1774	1770	1690
Q Serve(g_s), s	17.9	0.0	38.8	4.2	0.0	25.3	0.6	23.6	23.6	4.2	27.0	27.0
Cycle Q Clear(g_c), s	17.9	0.0	38.8	4.2	0.0	25.3	0.6	23.6	23.6	4.2	27.0	27.0
Prop In Lane	1.00		0.01	1.00		0.14	1.00		0.17	1.00		0.58
Lane Grp Cap(c), veh/h	342	0	777	97	0	510	14	433	442	90	509	486
V/C Ratio(X)	0.95	0.00	0.96	0.78	0.00	0.94	0.78	0.99	0.99	0.84	0.97	0.97
Avail Cap(c_a), veh/h	342	0	777	207	0	537	90	433	442	90	509	486
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.3	0.0	27.9	46.0	0.0	34.6	48.8	37.0	37.0	46.4	34.6	34.6
Incr Delay (d2), s/veh	36.0	0.0	23.8	5.0	0.0	23.1	28.7	39.1	38.8	46.5	31.4	32.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.2	0.0	24.9	2.2	0.0	15.9	0.4	16.2	16.5	3.2	17.6	16.9
LnGrp Delay(d),s/veh	75.3	0.0	51.7	51.0	0.0	57.7	77.4	76.1	75.8	92.8	66.0	66.9
LnGrp LOS	E		D	D		E	E	E	E	F	E	E
Approach Vol, veh/h		1076			554			873			1038	
Approach Delay, s/veh		58.9			56.8			76.0			68.4	
Approach LOS		E			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.5	34.4	5.3	35.3	9.9	48.0	9.5	31.1
Change Period (Y+Rc), s	4.5	6.8	4.5	* 7	4.5	* 6.8	4.5	7.0
Max Green Setting (Gmax), s	19.0	29.1	5.0	* 24	11.5	* 37	5.0	24.1
Max Q Clear Time (g_c+I1), s	19.9	27.3	2.6	29.0	6.2	40.8	6.2	25.6
Green Ext Time (p_c), s	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	65.6
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	107	20	32	76	335	10	170	45	536	320	40
Future Volume (veh/h)	30	107	20	32	76	335	10	170	45	536	320	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	33	116	22	35	83	364	11	185	49	583	348	43
Adj No. of Lanes	2	1	1	2	1	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	812	553	470	935	553	470	413	425	190	941	967	433
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.12	0.12	0.12	0.27	0.27	0.27
Sat Flow, veh/h	1822	1863	1583	2417	1863	1583	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	33	116	22	35	83	364	11	185	49	583	348	43
Grp Sat Flow(s),veh/h/ln	911	1863	1583	1209	1863	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	0.6	2.0	0.4	0.5	1.4	9.1	0.1	2.1	1.2	6.5	3.5	0.9
Cycle Q Clear(g_c), s	2.0	2.0	0.4	2.5	1.4	9.1	0.1	2.1	1.2	6.5	3.5	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	812	553	470	935	553	470	413	425	190	941	967	433
V/C Ratio(X)	0.04	0.21	0.05	0.04	0.15	0.77	0.03	0.44	0.26	0.62	0.36	0.10
Avail Cap(c_a), veh/h	1044	791	672	1243	791	672	1540	1583	708	1461	1502	672
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.0	11.5	10.9	12.4	11.3	14.0	16.9	17.8	17.4	13.9	12.8	11.8
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.1	3.6	0.0	0.7	0.7	0.7	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.1	0.2	0.2	0.8	4.4	0.1	1.1	0.6	3.1	1.7	0.4
LnGrp Delay(d),s/veh	12.0	11.7	11.0	12.4	11.4	17.5	17.0	18.5	18.1	14.5	13.0	11.9
LnGrp LOS	B	B	B	B	B	B	B	B	B	B	B	B
Approach Vol, veh/h		171			482			245			974	
Approach Delay, s/veh		11.7			16.1			18.4			13.9	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		9.7		17.4		16.4		17.4
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		19.5		18.5		18.5		18.5
Max Q Clear Time (g_c+I1), s		4.1		4.0		8.5		11.1
Green Ext Time (p_c), s		1.1		2.5		3.5		1.8

Intersection Summary	
HCM 2010 Ctrl Delay	14.8
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	236	30	10	400	1040	244
Future Volume (veh/h)	236	30	10	400	1040	244
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	257	33	11	435	1130	265
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	317	283	15	2062	1322	308
Arrive On Green	0.18	0.18	0.01	0.58	0.46	0.46
Sat Flow, veh/h	1774	1583	1774	3632	2945	664
Grp Volume(v), veh/h	257	33	11	435	698	697
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1746
Q Serve(g_s), s	6.9	0.9	0.3	2.9	17.4	17.7
Cycle Q Clear(g_c), s	6.9	0.9	0.3	2.9	17.4	17.7
Prop In Lane	1.00	1.00	1.00			0.38
Lane Grp Cap(c), veh/h	317	283	15	2062	821	809
V/C Ratio(X)	0.81	0.12	0.73	0.21	0.85	0.86
Avail Cap(c_a), veh/h	841	750	748	4619	1350	1332
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.7	17.2	24.6	4.9	11.8	11.9
Incr Delay (d2), s/veh	1.9	0.1	21.8	0.0	1.4	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.4	0.2	1.4	8.6	8.7
LnGrp Delay(d),s/veh	21.6	17.2	46.4	5.0	13.2	13.6
LnGrp LOS	C	B	D	A	B	B
Approach Vol, veh/h	290			446	1395	
Approach Delay, s/veh	21.1			6.0	13.4	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	5.9	29.6				35.5		14.3
Change Period (Y+Rc), s	5.5	* 6.5				* 6.5		5.4
Max Green Setting (Gmax), s	21.0	* 38				* 65		23.6
Max Q Clear Time (g_c+I1), s	2.3	19.7				4.9		8.9
Green Ext Time (p_c), s	0.0	3.3				3.5		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	12.9
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	70	40	20	20	86	40	1090	20	254	1120	90
Future Volume (veh/h)	40	70	40	20	20	86	40	1090	20	254	1120	90
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	43	76	43	22	22	93	43	1185	22	276	1217	98
Adj No. of Lanes	2	1	1	1	1	1	2	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	139	206	175	44	177	150	139	1501	672	326	2009	899
Arrive On Green	0.04	0.11	0.11	0.02	0.10	0.10	0.04	0.42	0.42	0.18	0.57	0.57
Sat Flow, veh/h	3442	1863	1583	1774	1863	1583	3442	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	43	76	43	22	22	93	43	1185	22	276	1217	98
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1863	1583	1721	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.9	2.7	1.7	0.9	0.8	4.0	0.9	20.3	0.6	10.6	15.9	2.0
Cycle Q Clear(g_c), s	0.9	2.7	1.7	0.9	0.8	4.0	0.9	20.3	0.6	10.6	15.9	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	139	206	175	44	177	150	139	1501	672	326	2009	899
V/C Ratio(X)	0.31	0.37	0.25	0.50	0.12	0.62	0.31	0.79	0.03	0.85	0.61	0.11
Avail Cap(c_a), veh/h	245	478	406	126	478	406	245	1563	699	455	2218	992
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.7	28.9	28.5	33.8	29.1	30.5	32.7	17.5	11.8	27.7	10.0	7.0
Incr Delay (d2), s/veh	1.2	1.1	0.7	8.5	0.3	4.1	1.2	2.7	0.0	10.1	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.4	0.8	0.5	0.4	1.9	0.4	10.4	0.3	6.1	7.7	0.9
LnGrp Delay(d),s/veh	34.0	30.0	29.3	42.3	29.4	34.6	34.0	20.2	11.8	37.8	10.4	7.0
LnGrp LOS	C	C	C	D	C	C	C	C	B	D	B	A
Approach Vol, veh/h		162			137			1250			1591	
Approach Delay, s/veh		30.9			35.0			20.5			14.9	
Approach LOS		C			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	44.4	6.2	12.3	17.4	34.3	7.3	11.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	44.0	5.0	18.0	18.0	31.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.9	17.9	2.9	4.7	12.6	22.3	2.9	6.0
Green Ext Time (p_c), s	0.0	18.4	0.0	0.7	0.4	7.4	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	18.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	707	10	34	681	10	10	20	46	10	50	1010
Future Volume (veh/h)	370	707	10	34	681	10	10	20	46	10	50	1010
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	402	768	0	37	740	11	11	22	50	11	54	1098
Adj No. of Lanes	1	2	1	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	431	1618	724	46	858	13	15	31	70	69	341	736
Arrive On Green	0.24	0.46	0.00	0.03	0.24	0.24	0.07	0.07	0.07	0.22	0.22	0.22
Sat Flow, veh/h	1774	3539	1583	1774	3570	53	220	439	998	313	1535	1583
Grp Volume(v), veh/h	402	768	0	37	367	384	83	0	0	65	0	1098
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1853	1657	0	0	1847	0	1583
Q Serve(g_s), s	22.4	15.2	0.0	2.1	20.0	20.0	4.9	0.0	0.0	2.9	0.0	22.4
Cycle Q Clear(g_c), s	22.4	15.2	0.0	2.1	20.0	20.0	4.9	0.0	0.0	2.9	0.0	22.4
Prop In Lane	1.00		1.00	1.00		0.03	0.13		0.60	0.17		1.00
Lane Grp Cap(c), veh/h	431	1618	724	46	425	445	116	0	0	410	0	736
V/C Ratio(X)	0.93	0.47	0.00	0.80	0.86	0.86	0.72	0.00	0.00	0.16	0.00	1.49
Avail Cap(c_a), veh/h	906	2656	1188	123	544	570	368	0	0	410	0	736
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.4	19.0	0.0	48.9	36.7	36.7	46.0	0.0	0.0	31.6	0.0	27.0
Incr Delay (d2), s/veh	4.1	0.1	0.0	10.8	9.3	8.9	3.1	0.0	0.0	0.1	0.0	228.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.4	7.4	0.0	1.2	10.9	11.3	2.4	0.0	0.0	1.5	0.0	67.1
LnGrp Delay(d),s/veh	41.5	19.1	0.0	59.7	46.0	45.6	49.1	0.0	0.0	31.7	0.0	255.4
LnGrp LOS	D	B		E	D	D	D			C		F
Approach Vol, veh/h		1170			788			83			1163	
Approach Delay, s/veh		26.8			46.4			49.1			242.9	
Approach LOS		C			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	30.0	30.2		12.6	8.1	52.1		28.0
Change Period (Y+Rc), s	5.5	6.0		* 5.6	5.5	* 6		5.6
Max Green Setting (Gmax), s	51.5	31.0		* 22	7.0	* 76		22.4
Max Q Clear Time (g_c+I1), s	24.4	22.0		6.9	4.1	17.2		24.4
Green Ext Time (p_c), s	0.1	2.2		0.1	0.0	2.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	110.6
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	1026	160	50	784	423	20	20	30	1029	140	490
Future Volume (veh/h)	110	1026	160	50	784	423	20	20	30	1029	140	490
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	120	1115	174	54	852	460	22	22	33	1118	152	533
Adj No. of Lanes	1	2	0	2	3	1	1	1	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	1205	188	94	1697	521	27	37	56	1172	1348	603
Arrive On Green	0.08	0.39	0.39	0.03	0.33	0.33	0.01	0.06	0.06	0.34	0.38	0.38
Sat Flow, veh/h	1774	3070	478	3442	5085	1562	1774	674	1011	3442	3539	1583
Grp Volume(v), veh/h	120	641	648	54	852	460	22	0	55	1118	152	533
Grp Sat Flow(s),veh/h/ln	1774	1770	1778	1721	1695	1562	1774	0	1684	1721	1770	1583
Q Serve(g_s), s	7.4	38.6	38.9	1.7	15.0	31.1	1.4	0.0	3.6	35.5	3.1	35.1
Cycle Q Clear(g_c), s	7.4	38.6	38.9	1.7	15.0	31.1	1.4	0.0	3.6	35.5	3.1	35.1
Prop In Lane	1.00		0.27	1.00		1.00	1.00		0.60	1.00		1.00
Lane Grp Cap(c), veh/h	146	695	698	94	1697	521	27	0	93	1172	1348	603
V/C Ratio(X)	0.82	0.92	0.93	0.58	0.50	0.88	0.83	0.00	0.59	0.95	0.11	0.88
Avail Cap(c_a), veh/h	211	749	753	157	1766	542	97	0	528	1303	2245	1004
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.4	32.3	32.4	53.7	29.8	35.2	54.9	0.0	51.5	36.0	22.4	32.3
Incr Delay (d2), s/veh	10.2	15.7	16.4	2.1	0.1	14.6	20.6	0.0	2.2	14.0	0.0	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	21.7	22.2	0.9	7.0	15.5	0.8	0.0	1.7	19.1	1.5	15.8
LnGrp Delay(d),s/veh	60.7	48.1	48.8	55.8	29.9	49.8	75.5	0.0	53.7	50.0	22.4	35.2
LnGrp LOS	E	D	D	E	C	D	E		D	D	C	D
Approach Vol, veh/h		1409			1366			77			1803	
Approach Delay, s/veh		49.5			37.6			59.9			43.3	
Approach LOS		D			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.7	42.2	7.2	47.7	8.1	48.8	43.6	11.3
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	13.3	* 39	6.1	* 71	* 5.1	* 47	42.3	* 35
Max Q Clear Time (g_c+I1), s	9.4	33.1	3.4	37.1	3.7	40.9	37.5	5.6
Green Ext Time (p_c), s	0.0	2.8	0.0	0.6	0.0	3.0	0.6	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	43.8
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	160	1149	656	170	503	178	10	384	948	160	461	2169
Future Volume (veh/h)	160	1149	656	170	503	178	10	384	948	160	461	2169
Number	7	4	14	3	8	18		5	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00		1.00		0.99	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	174	1249	713	185	547	193		417	1030	174	501	2358
Adj No. of Lanes	2	3	1	2	3	1		2	3	1	2	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2
Cap, veh/h	220	1447	451	154	1351	421		344	1723	530	544	2019
Arrive On Green	0.06	0.28	0.28	0.04	0.27	0.27		0.10	0.34	0.34	0.16	0.40
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583		3442	5085	1563	3442	5085
Grp Volume(v), veh/h	174	1249	713	185	547	193		417	1030	174	501	2358
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583		1721	1695	1563	1721	1695
Q Serve(g_s), s	7.2	33.8	41.3	6.5	12.8	14.8		14.5	24.4	12.0	20.8	57.6
Cycle Q Clear(g_c), s	7.2	33.8	41.3	6.5	12.8	14.8		14.5	24.4	12.0	20.8	57.6
Prop In Lane	1.00		1.00	1.00		1.00		1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	220	1447	451	154	1351	421		344	1723	530	544	2019
V/C Ratio(X)	0.79	0.86	1.58	1.20	0.40	0.46		1.21	0.60	0.33	0.92	1.17
Avail Cap(c_a), veh/h	296	1447	451	154	1351	421		344	1723	530	600	2019
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.0	49.2	51.9	69.3	43.8	44.6		65.3	39.8	35.7	60.2	43.8
Incr Delay (d2), s/veh	7.0	5.4	272.4	136.2	0.1	0.3		119.5	0.4	0.1	17.8	81.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	16.6	52.1	6.0	6.0	6.5		12.6	11.5	5.2	11.2	42.1
LnGrp Delay(d),s/veh	74.0	54.6	324.3	205.5	43.9	44.8		184.8	40.2	35.8	78.0	125.1
LnGrp LOS	E	D	F	F	D	D		F	D	D	E	F
Approach Vol, veh/h		2136			925				1621			3087
Approach Delay, s/veh		146.2			76.4				76.9			110.5
Approach LOS		F			E				E			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.4	56.6	12.0	48.1	20.0	65.0	14.8	45.3
Change Period (Y+Rc), s	5.5	* 7.4	5.5	* 6.8	5.5	* 7.4	5.5	6.8
Max Green Setting (Gmax), s	25.3	* 47	6.5	* 41	14.5	* 58	12.5	35.2
Max Q Clear Time (g_c+I1), s	22.8	26.4	8.5	43.3	16.5	59.6	9.2	16.8
Green Ext Time (p_c), s	0.1	10.6	0.0	0.0	0.0	0.0	0.0	4.6

Intersection Summary		
HCM 2010 Ctrl Delay		109.3
HCM 2010 LOS		F

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	210
Future Volume (veh/h)	210
Number	16
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	228
Adj No. of Lanes	1
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	629
Arrive On Green	0.40
Sat Flow, veh/h	1583
Grp Volume(v), veh/h	228
Grp Sat Flow(s),veh/h/ln	1583
Q Serve(g_s), s	14.7
Cycle Q Clear(g_c), s	14.7
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	629
V/C Ratio(X)	0.36
Avail Cap(c_a), veh/h	629
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	30.8
Incr Delay (d2), s/veh	0.1
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	6.5
LnGrp Delay(d),s/veh	31.0
LnGrp LOS	C
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	260	380	200	891	1199	240
Future Volume (veh/h)	260	380	200	891	1199	240
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	283	413	217	968	1303	261
Adj No. of Lanes	1	1	2	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	483	440	315	1990	1417	634
Arrive On Green	0.27	0.27	0.09	0.56	0.40	0.40
Sat Flow, veh/h	1774	1615	3442	3632	3632	1583
Grp Volume(v), veh/h	283	413	217	968	1303	261
Grp Sat Flow(s),veh/h/ln	1774	1615	1721	1770	1770	1583
Q Serve(g_s), s	9.0	16.3	4.0	10.8	22.8	7.7
Cycle Q Clear(g_c), s	9.0	16.3	4.0	10.8	22.8	7.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	483	440	315	1990	1417	634
V/C Ratio(X)	0.59	0.94	0.69	0.49	0.92	0.41
Avail Cap(c_a), veh/h	483	440	1053	2800	1452	649
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.6	23.2	28.8	8.6	18.6	14.1
Incr Delay (d2), s/veh	1.2	27.7	1.0	0.1	9.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	10.6	1.9	5.1	12.9	3.4
LnGrp Delay(d),s/veh	21.8	51.0	29.8	8.7	28.0	14.2
LnGrp LOS	C	D	C	A	C	B
Approach Vol, veh/h	696			1185	1564	
Approach Delay, s/veh	39.1			12.5	25.7	
Approach LOS	D			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	10.6	32.3				42.8		22.5
Change Period (Y+Rc), s	* 4.6	* 6.1				* 6.1		4.7
Max Green Setting (Gmax), s	* 20	* 27				* 52		17.8
Max Q Clear Time (g_c+I1), s	6.0	24.8				12.8		18.3
Green Ext Time (p_c), s	0.1	1.3				5.9		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	23.9
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	870	350	400	690	70	360	334	710	70	126	20
Future Volume (veh/h)	80	870	350	400	690	70	360	334	710	70	126	20
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.98	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	87	946	0	435	750	76	382	563	572	76	137	22
Adj No. of Lanes	1	2	1	2	2	0	1	1	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	111	1074	481	179	942	95	472	496	415	143	273	45
Arrive On Green	0.06	0.30	0.00	0.05	0.29	0.29	0.27	0.27	0.27	0.13	0.13	0.13
Sat Flow, veh/h	1774	3539	1583	3442	3230	327	1774	1863	1558	1113	2123	351
Grp Volume(v), veh/h	87	946	0	435	411	415	382	563	572	123	0	112
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1788	1774	1863	1558	1807	0	1779
Q Serve(g_s), s	4.0	21.0	0.0	4.3	17.7	17.7	16.6	22.0	22.0	5.3	0.0	4.8
Cycle Q Clear(g_c), s	4.0	21.0	0.0	4.3	17.7	17.7	16.6	22.0	22.0	5.3	0.0	4.8
Prop In Lane	1.00		1.00	1.00		0.18	1.00		1.00	0.62		0.20
Lane Grp Cap(c), veh/h	111	1074	481	179	516	521	472	496	415	233	0	229
V/C Ratio(X)	0.78	0.88	0.00	2.43	0.80	0.80	0.81	1.13	1.38	0.53	0.00	0.49
Avail Cap(c_a), veh/h	144	1161	519	179	529	535	472	496	415	569	0	560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.2	27.3	0.0	39.2	27.0	27.0	28.3	30.3	30.3	33.7	0.0	33.5
Incr Delay (d2), s/veh	13.9	7.2	0.0	659.2	7.4	7.4	9.4	83.0	184.7	0.7	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	11.3	0.0	18.4	9.7	9.8	9.4	22.6	30.7	2.7	0.0	2.4
LnGrp Delay(d),s/veh	52.0	34.5	0.0	698.4	34.4	34.4	37.7	113.3	215.0	34.3	0.0	34.0
LnGrp LOS	D	C		F	C	C	D	F	F	C		C
Approach Vol, veh/h		1033			1261			1517			235	
Approach Delay, s/veh		36.0			263.4			132.6			34.2	
Approach LOS		D			F			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.5	28.8		27.2	9.5	29.8		16.1
Change Period (Y+Rc), s	* 5.3	* 4.7		* 5.2	* 5.2	* 4.7		5.5
Max Green Setting (Gmax), s	* 6.7	* 25		* 22	* 4.3	* 27		26.0
Max Q Clear Time (g_c+I1), s	6.0	19.7		24.0	6.3	23.0		7.3
Green Ext Time (p_c), s	0.0	2.0		0.0	0.0	1.7		0.2

Intersection Summary		
HCM 2010 Ctrl Delay		143.0
HCM 2010 LOS		F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	460	0	450	0	1244	1305	0	976	310
Future Volume (veh/h)	0	0	0	460	0	450	0	1244	1305	0	976	310
Number				3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h				494	8	489	0	1352	0	0	1061	0
Adj No. of Lanes				1	1	0	0	3	1	0	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				642	9	559	0	2023	630	0	2023	630
Arrive On Green				0.36	0.36	0.36	0.00	0.40	0.00	0.00	0.40	0.00
Sat Flow, veh/h				1774	25	1545	0	5253	1583	0	5253	1583
Grp Volume(v), veh/h				494	0	497	0	1352	0	0	1061	0
Grp Sat Flow(s),veh/h/ln				1774	0	1570	0	1695	1583	0	1695	1583
Q Serve(g_s), s				10.1	0.0	12.2	0.0	9.0	0.0	0.0	6.5	0.0
Cycle Q Clear(g_c), s				10.1	0.0	12.2	0.0	9.0	0.0	0.0	6.5	0.0
Prop In Lane				1.00		0.98	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				642	0	568	0	2023	630	0	2023	630
V/C Ratio(X)				0.77	0.00	0.87	0.00	0.67	0.00	0.00	0.52	0.00
Avail Cap(c_a), veh/h				758	0	671	0	2777	865	0	2863	891
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				11.6	0.0	12.3	0.0	10.2	0.0	0.0	9.4	0.0
Incr Delay (d2), s/veh				3.3	0.0	9.8	0.0	0.1	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.5	0.0	6.8	0.0	4.2	0.0	0.0	3.1	0.0
LnGrp Delay(d),s/veh				14.9	0.0	22.1	0.0	10.3	0.0	0.0	9.5	0.0
LnGrp LOS				B		C		B			A	
Approach Vol, veh/h					991			1352			1061	
Approach Delay, s/veh					18.5			10.3			9.5	
Approach LOS					B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		21.4				21.4		19.8
Change Period (Y+Rc), s		* 5				5.0		4.9
Max Green Setting (Gmax), s		* 23				22.5		17.6
Max Q Clear Time (g_c+I1), s		8.5				11.0		14.2
Green Ext Time (p_c), s		6.1				5.4		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	12.5
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	0	40	0	0	0	0	849	390	0	86	120
Future Volume (veh/h)	270	0	40	0	0	0	0	849	390	0	86	120
Number	7	4	14				1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	306	0	29				0	923	0	0	93	0
Adj No. of Lanes	2	0	1				0	3	0	0	3	1
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	563	0	250				0	1771	0	0	1771	551
Arrive On Green	0.16	0.00	0.16				0.00	0.35	0.00	0.00	0.35	0.00
Sat Flow, veh/h	3548	0	1577				0	5421	0	0	5253	1583
Grp Volume(v), veh/h	306	0	29				0	923	0	0	93	0
Grp Sat Flow(s),veh/h/ln	1774	0	1577				0	1695	0	0	1695	1583
Q Serve(g_s), s	1.7	0.0	0.3				0.0	3.0	0.0	0.0	0.3	0.0
Cycle Q Clear(g_c), s	1.7	0.0	0.3				0.0	3.0	0.0	0.0	0.3	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	563	0	250				0	1771	0	0	1771	551
V/C Ratio(X)	0.54	0.00	0.12				0.00	0.52	0.00	0.00	0.05	0.00
Avail Cap(c_a), veh/h	3129	0	1391				0	5064	0	0	5184	1614
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	8.2	0.0	7.6				0.0	5.5	0.0	0.0	4.6	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.1				0.0	0.1	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.2				0.0	1.4	0.0	0.0	0.1	0.0
LnGrp Delay(d),s/veh	8.5	0.0	7.7				0.0	5.6	0.0	0.0	4.6	0.0
LnGrp LOS	A		A					A			A	
Approach Vol, veh/h		335						923			93	
Approach Delay, s/veh		8.4						5.6			4.6	
Approach LOS		A						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		12.3		8.7		12.3		
Change Period (Y+Rc), s		* 5		* 5.4		5.0		
Max Green Setting (Gmax), s		* 22		* 19		21.0		
Max Q Clear Time (g_c+I1), s		2.3		3.7		5.0		
Green Ext Time (p_c), s		2.4		0.2		2.3		

Intersection Summary	
HCM 2010 Ctrl Delay	6.2
HCM 2010 LOS	A

Notes

Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (veh/h)	736	230	10	10	1149	620	20
Future Volume (veh/h)	736	230	10	10	1149	620	20
Number	6	16		5	2	3	18
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900		1863	1863	1863	1863
Adj Flow Rate, veh/h	800	0		11	1249	674	22
Adj No. of Lanes	3	0		1	3	2	1
Peak Hour Factor	0.92	0.92		0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2		2	2	2	2
Cap, veh/h	2394	0		15	2979	815	375
Arrive On Green	0.47	0.00		0.01	0.59	0.24	0.24
Sat Flow, veh/h	5421	0		1774	5253	3442	1583
Grp Volume(v), veh/h	800	0		11	1249	674	22
Grp Sat Flow(s),veh/h/ln	1695	0		1774	1695	1721	1583
Q Serve(g_s), s	4.7	0.0		0.3	6.5	8.9	0.5
Cycle Q Clear(g_c), s	4.7	0.0		0.3	6.5	8.9	0.5
Prop In Lane		0.00		1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2394	0		15	2979	815	375
V/C Ratio(X)	0.33	0.00		0.73	0.42	0.83	0.06
Avail Cap(c_a), veh/h	2394	0		196	3397	2119	975
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.0	0.0		23.7	5.4	17.3	14.1
Incr Delay (d2), s/veh	0.2	0.0		21.6	0.2	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0		0.2	3.1	4.3	0.2
LnGrp Delay(d),s/veh	8.1	0.0		45.3	5.6	18.2	14.2
LnGrp LOS	A			D	A	B	B
Approach Vol, veh/h	800				1260	696	
Approach Delay, s/veh	8.1				6.0	18.1	
Approach LOS	A				A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		33.1			5.5	27.6		14.8
Change Period (Y+Rc), s		5.0			* 5.1	5.0		3.5
Max Green Setting (Gmax), s		32.0			* 5.3	21.6		29.5
Max Q Clear Time (g_c+I1), s		8.5			2.3	6.7		10.9
Green Ext Time (p_c), s		19.6			0.0	13.3		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	9.7
HCM 2010 LOS	A

Notes

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (veh/h)	10	440	900	532	30	320	920	220	10	237	592	170
Future Volume (veh/h)	10	440	900	532	30	320	920	220	10	237	592	170
Number		3	8	18		7	4	14		1	6	16
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.99		1.00		0.98		1.00		1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1900		1863	1863	1863		1863	1863	1863
Adj Flow Rate, veh/h		478	978	578		348	1000	239		258	643	185
Adj No. of Lanes		2	3	0		2	3	1		2	3	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2
Cap, veh/h		524	1024	471		392	1341	411		306	1943	604
Arrive On Green		0.15	0.30	0.30		0.11	0.26	0.26		0.09	0.38	0.38
Sat Flow, veh/h		3442	3390	1560		3442	5085	1558		3442	5085	1580
Grp Volume(v), veh/h		478	978	578		348	1000	239		258	643	185
Grp Sat Flow(s),veh/h/ln		1721	1695	1560		1721	1695	1558		1721	1695	1580
Q Serve(g_s), s		19.1	39.5	42.2		13.9	25.2	18.6		10.3	12.5	11.5
Cycle Q Clear(g_c), s		19.1	39.5	42.2		13.9	25.2	18.6		10.3	12.5	11.5
Prop In Lane		1.00		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h		524	1024	471		392	1341	411		306	1943	604
V/C Ratio(X)		0.91	0.96	1.23		0.89	0.75	0.58		0.84	0.33	0.31
Avail Cap(c_a), veh/h		613	1024	471		397	1341	411		431	2016	626
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		58.3	47.8	48.8		61.0	47.1	44.7		62.7	30.5	30.2
Incr Delay (d2), s/veh		15.3	18.1	119.7		20.0	2.1	1.4		7.5	0.0	0.1
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		10.2	21.1	33.7		7.7	12.0	8.2		5.2	5.8	5.0
LnGrp Delay(d),s/veh		73.6	66.0	168.5		81.0	49.2	46.1		70.3	30.6	30.3
LnGrp LOS		E	E	F		F	D	D		E	C	C
Approach Vol, veh/h			2034				1587				1086	
Approach Delay, s/veh			96.9				55.7				40.0	
Approach LOS			F				E				D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.9	52.4	26.8	42.7	11.3	59.0	21.4	48.0
Change Period (Y+Rc), s	5.5	* 5.6	5.5	5.8	5.5	* 5.6	5.5	5.8
Max Green Setting (Gmax), s	17.5	* 47	24.9	33.4	8.9	* 55	16.1	42.2
Max Q Clear Time (g_c+I1), s	12.3	48.8	21.1	27.2	5.9	14.5	15.9	44.2
Green Ext Time (p_c), s	0.1	0.0	0.2	3.9	0.0	7.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	71.9
HCM 2010 LOS	E

Notes

Movement	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (veh/h)	90	1231	330
Future Volume (veh/h)	90	1231	330
Number	5	2	12
Initial Q (Qb), veh	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900
Adj Flow Rate, veh/h	98	1338	359
Adj No. of Lanes	2	3	0
Peak Hour Factor	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2
Cap, veh/h	143	1334	357
Arrive On Green	0.04	0.33	0.33
Sat Flow, veh/h	3442	3982	1066
Grp Volume(v), veh/h	98	1139	558
Grp Sat Flow(s),veh/h/ln	1721	1695	1657
Q Serve(g_s), s	3.9	46.8	46.8
Cycle Q Clear(g_c), s	3.9	46.8	46.8
Prop In Lane	1.00		0.64
Lane Grp Cap(c), veh/h	143	1135	555
V/C Ratio(X)	0.69	1.00	1.01
Avail Cap(c_a), veh/h	219	1135	555
HCM Platoon Ratio	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.1	46.5	46.5
Incr Delay (d2), s/veh	2.2	27.4	39.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	26.1	27.4
LnGrp Delay(d),s/veh	68.2	73.9	86.1
LnGrp LOS	E	F	F
Approach Vol, veh/h		1795	
Approach Delay, s/veh		77.4	
Approach LOS		E	
Timer			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	540	260	20	220	170	420	40	1522	130	690	1501	170
Future Volume (veh/h)	540	260	20	220	170	420	40	1522	130	690	1501	170
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	587	283	22	239	185	457	43	1654	141	750	1632	185
Adj No. of Lanes	2	3	0	2	1	2	2	3	0	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	534	1135	87	289	302	1103	75	1563	133	658	2528	773
Arrive On Green	0.16	0.24	0.24	0.08	0.16	0.16	0.02	0.33	0.33	0.19	0.50	0.50
Sat Flow, veh/h	3442	4810	367	3548	1863	3067	3442	4771	406	3442	5085	1555
Grp Volume(v), veh/h	587	198	107	239	185	457	43	1175	620	750	1632	185
Grp Sat Flow(s),veh/h/ln	1721	1695	1787	1774	1863	1534	1721	1695	1787	1721	1695	1555
Q Serve(g_s), s	21.5	6.6	6.7	9.2	12.8	15.7	1.7	45.4	45.4	26.5	32.9	9.4
Cycle Q Clear(g_c), s	21.5	6.6	6.7	9.2	12.8	15.7	1.7	45.4	45.4	26.5	32.9	9.4
Prop In Lane	1.00		0.21	1.00		1.00	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	534	800	422	289	302	1103	75	1111	585	658	2528	773
V/C Ratio(X)	1.10	0.25	0.25	0.83	0.61	0.41	0.58	1.06	1.06	1.14	0.65	0.24
Avail Cap(c_a), veh/h	534	834	440	433	403	1269	129	1111	585	658	2528	773
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.5	43.0	43.0	62.7	54.0	34.0	67.2	46.6	46.6	56.0	25.8	19.9
Incr Delay (d2), s/veh	68.9	0.1	0.1	5.0	0.7	0.1	2.6	43.6	54.1	80.3	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.3	3.1	3.3	4.7	6.6	6.7	0.8	27.9	31.1	19.9	15.5	4.1
LnGrp Delay(d),s/veh	127.5	43.0	43.1	67.7	54.7	34.1	69.7	90.2	100.7	136.4	26.3	19.9
LnGrp LOS	F	D	D	E	D	C	E	F	F	F	C	B
Approach Vol, veh/h		892			881			1838			2567	
Approach Delay, s/veh		98.6			47.6			93.3			58.0	
Approach LOS		F			D			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	74.6	27.0	28.5	32.0	51.1	16.8	38.7
Change Period (Y+Rc), s	5.5	* 5.7	5.5	* 6	5.5	* 5.7	5.5	* 6
Max Green Setting (Gmax), s	5.2	* 66	21.5	* 30	26.5	* 45	16.9	* 34
Max Q Clear Time (g_c+I1), s	3.7	34.9	23.5	17.7	28.5	47.4	11.2	8.7
Green Ext Time (p_c), s	0.0	13.2	0.0	1.2	0.0	0.0	0.1	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	72.9
HCM 2010 LOS	E

Notes

Jaeger Ranch
19: Zinfandel Dr & US-50 EB Ramps & Gold Center Dr

Movement	EBL2	EBL	EBT	EBR	WBR	WBR2	NBT	NBR	NBR2	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	690	10	120	1130	910	140	1932	490	10	1281	170
Future Volume (vph)	690	10	120	1130	910	140	1932	490	10	1281	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8	6.8	6.8	4.5		4.6			4.6	4.0
Lane Util. Factor		0.91	0.86	0.91	0.88		0.86			0.91	1.00
Frpb, ped/bikes		1.00	0.99	0.98	1.00		1.00			1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt		1.00	0.88	0.85	0.85		0.97			1.00	0.85
Flt Protected		0.95	1.00	1.00	1.00		1.00			1.00	1.00
Satd. Flow (prot)		1610	2770	1415	2787		6180			5085	1545
Flt Permitted		0.95	1.00	1.00	1.00		1.00			1.00	1.00
Satd. Flow (perm)		1610	2770	1415	2787		6180			5085	1545
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	750	11	130	1228	989	152	2100	533	11	1392	185
RTOR Reduction (vph)	0	0	32	38	59	0	1	0	0	0	0
Lane Group Flow (vph)	0	751	722	576	1082	0	2643	0	0	1392	185
Confl. Peds. (#/hr)	6	6		6	3	3		3	3		6
Confl. Bikes (#/hr)								2	2		3
Turn Type	Split	Split	NA	Perm	Prot		NA			NA	Free
Protected Phases	4	4	4		5		6			2	
Permitted Phases				4							Free
Actuated Green, G (s)		37.2	37.2	37.2	26.5		40.4			71.4	120.0
Effective Green, g (s)		37.2	37.2	37.2	26.5		40.4			71.4	120.0
Actuated g/C Ratio		0.31	0.31	0.31	0.22		0.34			0.60	1.00
Clearance Time (s)		6.8	6.8	6.8	4.5		4.6			4.6	
Vehicle Extension (s)		1.0	1.0	1.0	3.0		1.0			1.0	
Lane Grp Cap (vph)		499	858	438	615		2080			3025	1545
v/s Ratio Prot		c0.47	0.26		c0.39		c0.43			0.27	
v/s Ratio Perm				0.41							0.12
v/c Ratio		1.51	1.30dr	1.32	1.76		1.27			0.46	0.12
Uniform Delay, d1		41.4	38.7	41.4	46.8		39.8			13.6	0.0
Progression Factor		1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		237.5	7.2	157.3	348.2		125.8			0.0	0.2
Delay (s)		278.9	45.9	198.7	395.0		165.6			13.6	0.2
Level of Service		F	D	F	F		F			B	A
Approach Delay (s)			172.8				165.6			12.0	
Approach LOS			F				F			B	

Intersection Summary			
HCM 2000 Control Delay	170.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.9
Intersection Capacity Utilization	115.3%	ICU Level of Service	H
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	660	0	340	0	1467	2075	0	1111	670
Future Volume (veh/h)	0	0	0	660	0	340	0	1467	2075	0	1111	670
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h				717	0	370	0	1595	0	0	1208	0
Adj No. of Lanes				2	0	1	0	3	2	0	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				1095	0	504	0	2260	1238	0	2260	704
Arrive On Green				0.32	0.00	0.32	0.00	0.44	0.00	0.00	0.44	0.00
Sat Flow, veh/h				3442	0	1583	0	5253	2787	0	5253	1583
Grp Volume(v), veh/h				717	0	370	0	1595	0	0	1208	0
Grp Sat Flow(s),veh/h/ln				1721	0	1583	0	1695	1393	0	1695	1583
Q Serve(g_s), s				6.9	0.0	8.0	0.0	9.7	0.0	0.0	6.6	0.0
Cycle Q Clear(g_c), s				6.9	0.0	8.0	0.0	9.7	0.0	0.0	6.6	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				1095	0	504	0	2260	1238	0	2260	704
V/C Ratio(X)				0.65	0.00	0.73	0.00	0.71	0.00	0.00	0.53	0.00
Avail Cap(c_a), veh/h				1392	0	640	0	2707	1483	0	2707	843
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				11.3	0.0	11.6	0.0	8.6	0.0	0.0	7.8	0.0
Incr Delay (d2), s/veh				0.7	0.0	3.3	0.0	0.5	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.3	0.0	3.8	0.0	4.5	0.0	0.0	3.0	0.0
LnGrp Delay(d),s/veh				12.0	0.0	14.9	0.0	9.1	0.0	0.0	7.8	0.0
LnGrp LOS				B		B		A			A	
Approach Vol, veh/h					1087			1595			1208	
Approach Delay, s/veh					13.0			9.1			7.8	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		21.6				21.6		16.7
Change Period (Y+Rc), s		4.6				4.6		4.5
Max Green Setting (Gmax), s		20.4				20.4		15.5
Max Q Clear Time (g_c+I1), s		11.7				8.6		10.0
Green Ext Time (p_c), s		5.3				6.4		2.2

Intersection Summary	
HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (veh/h)	40	530	1340	427	10	350	690	40	70	461	1106	340
Future Volume (veh/h)	40	530	1340	427	10	350	690	40	70	461	1106	340
Number		3	8	18		7	4	14		1	6	16
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.98		1.00		1.00		1.00		0.99
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1676	1676	1676		1676	1676	1676		1676	1676	1676
Adj Flow Rate, veh/h		576	1457	464		380	750	43		501	1202	370
Adj No. of Lanes		2	2	1		2	3	1		2	3	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2
Cap, veh/h		613	1098	484		267	1067	331		374	1472	452
Arrive On Green		0.20	0.34	0.34		0.09	0.23	0.23		0.12	0.32	0.32
Sat Flow, veh/h		3097	3185	1403		3097	4577	1420		3097	4577	1404
Grp Volume(v), veh/h		576	1457	464		380	750	43		501	1202	370
Grp Sat Flow(s),veh/h/ln		1549	1593	1403		1549	1526	1420		1549	1526	1404
Q Serve(g_s), s		26.6	50.0	47.0		12.5	21.8	3.5		17.5	35.0	35.2
Cycle Q Clear(g_c), s		26.6	50.0	47.0		12.5	21.8	3.5		17.5	35.0	35.2
Prop In Lane		1.00		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h		613	1098	484		267	1067	331		374	1472	452
V/C Ratio(X)		0.94	1.33	0.96		1.42	0.70	0.13		1.34	0.82	0.82
Avail Cap(c_a), veh/h		641	1098	484		267	1067	331		374	1472	452
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		57.3	47.5	46.5		66.3	51.0	44.0		63.8	45.2	45.3
Incr Delay (d2), s/veh		21.1	153.3	31.1		210.9	3.3	0.6		170.1	4.1	12.5
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		13.2	45.4	22.3		13.2	9.5	1.4		16.3	15.4	15.2
LnGrp Delay(d),s/veh		78.4	200.8	77.6		277.1	54.3	44.6		233.9	49.4	57.8
LnGrp LOS		E	F	E		F	D	D		F	D	E
Approach Vol, veh/h			2497				1173				2073	
Approach Delay, s/veh			149.7				126.1				95.5	
Approach LOS			F				F				F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	48.0	34.2	39.8	18.6	52.4	18.0	56.0
Change Period (Y+Rc), s	5.5	* 5.8	5.5	6.0	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	17.5	* 42	30.0	32.5	14.2	* 46	12.5	50.0
Max Q Clear Time (g_c+I1), s	19.5	44.2	28.6	23.8	13.0	37.2	14.5	52.0
Green Ext Time (p_c), s	0.0	0.0	0.1	8.5	0.0	8.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	125.2
HCM 2010 LOS	F

Notes

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Volume (veh/h)	40	220	1447	170
Future Volume (veh/h)	40	220	1447	170
Number		5	2	12
Initial Q (Qb), veh		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.98
Parking Bus, Adj		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1676	1676	1676
Adj Flow Rate, veh/h		239	1573	185
Adj No. of Lanes		2	3	1
Peak Hour Factor		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2
Cap, veh/h		279	1332	408
Arrive On Green		0.09	0.29	0.29
Sat Flow, veh/h		3097	4577	1401
Grp Volume(v), veh/h		239	1573	185
Grp Sat Flow(s),veh/h/ln		1549	1526	1401
Q Serve(g_s), s		11.0	42.2	15.6
Cycle Q Clear(g_c), s		11.0	42.2	15.6
Prop In Lane		1.00		1.00
Lane Grp Cap(c), veh/h		279	1332	408
V/C Ratio(X)		0.86	1.18	0.45
Avail Cap(c_a), veh/h		303	1332	408
HCM Platoon Ratio		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00
Uniform Delay (d), s/veh		65.1	51.4	42.0
Incr Delay (d2), s/veh		18.3	89.4	1.6
Initial Q Delay(d3),s/veh		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		5.4	28.8	6.2
LnGrp Delay(d),s/veh		83.4	140.8	43.6
LnGrp LOS		F	F	D
Approach Vol, veh/h			1997	
Approach Delay, s/veh			125.0	
Approach LOS			F	
Timer				

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	510	340	30	10	180	300	210	90	1049	60	190	1386
Future Volume (veh/h)	510	340	30	10	180	300	210	90	1049	60	190	1386
Number	3	8	18		7	4	14	1	6	16	5	2
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99		1.00		0.97	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863		1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	554	370	33		196	391	185	98	1140	65	207	1507
Adj No. of Lanes	2	2	1		2	2	1	2	4	1	2	3
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2		2	2	2	2	2	2	2	2
Cap, veh/h	382	1028	454		267	949	391	156	2006	494	277	1770
Arrive On Green	0.11	0.29	0.29		0.08	0.25	0.25	0.05	0.31	0.31	0.08	0.35
Sat Flow, veh/h	3442	3539	1562		3548	3725	1536	3442	6408	1577	3442	5085
Grp Volume(v), veh/h	554	370	33		196	391	185	98	1140	65	207	1507
Grp Sat Flow(s),veh/h/ln	1721	1770	1562		1774	1863	1536	1721	1602	1577	1721	1695
Q Serve(g_s), s	10.5	7.8	1.4		5.1	8.3	9.7	2.6	14.1	2.8	5.6	26.0
Cycle Q Clear(g_c), s	10.5	7.8	1.4		5.1	8.3	9.7	2.6	14.1	2.8	5.6	26.0
Prop In Lane	1.00		1.00		1.00		1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	382	1028	454		267	949	391	156	2006	494	277	1770
V/C Ratio(X)	1.45	0.36	0.07		0.73	0.41	0.47	0.63	0.57	0.13	0.75	0.85
Avail Cap(c_a), veh/h	382	1200	530		394	1260	519	160	2006	494	491	1907
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.1	26.6	24.3		42.8	29.4	29.9	44.4	27.2	23.3	42.6	28.6
Incr Delay (d2), s/veh	217.1	0.3	0.1		1.5	0.5	1.5	6.1	0.3	0.1	1.5	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.4	3.8	0.6		2.6	4.3	4.3	1.4	6.2	1.2	2.7	12.8
LnGrp Delay(d),s/veh	259.2	26.9	24.4		44.3	29.9	31.4	50.5	27.5	23.4	44.1	32.8
LnGrp LOS	F	C	C		D	C	C	D	C	C	D	C
Approach Vol, veh/h		957				772			1303			1986
Approach Delay, s/veh		161.3				33.9			29.0			33.0
Approach LOS		F				C			C			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	38.7	16.0	30.1	13.1	35.4	12.6	33.5
Change Period (Y+Rc), s	5.5	* 5.8	5.5	6.0	5.5	* 5.8	5.5	* 6
Max Green Setting (Gmax), s	4.4	* 36	10.5	32.0	13.5	* 26	10.5	* 32
Max Q Clear Time (g_c+I1), s	4.6	28.0	12.5	11.7	7.6	16.1	7.1	9.8
Green Ext Time (p_c), s	0.0	5.0	0.0	8.8	0.1	9.7	0.0	9.3

Intersection Summary	
HCM 2010 Ctrl Delay	56.6
HCM 2010 LOS	E

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	250
Future Volume (veh/h)	250
Number	12
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.99
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	272
Adj No. of Lanes	1
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	544
Arrive On Green	0.35
Sat Flow, veh/h	1563
Grp Volume(v), veh/h	272
Grp Sat Flow(s),veh/h/ln	1563
Q Serve(g_s), s	13.0
Cycle Q Clear(g_c), s	13.0
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	544
V/C Ratio(X)	0.50
Avail Cap(c_a), veh/h	586
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	24.3
Incr Delay (d2), s/veh	1.5
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	5.8
LnGrp Delay(d),s/veh	25.8
LnGrp LOS	C
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1260	0	350	0	0	0	0	1639	110	0	1476	400
Future Volume (veh/h)	1260	0	350	0	0	0	0	1639	110	0	1476	400
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863				0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	1370	0	380				0	1782	0	0	1604	0
Adj No. of Lanes	3	0	2				0	4	1	0	3	1
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2				0	2	2	0	2	2
Cap, veh/h	1844	0	1027				0	3276	696	0	2457	696
Arrive On Green	0.37	0.00	0.37				0.00	0.44	0.00	0.00	0.44	0.00
Sat Flow, veh/h	5003	0	2787				0	7451	1583	0	5588	1583
Grp Volume(v), veh/h	1370	0	380				0	1782	0	0	1604	0
Grp Sat Flow(s),veh/h/ln	1668	0	1393				0	1863	1583	0	1863	1583
Q Serve(g_s), s	11.4	0.0	4.8				0.0	8.4	0.0	0.0	10.8	0.0
Cycle Q Clear(g_c), s	11.4	0.0	4.8				0.0	8.4	0.0	0.0	10.8	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	1844	0	1027				0	3276	696	0	2457	696
V/C Ratio(X)	0.74	0.00	0.37				0.00	0.54	0.00	0.00	0.65	0.00
Avail Cap(c_a), veh/h	2139	0	1191				0	3994	849	0	2949	835
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	13.2	0.0	11.1				0.0	9.9	0.0	0.0	10.6	0.0
Incr Delay (d2), s/veh	1.2	0.0	0.2				0.0	0.1	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	1.8				0.0	4.3	0.0	0.0	5.5	0.0
LnGrp Delay(d),s/veh	14.4	0.0	11.3				0.0	9.9	0.0	0.0	10.8	0.0
LnGrp LOS	B		B					A			B	
Approach Vol, veh/h		1750						1782			1604	
Approach Delay, s/veh		13.7						9.9			10.8	
Approach LOS		B						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		25.8		22.2		25.8		
Change Period (Y+Rc), s		* 4.7		4.5		4.7		
Max Green Setting (Gmax), s		* 26		20.5		25.3		
Max Q Clear Time (g_c+I1), s		10.4		13.4		12.8		
Green Ext Time (p_c), s		9.3		4.3		8.1		

Intersection Summary	
HCM 2010 Ctrl Delay	11.5
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	270	0	640	0	2479	390	0	1616	1350
Future Volume (veh/h)	0	0	0	270	0	640	0	2479	390	0	1616	1350
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	0	1863	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h				293	0	696	0	2695	0	0	1757	0
Adj No. of Lanes				2	0	2	0	3	1	0	3	2
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				969	0	784	0	3308	937	0	3010	1650
Arrive On Green				0.28	0.00	0.28	0.00	0.59	0.00	0.00	0.59	0.00
Sat Flow, veh/h				3442	0	2787	0	5588	1583	0	5253	2787
Grp Volume(v), veh/h				293	0	696	0	2695	0	0	1757	0
Grp Sat Flow(s),veh/h/ln				1721	0	1393	0	1863	1583	0	1695	1393
Q Serve(g_s), s				5.0	0.0	17.9	0.0	28.5	0.0	0.0	16.2	0.0
Cycle Q Clear(g_c), s				5.0	0.0	17.9	0.0	28.5	0.0	0.0	16.2	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				969	0	784	0	3308	937	0	3010	1650
V/C Ratio(X)				0.30	0.00	0.89	0.00	0.81	0.00	0.00	0.58	0.00
Avail Cap(c_a), veh/h				1032	0	836	0	3598	1019	0	3254	1783
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				21.2	0.0	25.8	0.0	12.1	0.0	0.0	9.5	0.0
Incr Delay (d2), s/veh				0.2	0.0	11.0	0.0	1.3	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.4	0.0	8.1	0.0	14.9	0.0	0.0	7.5	0.0
LnGrp Delay(d),s/veh				21.3	0.0	36.8	0.0	13.3	0.0	0.0	9.7	0.0
LnGrp LOS				C		D		B			A	
Approach Vol, veh/h					989			2695			1757	
Approach Delay, s/veh					32.2			13.3			9.7	
Approach LOS					C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		49.4				49.4		25.6
Change Period (Y+Rc), s		* 5				5.0		4.5
Max Green Setting (Gmax), s		* 48				48.0		22.5
Max Q Clear Time (g_c+I1), s		30.5				18.2		19.9
Green Ext Time (p_c), s		13.9				20.3		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	15.6
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	130	40	316	60	20	60	30	364	2635	20	60	2520
Future Volume (veh/h)	130	40	316	60	20	60	30	364	2635	20	60	2520
Number	7	4	14	3	8	18		1	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00		1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1900		1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	141	162	264	65	22	65		396	2864	22	65	2739
Adj No. of Lanes	0	1	1	1	1	0		2	3	0	1	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2
Cap, veh/h	164	188	304	132	31	91		308	2595	20	83	2306
Arrive On Green	0.19	0.19	0.19	0.07	0.07	0.07		0.09	0.50	0.50	0.05	0.45
Sat Flow, veh/h	847	973	1573	1774	415	1226		3442	5206	40	1774	5085
Grp Volume(v), veh/h	303	0	264	65	0	87		396	1863	1023	65	2739
Grp Sat Flow(s),veh/h/ln	1820	0	1573	1774	0	1641		1721	1695	1856	1774	1695
Q Serve(g_s), s	17.8	0.0	18.0	3.9	0.0	5.7		9.9	55.2	55.2	4.0	50.2
Cycle Q Clear(g_c), s	17.8	0.0	18.0	3.9	0.0	5.7		9.9	55.2	55.2	4.0	50.2
Prop In Lane	0.47		1.00	1.00		0.75		1.00		0.02	1.00	
Lane Grp Cap(c), veh/h	352	0	304	132	0	122		308	1690	925	83	2306
V/C Ratio(X)	0.86	0.00	0.87	0.49	0.00	0.71		1.29	1.10	1.11	0.78	1.19
Avail Cap(c_a), veh/h	526	0	455	513	0	474		308	1690	925	179	2306
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	0.0	43.3	49.2	0.0	50.1		50.4	27.8	27.8	52.2	30.3
Incr Delay (d2), s/veh	6.4	0.0	7.9	1.1	0.0	2.9		151.4	55.4	63.1	5.8	89.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	0.0	8.5	2.0	0.0	2.7		11.1	38.6	44.2	2.1	42.3
LnGrp Delay(d),s/veh	49.6	0.0	51.2	50.3	0.0	53.0		201.8	83.2	90.9	58.0	119.5
LnGrp LOS	D		D	D		D		F	F	F	E	F
Approach Vol, veh/h		567			152				3282			2934
Approach Delay, s/veh		50.3			51.8				99.9			113.6
Approach LOS		D			D				F			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.0	55.1		26.9	10.0	60.1		13.7
Change Period (Y+Rc), s	* 5.1	* 4.9		5.5	* 4.8	* 4.9		5.5
Max Green Setting (Gmax), s	* 9.9	* 50		32.0	* 11	* 49		32.0
Max Q Clear Time (g_c+I1), s	11.9	52.2		20.0	6.0	57.2		7.7
Green Ext Time (p_c), s	0.0	0.0		0.7	0.0	0.0		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	100.6
HCM 2010 LOS	F

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	120
Future Volume (veh/h)	120
Number	12
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.97
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	130
Adj No. of Lanes	1
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	699
Arrive On Green	0.45
Sat Flow, veh/h	1542
Grp Volume(v), veh/h	130
Grp Sat Flow(s),veh/h/ln	1542
Q Serve(g_s), s	5.6
Cycle Q Clear(g_c), s	5.6
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	699
V/C Ratio(X)	0.19
Avail Cap(c_a), veh/h	699
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	18.1
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	2.4
LnGrp Delay(d),s/veh	18.1
LnGrp LOS	B
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1160	20	20	1161	1539	340
Future Volume (veh/h)	1160	20	20	1161	1539	340
Number	7	14	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	1261	22	22	1262	1673	370
Adj No. of Lanes	2	1	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1298	621	27	1860	1654	740
Arrive On Green	0.38	0.38	0.02	0.53	0.47	0.47
Sat Flow, veh/h	3442	1583	1774	3632	3632	1583
Grp Volume(v), veh/h	1261	22	22	1262	1673	370
Grp Sat Flow(s),veh/h/ln	1721	1583	1774	1770	1770	1583
Q Serve(g_s), s	45.9	1.1	1.6	33.5	59.6	20.7
Cycle Q Clear(g_c), s	45.9	1.1	1.6	33.5	59.6	20.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	1298	621	27	1860	1654	740
V/C Ratio(X)	0.97	0.04	0.82	0.68	1.01	0.50
Avail Cap(c_a), veh/h	1309	626	56	1926	1654	740
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	23.9	62.6	22.3	34.0	23.6
Incr Delay (d2), s/veh	18.2	0.0	19.3	0.7	25.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.0	1.3	0.9	16.5	34.7	9.1
LnGrp Delay(d),s/veh	57.3	23.9	81.9	23.0	58.9	23.8
LnGrp LOS	E	C	F	C	F	C
Approach Vol, veh/h	1283			1284	2043	
Approach Delay, s/veh	56.7			24.0	52.6	
Approach LOS	E			C	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	7.4	66.5		53.6		73.9		
Change Period (Y+Rc), s	5.5	* 6.9		5.5		* 6.9		
Max Green Setting (Gmax), s	4.0	* 60		48.5		* 69		
Max Q Clear Time (g_c+I1), s	3.6	61.6		47.9		35.5		
Green Ext Time (p_c), s	0.0	0.0		0.2		9.5		

Intersection Summary	
HCM 2010 Ctrl Delay	45.8
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	894	1447	0	1036	120	50	783
Future Volume (veh/h)	894	1447	0	1036	120	50	783
Number	1	6		2	12	3	18
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863		1863	1863	1863	1863
Adj Flow Rate, veh/h	972	1573		1126	130	54	851
Adj No. of Lanes	2	2		2	1	1	1
Peak Hour Factor	0.92	0.92		0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2		2	2	2	2
Cap, veh/h	1034	2313		1042	466	370	330
Arrive On Green	0.30	0.65		0.29	0.29	0.21	0.21
Sat Flow, veh/h	3442	3632		3632	1583	1774	1583
Grp Volume(v), veh/h	972	1573		1126	130	54	851
Grp Sat Flow(s),veh/h/ln	1721	1770		1770	1583	1774	1583
Q Serve(g_s), s	24.4	24.6		26.1	5.6	2.2	18.5
Cycle Q Clear(g_c), s	24.4	24.6		26.1	5.6	2.2	18.5
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1034	2313		1042	466	370	330
V/C Ratio(X)	0.94	0.68		1.08	0.28	0.15	2.57
Avail Cap(c_a), veh/h	1087	2313		1042	466	370	330
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.2	9.6		31.3	24.0	28.6	35.1
Incr Delay (d2), s/veh	14.3	0.7		52.2	0.1	0.1	717.5
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.7	12.0		20.2	2.5	1.1	74.0
LnGrp Delay(d),s/veh	44.5	10.2		83.5	24.2	28.7	752.6
LnGrp LOS	D	B		F	C	C	F
Approach Vol, veh/h		2545		1256		905	
Approach Delay, s/veh		23.3		77.4		709.4	
Approach LOS		C		E		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	31.8	32.8				64.6		24.0
Change Period (Y+Rc), s	* 5.2	* 6.7				* 6.7		5.5
Max Green Setting (Gmax), s	* 28	* 26				* 50		18.5
Max Q Clear Time (g_c+I1), s	26.4	28.1				26.6		20.5
Green Ext Time (p_c), s	0.2	0.0				7.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	169.7
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	170	10	180	70	0	10	0	110	0	0	0
Future Volume (veh/h)	0	170	10	180	70	0	10	0	110	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	185	11	196	76	0	11	0	120	0	0	0
Adj No. of Lanes	1	2	1	1	2	1	1	3	1	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	4	410	184	188	1124	503	25	2500	778	4	1942	605
Arrive On Green	0.00	0.12	0.12	0.11	0.32	0.00	0.01	0.00	0.49	0.00	0.00	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	0	185	11	196	76	0	11	0	120	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.0	2.3	0.3	5.0	0.7	0.0	0.3	0.0	2.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	2.3	0.3	5.0	0.7	0.0	0.3	0.0	2.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	4	410	184	188	1124	503	25	2500	778	4	1942	605
V/C Ratio(X)	0.00	0.45	0.06	1.04	0.07	0.00	0.44	0.00	0.15	0.00	0.00	0.00
Avail Cap(c_a), veh/h	188	1352	605	188	1352	605	188	2500	778	188	1942	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	19.4	18.5	21.1	11.2	0.0	23.0	0.0	6.6	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	0.1	76.9	0.0	0.0	11.4	0.0	0.4	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.1	0.1	6.4	0.3	0.0	0.2	0.0	0.9	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	20.2	18.7	98.1	11.2	0.0	34.4	0.0	7.0	0.0	0.0	0.0
LnGrp LOS		C	B	F	B		C		A			
Approach Vol, veh/h		196			272			131			0	
Approach Delay, s/veh		20.1			73.8			9.3			0.0	
Approach LOS		C			E			A				

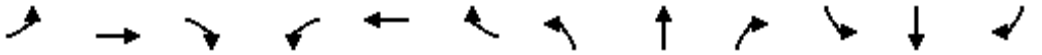
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	27.7	9.5	10.0	5.2	22.5	0.0	19.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.0	5.0	18.0	5.0	18.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	0.0	4.0	7.0	4.3	2.3	0.0	0.0	2.7
Green Ext Time (p_c), s	0.0	0.3	0.0	1.3	0.0	0.0	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	42.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	470	380	340	0	160	170	230	919	0	280	1033	370
Future Volume (veh/h)	470	380	340	0	160	170	230	919	0	280	1033	370
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	511	413	370	0	174	185	250	999	0	304	1123	402
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	608	1425	638	5	562	252	334	1435	447	391	1519	473
Arrive On Green	0.18	0.40	0.40	0.00	0.16	0.16	0.10	0.28	0.00	0.11	0.30	0.30
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	511	413	370	0	174	185	250	999	0	304	1123	402
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	9.6	5.3	12.2	0.0	2.9	7.5	4.7	11.8	0.0	5.8	13.3	16.0
Cycle Q Clear(g_c), s	9.6	5.3	12.2	0.0	2.9	7.5	4.7	11.8	0.0	5.8	13.3	16.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	608	1425	638	5	562	252	334	1435	447	391	1519	473
V/C Ratio(X)	0.84	0.29	0.58	0.00	0.31	0.74	0.75	0.70	0.00	0.78	0.74	0.85
Avail Cap(c_a), veh/h	642	1425	638	257	951	426	334	1435	447	391	1519	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	13.5	15.6	0.0	24.9	26.8	29.4	21.5	0.0	28.9	21.1	22.1
Incr Delay (d2), s/veh	9.4	0.1	1.3	0.0	0.3	4.2	9.0	2.8	0.0	9.6	3.3	17.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	2.6	5.5	0.0	1.5	3.5	2.7	5.8	0.0	3.3	6.7	9.2
LnGrp Delay(d),s/veh	36.1	13.6	16.9	0.0	25.2	31.0	38.4	24.3	0.0	38.5	24.4	39.3
LnGrp LOS	D	B	B		C	C	D	C		D	C	D
Approach Vol, veh/h		1294			359			1249			1829	
Approach Delay, s/veh		23.4			28.2			27.1			30.0	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	23.4	0.0	31.5	11.0	24.5	16.3	15.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.6	18.9	5.0	25.5	6.5	20.0	12.5	18.0
Max Q Clear Time (g_c+I1), s	7.8	13.8	0.0	14.2	6.7	18.0	11.6	9.5
Green Ext Time (p_c), s	0.0	4.7	0.0	4.6	0.0	1.9	0.2	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	27.3
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	140	50	56	100	10	40	351	14	10	681	280
Future Volume (veh/h)	250	140	50	56	100	10	40	351	14	10	681	280
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	272	152	54	61	109	11	43	382	15	11	740	304
Adj No. of Lanes	1	2	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	324	864	387	98	217	185	78	1271	569	25	1166	521
Arrive On Green	0.18	0.24	0.24	0.06	0.12	0.12	0.04	0.36	0.36	0.01	0.33	0.33
Sat Flow, veh/h	1774	3539	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	272	152	54	61	109	11	43	382	15	11	740	304
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	8.1	1.9	1.5	1.8	3.0	0.3	1.3	4.3	0.3	0.3	9.7	8.8
Cycle Q Clear(g_c), s	8.1	1.9	1.5	1.8	3.0	0.3	1.3	4.3	0.3	0.3	9.7	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	324	864	387	98	217	185	78	1271	569	25	1166	521
V/C Ratio(X)	0.84	0.18	0.14	0.62	0.50	0.06	0.55	0.30	0.03	0.44	0.63	0.58
Avail Cap(c_a), veh/h	352	1449	648	207	610	519	161	1271	569	161	1166	521
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.7	16.4	16.3	25.4	22.8	21.6	25.7	12.7	11.4	26.9	15.6	15.3
Incr Delay (d2), s/veh	15.4	0.1	0.2	6.4	1.8	0.1	6.0	0.6	0.1	11.7	2.6	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.9	0.7	1.1	1.7	0.2	0.8	2.2	0.2	0.2	5.2	4.5
LnGrp Delay(d),s/veh	37.0	16.5	16.4	31.8	24.6	21.7	31.8	13.3	11.5	38.6	18.3	20.0
LnGrp LOS	D	B	B	C	C	C	C	B	B	D	B	C
Approach Vol, veh/h		478			181			440			1055	
Approach Delay, s/veh		28.2			26.8			15.0			19.0	
Approach LOS		C			C			B			B	

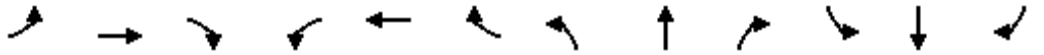
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.3	24.2	7.5	17.9	6.9	22.6	14.5	10.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.1	6.4	22.5	5.0	18.1	10.9	18.0
Max Q Clear Time (g_c+I1), s	2.3	6.3	3.8	3.9	3.3	11.7	10.1	5.0
Green Ext Time (p_c), s	0.0	6.7	0.0	1.6	0.0	4.2	0.1	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	20.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	740	526	56	350	90	295	216	64	160	384	40
Future Volume (veh/h)	20	740	526	56	350	90	295	216	64	160	384	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	22	804	572	61	380	98	321	235	70	174	417	43
Adj No. of Lanes	2	3	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	88	1569	488	183	1189	532	469	912	408	277	715	320
Arrive On Green	0.03	0.31	0.31	0.05	0.34	0.34	0.14	0.26	0.26	0.08	0.20	0.20
Sat Flow, veh/h	3442	5085	1583	3442	3539	1583	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	22	804	572	61	380	98	321	235	70	174	417	43
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1770	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	0.4	7.8	18.5	1.0	4.8	2.6	5.3	3.2	2.1	2.9	6.4	1.3
Cycle Q Clear(g_c), s	0.4	7.8	18.5	1.0	4.8	2.6	5.3	3.2	2.1	2.9	6.4	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	88	1569	488	183	1189	532	469	912	408	277	715	320
V/C Ratio(X)	0.25	0.51	1.17	0.33	0.32	0.18	0.68	0.26	0.17	0.63	0.58	0.13
Avail Cap(c_a), veh/h	287	1569	488	287	1189	532	1033	1770	792	488	1210	541
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.7	17.0	20.7	27.4	14.8	14.1	24.7	17.7	17.3	26.7	21.6	19.6
Incr Delay (d2), s/veh	1.5	0.3	97.1	1.1	0.2	0.2	1.8	0.1	0.2	2.3	0.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.7	21.2	0.5	2.3	1.2	2.7	1.6	0.9	1.5	3.2	0.6
LnGrp Delay(d),s/veh	30.1	17.3	117.8	28.4	15.0	14.3	26.5	17.8	17.5	29.1	22.4	19.8
LnGrp LOS	C	B	F	C	B	B	C	B	B	C	C	B
Approach Vol, veh/h		1398			539			626			634	
Approach Delay, s/veh		58.6			16.4			22.2			24.1	
Approach LOS		E			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	20.0	7.7	23.0	12.7	16.6	6.0	24.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.5	30.0	5.0	18.5	18.0	20.5	5.0	18.5
Max Q Clear Time (g_c+I1), s	4.9	5.2	3.0	20.5	7.3	8.4	2.4	6.8
Green Ext Time (p_c), s	0.2	5.0	0.0	0.0	0.8	3.7	0.0	7.1

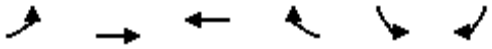
Intersection Summary	
HCM 2010 Ctrl Delay	37.5
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	180	120	50	90	70	70	103	40	90	115	20
Future Volume (veh/h)	30	180	120	50	90	70	70	103	40	90	115	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	33	196	130	54	98	76	76	112	43	98	125	22
Adj No. of Lanes	1	1	1	2	1	1	1	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	318	270	179	347	295	113	1274	570	250	1305	584
Arrive On Green	0.04	0.17	0.17	0.05	0.19	0.19	0.06	0.36	0.36	0.07	0.37	0.37
Sat Flow, veh/h	1774	1863	1583	3442	1863	1583	1774	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	33	196	130	54	98	76	76	112	43	98	125	22
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1721	1863	1583	1774	1770	1583	1721	1770	1583
Q Serve(g_s), s	1.0	5.1	3.9	0.8	2.4	2.1	2.2	1.1	0.9	1.4	1.2	0.5
Cycle Q Clear(g_c), s	1.0	5.1	3.9	0.8	2.4	2.1	2.2	1.1	0.9	1.4	1.2	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	65	318	270	179	347	295	113	1274	570	250	1305	584
V/C Ratio(X)	0.51	0.62	0.48	0.30	0.28	0.26	0.67	0.09	0.08	0.39	0.10	0.04
Avail Cap(c_a), veh/h	170	642	546	330	642	546	187	1274	570	343	1305	584
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	20.1	19.6	23.8	18.3	18.2	23.9	11.0	11.0	23.1	10.8	10.5
Incr Delay (d2), s/veh	6.1	2.0	1.3	0.9	0.4	0.5	6.7	0.1	0.3	1.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.8	1.8	0.4	1.2	1.0	1.3	0.6	0.4	0.7	0.6	0.2
LnGrp Delay(d),s/veh	30.8	22.0	20.9	24.8	18.7	18.6	30.6	11.2	11.2	24.1	10.9	10.7
LnGrp LOS	C	C	C	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		359			228			231			245	
Approach Delay, s/veh		22.4			20.1			17.6			16.2	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	23.3	7.2	13.4	7.8	23.8	6.4	14.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.2	18.8	5.0	18.0	5.5	18.5	5.0	18.0
Max Q Clear Time (g_c+I1), s	3.4	3.1	2.8	7.1	4.2	3.2	3.0	4.4
Green Ext Time (p_c), s	0.0	1.4	0.0	1.8	0.0	1.4	0.0	2.0

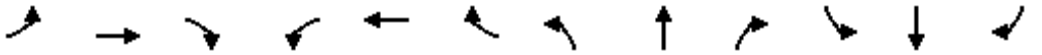
Intersection Summary	
HCM 2010 Ctrl Delay	19.4
HCM 2010 LOS	B



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	0	0	0	0	30
Future Volume (veh/h)	30	0	0	0	0	30
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	33	0	0	0	0	33
Adj No. of Lanes	2	2	2	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	139	143	12	6	1145	1022
Arrive On Green	0.04	0.00	0.00	0.00	0.00	0.65
Sat Flow, veh/h	3442	3632	-82054	1583	1774	1583
Grp Volume(v), veh/h	33	0	0	0	0	33
Grp Sat Flow(s),veh/h/ln	1721	1770	1770	1583	1774	1583
Q Serve(g_s), s	0.3	0.0	0.0	0.0	0.0	0.2
Cycle Q Clear(g_c), s	0.3	0.0	0.0	0.0	0.0	0.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	139	143	12	6	1145	1022
V/C Ratio(X)	0.24	0.00	0.00	0.00	0.00	0.03
Avail Cap(c_a), veh/h	601	3397	2223	995	1145	1022
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	13.3	0.0	0.0	0.0	0.0	1.8
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.0	0.0	0.4
LnGrp Delay(d),s/veh	14.2	0.0	0.0	0.0	0.0	1.9
LnGrp LOS	B					A
Approach Vol, veh/h		33	0		33	
Approach Delay, s/veh		14.2	0.0		1.9	
Approach LOS		B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				5.7		23.0	5.7	0.0
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				27.5		18.5	5.0	18.0
Max Q Clear Time (g_c+I1), s				0.0		2.2	2.3	0.0
Green Ext Time (p_c), s				0.0		0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	8.0
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	320	90	100	100	0	70	0	20	0	0	0
Future Volume (veh/h)	0	320	90	100	100	0	70	0	20	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	348	98	109	109	0	76	0	22	0	0	0
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	8	1345	602	613	1345	602	149	412	351	8	8	7
Arrive On Green	0.00	0.38	0.38	0.38	0.38	0.00	0.08	0.00	0.22	0.00	0.00	0.00
Sat Flow, veh/h	1774	3539	1583	940	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	0	348	98	109	109	0	76	0	22	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	940	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.0	1.5	0.9	2.0	0.4	0.0	0.9	0.0	0.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	1.5	0.9	3.6	0.4	0.0	0.9	0.0	0.2	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	8	1345	602	613	1345	602	149	412	351	8	8	7
V/C Ratio(X)	0.00	0.26	0.16	0.18	0.08	0.00	0.51	0.00	0.06	0.00	0.00	0.00
Avail Cap(c_a), veh/h	393	4310	1928	1005	2821	1262	432	1567	1332	393	1526	1297
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	4.8	4.6	6.0	4.5	0.0	9.9	0.0	6.9	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.1	0.0	0.0	2.7	0.0	0.1	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.7	0.4	0.5	0.2	0.0	0.6	0.0	0.1	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	4.9	4.8	6.2	4.5	0.0	12.6	0.0	7.0	0.0	0.0	0.0
LnGrp LOS		A	A	A	A		B		A			
Approach Vol, veh/h		446			218			98			0	
Approach Delay, s/veh		4.9			5.3			11.3			0.0	
Approach LOS		A			A			B				

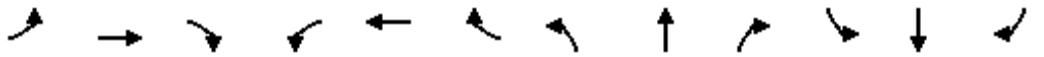
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	9.5		13.1	6.4	3.1	0.0	13.1
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0		27.5	5.5	18.5	5.0	18.0
Max Q Clear Time (g_c+I1), s	0.0	2.2		3.5	2.9	0.0	0.0	5.6
Green Ext Time (p_c), s	0.0	0.0		4.0	0.0	0.0	0.0	3.2

Intersection Summary	
HCM 2010 Ctrl Delay	5.8
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	10	70	10	10	0	20	20	10	0	20	30
Future Volume (veh/h)	20	10	70	10	10	0	20	20	10	0	20	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	22	11	76	11	11	0	22	22	11	0	22	33
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	48	183	156	25	160	136	48	1052	894	4	801	681
Arrive On Green	0.03	0.10	0.10	0.01	0.09	0.00	0.03	0.56	0.56	0.00	0.43	0.43
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	22	11	76	11	11	0	22	22	11	0	22	33
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.5	0.2	1.9	0.3	0.2	0.0	0.5	0.2	0.1	0.0	0.3	0.5
Cycle Q Clear(g_c), s	0.5	0.2	1.9	0.3	0.2	0.0	0.5	0.2	0.1	0.0	0.3	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	48	183	156	25	160	136	48	1052	894	4	801	681
V/C Ratio(X)	0.46	0.06	0.49	0.43	0.07	0.00	0.46	0.02	0.01	0.00	0.03	0.05
Avail Cap(c_a), veh/h	212	801	681	212	801	681	212	1052	894	212	801	681
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	20.1	17.1	17.9	20.5	17.6	0.0	20.1	4.0	4.0	0.0	6.9	6.9
Incr Delay (d2), s/veh	6.7	0.1	2.4	11.2	0.2	0.0	6.7	0.0	0.0	0.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	0.9	0.2	0.1	0.0	0.3	0.1	0.1	0.0	0.2	0.2
LnGrp Delay(d),s/veh	26.8	17.2	20.2	31.6	17.8	0.0	26.8	4.1	4.0	0.0	6.9	7.1
LnGrp LOS	C	B	C	C	B		C	A	A		A	A
Approach Vol, veh/h		109			22			55			55	
Approach Delay, s/veh		21.2			24.7			13.1			7.0	
Approach LOS		C			C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	28.1	5.1	8.6	5.6	22.5	5.6	8.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.0	5.0	18.0	5.0	18.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	0.0	2.2	2.3	3.9	2.5	2.5	2.5	2.2
Green Ext Time (p_c), s	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	16.5
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	480	210	30	310	20	60	10	20	30	10	30
Future Volume (veh/h)	70	480	210	30	310	20	60	10	20	30	10	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	76	522	228	33	337	22	65	11	22	33	11	33
Adj No. of Lanes	1	3	1	2	2	1	2	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	111	1243	387	124	771	345	198	656	558	64	616	524
Arrive On Green	0.06	0.24	0.24	0.04	0.22	0.22	0.06	0.35	0.35	0.04	0.33	0.33
Sat Flow, veh/h	1774	5085	1583	3442	3539	1583	3442	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	76	522	228	33	337	22	65	11	22	33	11	33
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1770	1583	1721	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.3	4.7	6.9	0.5	4.5	0.6	1.0	0.2	0.5	1.0	0.2	0.8
Cycle Q Clear(g_c), s	2.3	4.7	6.9	0.5	4.5	0.6	1.0	0.2	0.5	1.0	0.2	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	111	1243	387	124	771	345	198	656	558	64	616	524
V/C Ratio(X)	0.68	0.42	0.59	0.27	0.44	0.06	0.33	0.02	0.04	0.52	0.02	0.06
Avail Cap(c_a), veh/h	163	1683	524	316	1171	524	316	656	558	163	616	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.0	17.3	18.1	25.5	18.4	16.9	24.6	11.5	11.6	25.7	12.2	12.4
Incr Delay (d2), s/veh	7.1	0.2	1.4	1.1	0.4	0.1	1.0	0.0	0.1	6.3	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	2.2	3.1	0.3	2.2	0.3	0.5	0.1	0.2	0.6	0.1	0.4
LnGrp Delay(d),s/veh	32.1	17.5	19.6	26.6	18.8	16.9	25.6	11.5	11.7	32.0	12.3	12.7
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		826			392			98			77	
Approach Delay, s/veh		19.4			19.3			20.9			20.9	
Approach LOS		B			B			C			C	

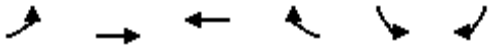
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	23.7	6.5	17.8	7.6	22.5	7.9	16.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.0	5.0	18.0	5.0	18.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	3.0	2.5	2.5	8.9	3.0	2.8	4.3	6.5
Green Ext Time (p_c), s	0.0	0.2	0.0	4.4	0.0	0.2	0.0	5.1

Intersection Summary	
HCM 2010 Ctrl Delay	19.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	202	50	60	197	20	20	10	30	20	10	22
Future Volume (veh/h)	17	202	50	60	197	20	20	10	30	20	10	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	18	220	54	65	214	22	22	11	33	22	11	24
Adj No. of Lanes	2	1	1	1	1	1	2	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	76	354	301	106	424	361	91	674	573	47	674	573
Arrive On Green	0.02	0.19	0.19	0.06	0.23	0.23	0.03	0.36	0.36	0.03	0.36	0.36
Sat Flow, veh/h	3442	1863	1583	1774	1863	1583	3442	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	18	220	54	65	214	22	22	11	33	22	11	24
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1863	1583	1721	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.3	5.4	1.4	1.8	5.0	0.5	0.3	0.2	0.7	0.6	0.2	0.5
Cycle Q Clear(g_c), s	0.3	5.4	1.4	1.8	5.0	0.5	0.3	0.2	0.7	0.6	0.2	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	76	354	301	106	424	361	91	674	573	47	674	573
V/C Ratio(X)	0.24	0.62	0.18	0.62	0.50	0.06	0.24	0.02	0.06	0.47	0.02	0.04
Avail Cap(c_a), veh/h	346	674	573	178	674	573	346	674	573	178	674	573
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.9	18.5	16.9	22.8	16.8	15.0	23.7	10.2	10.3	23.9	10.2	10.3
Incr Delay (d2), s/veh	1.6	1.8	0.3	5.7	0.9	0.1	1.4	0.0	0.2	7.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.9	0.6	1.0	2.7	0.2	0.2	0.1	0.3	0.4	0.1	0.2
LnGrp Delay(d),s/veh	25.5	20.3	17.2	28.5	17.7	15.1	25.1	10.2	10.5	31.1	10.2	10.4
LnGrp LOS	C	C	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		292			301			66			57	
Approach Delay, s/veh		20.0			19.8			15.3			18.3	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	22.5	7.5	14.0	5.8	22.5	5.6	15.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.0	5.0	18.0	5.0	18.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.6	2.7	3.8	7.4	2.3	2.5	2.3	7.0
Green Ext Time (p_c), s	0.0	0.2	0.0	2.1	0.0	0.2	0.0	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	19.4
HCM 2010 LOS	B



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	100	100	100	50	40	40
Future Volume (veh/h)	100	100	100	50	40	40
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	109	109	109	54	43	43
Adj No. of Lanes	1	2	2	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	196	1765	651	291	165	147
Arrive On Green	0.11	0.50	0.18	0.18	0.09	0.09
Sat Flow, veh/h	1774	3632	3632	1583	1774	1583
Grp Volume(v), veh/h	109	109	109	54	43	43
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1583	1774	1583
Q Serve(g_s), s	1.3	0.4	0.6	0.6	0.5	0.6
Cycle Q Clear(g_c), s	1.3	0.4	0.6	0.6	0.5	0.6
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	196	1765	651	291	165	147
V/C Ratio(X)	0.56	0.06	0.17	0.19	0.26	0.29
Avail Cap(c_a), veh/h	427	4465	2891	1293	1465	1308
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.3	2.9	7.6	7.6	9.3	9.3
Incr Delay (d2), s/veh	2.5	0.0	0.1	0.3	0.8	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.2	0.3	0.0	0.3	0.0
LnGrp Delay(d),s/veh	11.7	2.9	7.7	7.9	10.1	10.4
LnGrp LOS	B	A	A	A	B	B
Approach Vol, veh/h		218	163		86	
Approach Delay, s/veh		7.3	7.8		10.3	
Approach LOS		A	A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				15.5		6.5	6.9	8.6
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				27.8		18.2	5.3	18.0
Max Q Clear Time (g_c+I1), s				2.4		2.6	3.3	2.6
Green Ext Time (p_c), s				1.5		0.2	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	8.0
HCM 2010 LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	63	82	790	75	145	1090
Future Volume (veh/h)	63	82	790	75	145	1090
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	68	89	859	82	158	1185
Adj No. of Lanes	1	1	3	1	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	213	194	2983	929	1047	2076
Arrive On Green	0.12	0.12	0.59	0.59	0.59	0.59
Sat Flow, veh/h	1774	1615	5253	1583	1151	3632
Grp Volume(v), veh/h	68	89	859	82	158	1185
Grp Sat Flow(s),veh/h/ln	1774	1615	1695	1583	575	1770
Q Serve(g_s), s	1.1	1.6	2.6	0.7	2.4	6.4
Cycle Q Clear(g_c), s	1.1	1.6	2.6	0.7	5.0	6.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	213	194	2983	929	1047	2076
V/C Ratio(X)	0.32	0.46	0.29	0.09	0.15	0.57
Avail Cap(c_a), veh/h	1041	947	2983	929	1047	2076
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.4	12.6	3.2	2.8	4.4	3.9
Incr Delay (d2), s/veh	0.9	1.7	0.2	0.2	0.3	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.8	1.3	0.3	0.4	3.3
LnGrp Delay(d),s/veh	13.2	14.3	3.4	3.0	4.7	5.1
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	157		941			1343
Approach Delay, s/veh	13.8		3.4			5.0
Approach LOS	B		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		22.5				22.5		8.2
Change Period (Y+Rc), s		4.5				4.5		4.5
Max Green Setting (Gmax), s		18.0				18.0		18.0
Max Q Clear Time (g_c+I1), s		4.6				8.4		3.6
Green Ext Time (p_c), s		10.5				7.9		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	5.0
HCM 2010 LOS	A

Notes

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	68	24	36	600	640	181
Future Volume (veh/h)	68	24	36	600	640	181
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	74	26	39	652	696	197
Adj No. of Lanes	1	1	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	168	150	556	2137	2137	956
Arrive On Green	0.09	0.09	0.60	0.60	0.60	0.60
Sat Flow, veh/h	1774	1583	620	3632	3632	1583
Grp Volume(v), veh/h	74	26	39	652	696	197
Grp Sat Flow(s),veh/h/ln	1774	1583	620	1770	1770	1583
Q Serve(g_s), s	1.2	0.5	1.0	2.7	2.9	1.7
Cycle Q Clear(g_c), s	1.2	0.5	3.9	2.7	2.9	1.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	168	150	556	2137	2137	956
V/C Ratio(X)	0.44	0.17	0.07	0.31	0.33	0.21
Avail Cap(c_a), veh/h	1071	956	556	2137	2137	956
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.8	12.4	3.9	2.9	2.9	2.7
Incr Delay (d2), s/veh	1.8	0.5	0.2	0.4	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.2	0.2	1.4	1.5	0.8
LnGrp Delay(d),s/veh	14.6	13.0	4.1	3.2	3.3	3.2
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	100			691	893	
Approach Delay, s/veh	14.2			3.3	3.3	
Approach LOS	B			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		22.5		7.3		22.5		
Change Period (Y+Rc), s		4.5		4.5		4.5		
Max Green Setting (Gmax), s		18.0		18.0		18.0		
Max Q Clear Time (g_c+I1), s		5.9		3.2		4.9		
Green Ext Time (p_c), s		7.6		0.2		8.1		

Intersection Summary	
HCM 2010 Ctrl Delay	3.9
HCM 2010 LOS	A

Appendix F

Analysis Worksheets for Mitigated Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	325	4	5	459	1	9	142	31	0	2	12
Future Volume (veh/h)	59	325	4	5	459	1	9	142	31	0	2	12
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	65	357	4	5	499	1	13	203	44	0	3	17
Adj No. of Lanes	1	1	0	1	1	0	0	1	1	0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.92	0.92	0.92	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	104	706	8	12	617	1	18	285	258	0	181	154
Arrive On Green	0.06	0.38	0.38	0.01	0.33	0.33	0.16	0.16	0.16	0.00	0.10	0.10
Sat Flow, veh/h	1774	1839	21	1774	1858	4	112	1745	1583	0	1863	1583
Grp Volume(v), veh/h	65	0	361	5	0	500	216	0	44	0	3	17
Grp Sat Flow(s),veh/h/ln	1774	0	1859	1774	0	1862	1857	0	1583	0	1863	1583
Q Serve(g_s), s	1.8	0.0	7.7	0.1	0.0	12.6	5.7	0.0	1.2	0.0	0.1	0.5
Cycle Q Clear(g_c), s	1.8	0.0	7.7	0.1	0.0	12.6	5.7	0.0	1.2	0.0	0.1	0.5
Prop In Lane	1.00		0.01	1.00		0.00	0.06		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	104	0	714	12	0	618	303	0	258	0	181	154
V/C Ratio(X)	0.62	0.00	0.51	0.42	0.00	0.81	0.71	0.00	0.17	0.00	0.02	0.11
Avail Cap(c_a), veh/h	172	0	758	172	0	759	649	0	553	0	651	553
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	23.7	0.0	12.1	25.5	0.0	15.7	20.4	0.0	18.6	0.0	21.0	21.2
Incr Delay (d2), s/veh	6.0	0.0	0.6	21.9	0.0	5.4	3.1	0.0	0.3	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	4.0	0.1	0.0	7.3	3.1	0.0	0.6	0.0	0.0	0.2
LnGrp Delay(d),s/veh	29.7	0.0	12.7	47.4	0.0	21.1	23.5	0.0	18.9	0.0	21.1	21.6
LnGrp LOS	C		B	D		C	C		B		C	C
Approach Vol, veh/h		426			505			260			20	
Approach Delay, s/veh		15.3			21.4			22.8			21.5	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.8	24.3		12.9	7.5	21.6		9.5
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.0	21.0		18.0	5.0	21.0		18.0
Max Q Clear Time (g_c+I1), s	2.1	9.7		7.7	3.8	14.6		2.5
Green Ext Time (p_c), s	0.0	3.5		0.9	0.0	2.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	19.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	694	403	8	0	320	8	7	33	5	3	8	348
Future Volume (veh/h)	694	403	8	0	320	8	7	33	5	3	8	348
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	708	411	0	0	438	11	7	34	5	0	0	425
Adj No. of Lanes	1	1	1	1	1	0	0	1	0	0	1	2
Peak Hour Factor	0.98	0.98	0.98	0.73	0.73	0.73	0.98	0.98	0.98	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	729	1342	1140	2	472	12	12	57	8	0	180	1607
Arrive On Green	0.41	0.72	0.00	0.00	0.26	0.26	0.04	0.04	0.04	0.00	0.00	0.10
Sat Flow, veh/h	1774	1863	1583	1774	1809	45	275	1338	197	0	1863	3167
Grp Volume(v), veh/h	708	411	0	0	0	449	46	0	0	0	0	425
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1855	1810	0	0	0	1863	1583
Q Serve(g_s), s	44.5	9.0	0.0	0.0	0.0	26.9	2.8	0.0	0.0	0.0	0.0	8.7
Cycle Q Clear(g_c), s	44.5	9.0	0.0	0.0	0.0	26.9	2.8	0.0	0.0	0.0	0.0	8.7
Prop In Lane	1.00		1.00	1.00		0.02	0.15		0.11	0.00		1.00
Lane Grp Cap(c), veh/h	729	1342	1140	2	0	484	77	0	0	0	180	1607
V/C Ratio(X)	0.97	0.31	0.00	0.00	0.00	0.93	0.60	0.00	0.00	0.00	0.00	0.26
Avail Cap(c_a), veh/h	881	1427	1213	62	0	562	81	0	0	0	367	1924
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	32.9	5.7	0.0	0.0	0.0	41.0	53.5	0.0	0.0	0.0	0.0	15.9
Incr Delay (d2), s/veh	20.6	0.0	0.0	0.0	0.0	18.9	6.8	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.8	4.6	0.0	0.0	0.0	16.3	1.6	0.0	0.0	0.0	0.0	3.8
LnGrp Delay(d),s/veh	53.5	5.8	0.0	0.0	0.0	59.9	60.3	0.0	0.0	0.0	0.0	16.0
LnGrp LOS	D	A				E	E					B
Approach Vol, veh/h		1119			449			46			425	
Approach Delay, s/veh		36.0			59.9			60.3			16.0	
Approach LOS		D			E			E			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	52.3	35.7		16.6	0.0	88.0		9.2
Change Period (Y+Rc), s	5.5	6.0		* 5.6	5.5	* 6		4.4
Max Green Setting (Gmax), s	56.5	34.5		* 22	4.0	* 87		5.1
Max Q Clear Time (g_c+I1), s	46.5	28.9		10.7	0.0	11.0		4.8
Green Ext Time (p_c), s	0.2	0.9		0.3	0.0	1.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	37.6
HCM 2010 LOS	D

Notes

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (veh/h)	5	187	95	145	3	72	477	66	539	1875	122	3
Future Volume (veh/h)	5	187	95	145	3	72	477	66	539	1875	122	3
Number		7	4	14		3	8	18	5	2	12	
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		0.99	
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln		1863	1863	1863		1863	1863	1863	1863	1863	1863	
Adj Flow Rate, veh/h		205	104	159		81	536	74	586	2038	133	
Adj No. of Lanes		2	3	1		2	2	1	2	3	1	
Peak Hour Factor		0.91	0.91	0.91		0.89	0.89	0.89	0.92	0.92	0.92	
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	
Cap, veh/h		270	1107	640		133	629	282	642	2344	721	
Arrive On Green		0.08	0.22	0.22		0.04	0.18	0.18	0.19	0.46	0.46	
Sat Flow, veh/h		3442	5085	1583		3442	3539	1583	3442	5085	1564	
Grp Volume(v), veh/h		205	104	159		81	536	74	586	2038	133	
Grp Sat Flow(s),veh/h/ln		1721	1695	1583		1721	1770	1583	1721	1695	1564	
Q Serve(g_s), s		6.0	1.7	6.9		2.4	15.1	4.2	17.2	37.2	5.2	
Cycle Q Clear(g_c), s		6.0	1.7	6.9		2.4	15.1	4.2	17.2	37.2	5.2	
Prop In Lane		1.00		1.00		1.00		1.00	1.00		1.00	
Lane Grp Cap(c), veh/h		270	1107	640		133	629	282	642	2344	721	
V/C Ratio(X)		0.76	0.09	0.25		0.61	0.85	0.26	0.91	0.87	0.18	
Avail Cap(c_a), veh/h		651	1643	807		651	1140	510	651	3093	951	
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh		46.5	32.2	20.3		48.8	41.1	36.5	41.1	25.0	16.4	
Incr Delay (d2), s/veh		1.7	0.0	0.1		1.7	1.3	0.2	16.8	1.8	0.0	
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln		2.9	0.8	3.0		1.2	7.5	1.8	9.6	17.8	2.2	
LnGrp Delay(d),s/veh		48.2	32.2	20.4		50.4	42.3	36.7	57.9	26.8	16.4	
LnGrp LOS		D	C	C		D	D	D	E	C	B	
Approach Vol, veh/h			468				691			2757		
Approach Delay, s/veh			35.2				42.7			32.9		
Approach LOS			D				D			C		

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	54.9	9.5	29.2	24.7	39.6	13.6	25.1
Change Period (Y+Rc), s	5.5	* 7.4	5.5	* 6.8	5.5	* 7.4	5.5	6.8
Max Green Setting (Gmax), s	19.5	* 63	19.5	* 33	19.5	* 63	19.5	33.2
Max Q Clear Time (g_c+I1), s	4.4	39.2	4.4	8.9	19.2	15.0	8.0	17.1
Green Ext Time (p_c), s	0.0	8.4	0.0	1.2	0.0	9.4	0.1	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	34.0
HCM 2010 LOS	C

Notes

Movement	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (veh/h)	64	629	66
Future Volume (veh/h)	64	629	66
Number	1	6	16
Initial Q (Qb), veh	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863
Adj Flow Rate, veh/h	80	786	82
Adj No. of Lanes	2	3	1
Peak Hour Factor	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2
Cap, veh/h	132	1590	495
Arrive On Green	0.04	0.31	0.31
Sat Flow, veh/h	3442	5085	1583
Grp Volume(v), veh/h	80	786	82
Grp Sat Flow(s),veh/h/ln	1721	1695	1583
Q Serve(g_s), s	2.4	13.0	3.9
Cycle Q Clear(g_c), s	2.4	13.0	3.9
Prop In Lane	1.00		1.00
Lane Grp Cap(c), veh/h	132	1590	495
V/C Ratio(X)	0.61	0.49	0.17
Avail Cap(c_a), veh/h	651	3088	962
HCM Platoon Ratio	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.8	28.8	25.7
Incr Delay (d2), s/veh	1.7	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	6.1	1.7
LnGrp Delay(d),s/veh	50.5	28.9	25.7
LnGrp LOS	D	C	C
Approach Vol, veh/h		948	
Approach Delay, s/veh		30.4	
Approach LOS		C	
Timer			

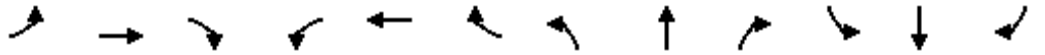
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	112	13	245	34	25	39	34	272	2440	20	36	3317
Future Volume (veh/h)	112	13	245	34	25	39	34	272	2440	20	36	3317
Number	7	4	14	3	8	18		1	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00		1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900		1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	129	15	282	43	32	49		280	2515	21	39	3567
Adj No. of Lanes	1	1	0	1	1	0		2	3	0	1	3
Peak Hour Factor	0.87	0.87	0.87	0.79	0.79	0.79		0.97	0.97	0.97	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2
Cap, veh/h	142	16	293	57	97	149		262	3445	29	49	3116
Arrive On Green	0.08	0.19	0.19	0.03	0.15	0.15		0.08	0.66	0.66	0.03	0.61
Sat Flow, veh/h	1774	80	1506	1774	664	1017		3442	5202	43	1774	5085
Grp Volume(v), veh/h	129	0	297	43	0	81		280	1638	898	39	3567
Grp Sat Flow(s),veh/h/ln	1774	0	1586	1774	0	1681		1721	1695	1855	1774	1695
Q Serve(g_s), s	17.9	0.0	46.1	6.0	0.0	10.7		18.9	78.3	78.6	5.4	152.0
Cycle Q Clear(g_c), s	17.9	0.0	46.1	6.0	0.0	10.7		18.9	78.3	78.6	5.4	152.0
Prop In Lane	1.00		0.95	1.00		0.60		1.00		0.02	1.00	
Lane Grp Cap(c), veh/h	142	0	308	57	0	246		262	2245	1229	49	3116
V/C Ratio(X)	0.91	0.00	0.96	0.75	0.00	0.33		1.07	0.73	0.73	0.79	1.14
Avail Cap(c_a), veh/h	187	0	316	62	0	246		262	2245	1229	86	3116
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	113.1	0.0	99.1	119.1	0.0	95.0		114.6	27.4	27.4	119.8	48.0
Incr Delay (d2), s/veh	30.2	0.0	40.0	32.5	0.0	0.3		74.7	1.1	2.0	9.8	69.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	0.0	23.6	3.5	0.0	5.0		11.7	37.0	40.8	2.8	91.0
LnGrp Delay(d),s/veh	143.4	0.0	139.0	151.5	0.0	95.3		189.2	28.4	29.4	129.7	117.4
LnGrp LOS	F		F	F		F		F	C	C	F	F
Approach Vol, veh/h		426			124				2816			3691
Approach Delay, s/veh		140.4			114.8				44.7			115.3
Approach LOS		F			F				D			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	156.9	13.5	53.7	11.7	169.2	25.4	41.7
Change Period (Y+Rc), s	* 5.1	* 4.9	5.5	5.5	* 4.8	* 4.9	5.5	5.5
Max Green Setting (Gmax), s	* 19	* 1.5E2	8.7	49.5	* 12	* 1.6E2	26.2	32.0
Max Q Clear Time (g_c+I1), s	20.9	154.0	8.0	48.1	7.4	80.6	19.9	12.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.1	0.0	62.2	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	88.7
HCM 2010 LOS	F

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	79
Future Volume (veh/h)	79
Number	12
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.98
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	85
Adj No. of Lanes	1
Peak Hour Factor	0.93
Percent Heavy Veh, %	2
Cap, veh/h	947
Arrive On Green	0.61
Sat Flow, veh/h	1545
Grp Volume(v), veh/h	85
Grp Sat Flow(s),veh/h/ln	1545
Q Serve(g_s), s	5.6
Cycle Q Clear(g_c), s	5.6
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	947
V/C Ratio(X)	0.09
Avail Cap(c_a), veh/h	947
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	19.7
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	2.4
LnGrp Delay(d),s/veh	19.7
LnGrp LOS	B
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	551	0	15	315	2	4	6	1	0	158	115
Future Volume (veh/h)	19	551	0	15	315	2	4	6	1	0	158	115
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	20	592	0	19	399	3	6	9	1	0	216	158
Adj No. of Lanes	1	1	0	1	1	0	0	1	1	0	1	1
Peak Hour Factor	0.93	0.93	0.93	0.79	0.79	0.79	0.70	0.70	0.70	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	43	772	0	41	763	6	15	22	32	0	325	277
Arrive On Green	0.02	0.41	0.00	0.02	0.41	0.41	0.02	0.02	0.02	0.00	0.17	0.17
Sat Flow, veh/h	1774	1863	0	1774	1846	14	730	1096	1583	0	1863	1583
Grp Volume(v), veh/h	20	592	0	19	0	402	15	0	1	0	216	158
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1774	0	1860	1826	0	1583	0	1863	1583
Q Serve(g_s), s	0.5	13.4	0.0	0.5	0.0	7.9	0.4	0.0	0.0	0.0	5.3	4.5
Cycle Q Clear(g_c), s	0.5	13.4	0.0	0.5	0.0	7.9	0.4	0.0	0.0	0.0	5.3	4.5
Prop In Lane	1.00		0.00	1.00		0.01	0.40		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	43	772	0	41	0	769	36	0	32	0	325	277
V/C Ratio(X)	0.46	0.77	0.00	0.46	0.00	0.52	0.41	0.00	0.03	0.00	0.66	0.57
Avail Cap(c_a), veh/h	181	1180	0	181	0	1178	672	0	582	0	685	582
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	12.3	0.0	23.6	0.0	10.7	23.7	0.0	23.5	0.0	18.9	18.5
Incr Delay (d2), s/veh	7.6	1.7	0.0	7.8	0.0	0.6	7.3	0.0	0.4	0.0	2.3	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	7.1	0.0	0.3	0.0	4.1	0.3	0.0	0.0	0.0	2.9	2.1
LnGrp Delay(d),s/veh	31.1	14.0	0.0	31.4	0.0	11.3	31.0	0.0	23.9	0.0	21.2	20.4
LnGrp LOS	C	B		C		B	C		C		C	C
Approach Vol, veh/h		612			421			16			374	
Approach Delay, s/veh		14.5			12.2			30.5			20.8	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.6	24.8		5.5	5.7	24.7		13.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.0	31.0		18.0	5.0	31.0		18.0
Max Q Clear Time (g_c+I1), s	2.5	15.4		2.4	2.5	9.9		7.3
Green Ext Time (p_c), s	0.0	4.9		0.0	0.0	5.5		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	15.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	268	352	7	1	443	9	7	15	1	11	35	762
Future Volume (veh/h)	268	352	7	1	443	9	7	15	1	11	35	762
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	288	378	0	1	461	9	8	18	1	0	0	857
Adj No. of Lanes	1	1	1	1	1	0	0	1	0	0	1	2
Peak Hour Factor	0.93	0.93	0.93	0.96	0.96	0.96	0.85	0.85	0.85	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	323	862	733	2	512	10	20	46	3	0	464	1350
Arrive On Green	0.18	0.46	0.00	0.00	0.28	0.28	0.04	0.04	0.04	0.00	0.00	0.25
Sat Flow, veh/h	1774	1863	1583	1774	1820	36	540	1216	68	0	1863	3099
Grp Volume(v), veh/h	288	378	0	1	0	470	27	0	0	0	0	857
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1856	1824	0	0	0	1863	1549
Q Serve(g_s), s	13.7	11.8	0.0	0.0	0.0	21.0	1.2	0.0	0.0	0.0	0.0	18.7
Cycle Q Clear(g_c), s	13.7	11.8	0.0	0.0	0.0	21.0	1.2	0.0	0.0	0.0	0.0	18.7
Prop In Lane	1.00		1.00	1.00		0.02	0.30		0.04	0.00		1.00
Lane Grp Cap(c), veh/h	323	862	733	2	0	522	69	0	0	0	464	1350
V/C Ratio(X)	0.89	0.44	0.00	0.49	0.00	0.90	0.39	0.00	0.00	0.00	0.00	0.64
Avail Cap(c_a), veh/h	504	1387	1179	401	0	1377	753	0	0	0	743	1814
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	34.4	15.6	0.0	43.0	0.0	29.8	40.5	0.0	0.0	0.0	0.0	19.3
Incr Delay (d2), s/veh	8.2	0.1	0.0	53.7	0.0	2.4	1.3	0.0	0.0	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	6.0	0.0	0.1	0.0	11.1	0.7	0.0	0.0	0.0	0.0	8.0
LnGrp Delay(d),s/veh	42.6	15.7	0.0	96.7	0.0	32.2	41.8	0.0	0.0	0.0	0.0	19.4
LnGrp LOS	D	B		F		C	D					B
Approach Vol, veh/h		666			471			27			857	
Approach Delay, s/veh		27.4			32.3			41.8			19.4	
Approach LOS		C			C			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	21.2	30.2		27.1	5.6	45.9		7.7
Change Period (Y+Rc), s	5.5	6.0		* 5.6	5.5	* 6		4.4
Max Green Setting (Gmax), s	24.5	64.0		* 34	19.5	* 64		35.6
Max Q Clear Time (g_c+I1), s	15.7	23.0		20.7	2.0	13.8		3.2
Green Ext Time (p_c), s	0.1	1.2		0.7	0.0	1.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.4
HCM 2010 LOS	C

Notes

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	5	58	305	452	137	107	104	180	805	111	3	243
Future Volume (veh/h)	5	58	305	452	137	107	104	180	805	111	3	243
Number		7	4	14	3	8	18	5	2	12		1
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0		0
Ped-Bike Adj(A_pbT)		1.00		1.00	1.00		0.99	1.00		0.99		1.00
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863	1863	1863	1863	1863	1863	1863		1863
Adj Flow Rate, veh/h		60	318	471	167	130	127	198	885	122		267
Adj No. of Lanes		2	3	1	2	2	1	2	3	1		2
Peak Hour Factor		0.96	0.96	0.96	0.82	0.82	0.82	0.91	0.91	0.91		0.91
Percent Heavy Veh, %		2	2	2	2	2	2	2	2	2		2
Cap, veh/h		98	1192	480	197	931	411	237	2206	678		315
Arrive On Green		0.03	0.23	0.23	0.06	0.26	0.26	0.07	0.43	0.43		0.09
Sat Flow, veh/h		3442	5085	1583	3442	3539	1563	3442	5085	1564		3442
Grp Volume(v), veh/h		60	318	471	167	130	127	198	885	122		267
Grp Sat Flow(s),veh/h/ln		1721	1695	1583	1721	1770	1563	1721	1695	1564		1721
Q Serve(g_s), s		2.4	7.0	32.3	6.6	3.9	9.0	7.8	16.4	6.6		10.5
Cycle Q Clear(g_c), s		2.4	7.0	32.3	6.6	3.9	9.0	7.8	16.4	6.6		10.5
Prop In Lane		1.00		1.00	1.00		1.00	1.00		1.00		1.00
Lane Grp Cap(c), veh/h		98	1192	480	197	931	411	237	2206	678		315
V/C Ratio(X)		0.61	0.27	0.98	0.85	0.14	0.31	0.83	0.40	0.18		0.85
Avail Cap(c_a), veh/h		162	1192	480	197	931	411	237	2206	678		440
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
Upstream Filter(I)		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh		66.2	43.1	47.6	64.3	38.8	40.7	63.4	26.7	24.0		61.6
Incr Delay (d2), s/veh		2.3	0.0	35.8	26.1	0.0	0.2	20.8	0.0	0.0		7.9
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
%ile BackOfQ(50%),veh/ln		1.2	3.3	22.6	3.9	1.9	3.9	4.4	7.7	2.9		5.4
LnGrp Delay(d),s/veh		68.4	43.1	83.4	90.5	38.8	40.9	84.1	26.8	24.0		69.5
LnGrp LOS		E	D	F	F	D	D	F	C	C		E
Approach Vol, veh/h			849			424			1205			
Approach Delay, s/veh			67.2			59.8			35.9			
Approach LOS			E			E			D			

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.1	67.2	13.4	39.1	15.0	70.3	9.4	43.1
Change Period (Y+Rc), s	5.5	* 7.4	5.5	* 6.8	5.5	* 7.4	5.5	6.8
Max Green Setting (Gmax), s	17.6	* 57	7.9	* 32	9.5	* 65	6.5	33.6
Max Q Clear Time (g_c+I1), s	12.5	18.4	8.6	34.3	9.8	60.2	4.4	11.0
Green Ext Time (p_c), s	0.1	11.1	0.0	0.0	0.0	2.7	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	48.9
HCM 2010 LOS	D

Notes

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	2023	124
Future Volume (veh/h)	2023	124
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	2223	136
Adj No. of Lanes	3	1
Peak Hour Factor	0.91	0.91
Percent Heavy Veh, %	2	2
Cap, veh/h	2321	723
Arrive On Green	0.46	0.46
Sat Flow, veh/h	5085	1583
Grp Volume(v), veh/h	2223	136
Grp Sat Flow(s),veh/h/ln	1695	1583
Q Serve(g_s), s	58.2	7.0
Cycle Q Clear(g_c), s	58.2	7.0
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	2321	723
V/C Ratio(X)	0.96	0.19
Avail Cap(c_a), veh/h	2407	749
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	36.2	22.3
Incr Delay (d2), s/veh	9.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	29.3	3.1
LnGrp Delay(d),s/veh	46.1	22.3
LnGrp LOS	D	C
Approach Vol, veh/h	2626	
Approach Delay, s/veh	47.3	
Approach LOS	D	
Timer		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	186	36	179	61	23	57	33	155	2667	23	2	62
Future Volume (veh/h)	186	36	179	61	23	57	33	155	2667	23	2	62
Number	7	4	14	3	8	18		1	6	16		5
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0		0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97		1.00		0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900		1863	1863	1900		1863
Adj Flow Rate, veh/h	224	43	216	79	30	74		167	2868	25		68
Adj No. of Lanes	1	1	0	1	1	0		2	3	0		1
Peak Hour Factor	0.83	0.83	0.83	0.77	0.77	0.77		0.93	0.93	0.93		0.91
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2		2
Cap, veh/h	246	53	264	103	54	133		165	2876	25		86
Arrive On Green	0.14	0.20	0.20	0.06	0.12	0.12		0.05	0.55	0.55		0.05
Sat Flow, veh/h	1774	267	1344	1774	465	1147		3442	5199	45		1774
Grp Volume(v), veh/h	224	0	259	79	0	104		167	1867	1026		68
Grp Sat Flow(s),veh/h/ln	1774	0	1611	1774	0	1613		1721	1695	1854		1774
Q Serve(g_s), s	17.9	0.0	22.2	6.3	0.0	8.8		6.9	79.0	79.8		5.5
Cycle Q Clear(g_c), s	17.9	0.0	22.2	6.3	0.0	8.8		6.9	79.0	79.8		5.5
Prop In Lane	1.00		0.83	1.00		0.71		1.00		0.02		1.00
Lane Grp Cap(c), veh/h	246	0	317	103	0	187		165	1875	1025		86
V/C Ratio(X)	0.91	0.00	0.82	0.77	0.00	0.56		1.01	1.00	1.00		0.79
Avail Cap(c_a), veh/h	394	0	357	394	0	358		165	1875	1025		396
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	61.2	0.0	55.4	67.0	0.0	60.2		68.7	32.1	32.2		67.9
Incr Delay (d2), s/veh	11.8	0.0	11.0	4.5	0.0	1.0		73.9	19.7	28.2		5.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.1	0.0	0.0		0.0
%ile BackOfQ(50%),veh/ln	9.6	0.0	10.8	3.2	0.0	4.0		5.0	42.0	48.8		2.8
LnGrp Delay(d),s/veh	73.0	0.0	66.4	71.4	0.0	61.2		142.7	51.8	60.4		73.8
LnGrp LOS	E		E	E		E		F	D	F		E
Approach Vol, veh/h		483			183				3060			
Approach Delay, s/veh		69.5			65.6				59.6			
Approach LOS		E			E				E			

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	84.5	13.9	33.9	11.8	84.7	25.5	22.2
Change Period (Y+Rc), s	* 5.1	* 4.9	5.5	5.5	* 4.8	* 4.9	5.5	5.5
Max Green Setting (Gmax), s	* 6.9	* 88	32.0	32.0	* 32	* 63	32.0	32.0
Max Q Clear Time (g_c+I1), s	8.9	73.1	8.3	24.2	7.5	81.8	19.9	10.8
Green Ext Time (p_c), s	0.0	6.4	0.0	0.6	0.0	0.0	0.1	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	50.9
HCM 2010 LOS	D

Notes

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	2424	96
Future Volume (veh/h)	2424	96
Number	2	12
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		0.99
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	2664	105
Adj No. of Lanes	3	1
Peak Hour Factor	0.91	0.91
Percent Heavy Veh, %	2	2
Cap, veh/h	2806	867
Arrive On Green	0.55	0.55
Sat Flow, veh/h	5085	1572
Grp Volume(v), veh/h	2664	105
Grp Sat Flow(s),veh/h/ln	1695	1572
Q Serve(g_s), s	71.1	4.6
Cycle Q Clear(g_c), s	71.1	4.6
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	2806	867
V/C Ratio(X)	0.95	0.12
Avail Cap(c_a), veh/h	3110	961
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	30.4	15.5
Incr Delay (d2), s/veh	6.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	34.8	2.0
LnGrp Delay(d),s/veh	37.3	15.6
LnGrp LOS	D	B
Approach Vol, veh/h	2837	
Approach Delay, s/veh	37.3	
Approach LOS	D	
Timer		

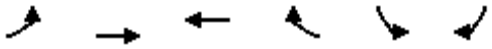
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	490	613	30	10	30	1248	1058	80	130	50	278	10
Future Volume (veh/h)	490	613	30	10	30	1248	1058	80	130	50	278	10
Number	1	6	16		5	2	12	3	8	18	7	4
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900		1863	1863	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	533	666	33		33	1357	0	87	141	54	302	11
Adj No. of Lanes	1	2	0		2	3	1	1	1	0	2	2
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2		2	2	2	2	2	2	2	2
Cap, veh/h	479	1949	96		61	1586	494	110	167	64	309	558
Arrive On Green	0.27	0.57	0.57		0.02	0.31	0.00	0.06	0.13	0.13	0.09	0.16
Sat Flow, veh/h	1774	3432	170		3442	5085	1583	1774	1284	492	3442	3539
Grp Volume(v), veh/h	533	343	356		33	1357	0	87	0	195	302	11
Grp Sat Flow(s),veh/h/ln	1774	1770	1833		1721	1695	1583	1774	0	1776	1721	1770
Q Serve(g_s), s	28.5	11.0	11.0		1.0	26.5	0.0	5.1	0.0	11.3	9.2	0.3
Cycle Q Clear(g_c), s	28.5	11.0	11.0		1.0	26.5	0.0	5.1	0.0	11.3	9.2	0.3
Prop In Lane	1.00		0.09		1.00		1.00	1.00		0.28	1.00	
Lane Grp Cap(c), veh/h	479	1005	1041		61	1586	494	110	0	230	309	558
V/C Ratio(X)	1.11	0.34	0.34		0.54	0.86	0.00	0.79	0.00	0.85	0.98	0.02
Avail Cap(c_a), veh/h	479	1338	1386		173	2715	845	141	0	588	309	1199
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.6	12.2	12.2		51.5	34.1	0.0	48.9	0.0	44.9	48.0	37.6
Incr Delay (d2), s/veh	76.0	0.1	0.1		2.8	0.5	0.0	15.6	0.0	3.3	44.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.9	5.4	5.6		0.5	12.4	0.0	3.0	0.0	5.8	6.3	0.1
LnGrp Delay(d),s/veh	114.5	12.3	12.3		54.2	34.7	0.0	64.4	0.0	48.2	92.2	37.6
LnGrp LOS	F	B	B		D	C		E		D	F	D
Approach Vol, veh/h		1232				1390			282			411
Approach Delay, s/veh		56.5				35.1			53.2			78.4
Approach LOS		E				D			D			E

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.0	37.8	12.1	21.7	7.0	64.9	15.0	18.8
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	28.5	* 56	8.4	* 36	* 5.3	* 80	9.5	* 35
Max Q Clear Time (g_c+I1), s	30.5	28.5	7.1	7.9	3.0	13.0	11.2	13.3
Green Ext Time (p_c), s	0.0	4.5	0.0	0.4	0.0	4.6	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	50.0
HCM 2010 LOS	D

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	90
Future Volume (veh/h)	90
Number	14
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	98
Adj No. of Lanes	1
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	249
Arrive On Green	0.16
Sat Flow, veh/h	1583
Grp Volume(v), veh/h	98
Grp Sat Flow(s),veh/h/ln	1583
Q Serve(g_s), s	5.9
Cycle Q Clear(g_c), s	5.9
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	249
V/C Ratio(X)	0.39
Avail Cap(c_a), veh/h	537
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	40.0
Incr Delay (d2), s/veh	0.4
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	2.6
LnGrp Delay(d),s/veh	40.3
LnGrp LOS	D
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	871	1236	1316	110	50	618
Future Volume (veh/h)	871	1236	1316	110	50	618
Number	1	6	2	12	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	947	1343	1430	120	0	730
Adj No. of Lanes	2	2	2	1	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	964	2600	1441	645	274	1376
Arrive On Green	0.28	0.73	0.41	0.41	0.00	0.15
Sat Flow, veh/h	3442	3632	3632	1583	1774	3167
Grp Volume(v), veh/h	947	1343	1430	120	0	730
Grp Sat Flow(s),veh/h/ln	1721	1770	1770	1583	1774	1583
Q Serve(g_s), s	30.1	17.9	44.2	5.3	0.0	17.0
Cycle Q Clear(g_c), s	30.1	17.9	44.2	5.3	0.0	17.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	964	2600	1441	645	274	1376
V/C Ratio(X)	0.98	0.52	0.99	0.19	0.00	0.53
Avail Cap(c_a), veh/h	964	2603	1441	645	274	1376
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.3	6.2	32.4	20.9	0.0	22.9
Incr Delay (d2), s/veh	24.7	0.1	21.7	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.5	8.6	25.8	2.3	0.0	8.2
LnGrp Delay(d),s/veh	64.0	6.3	54.1	21.0	0.0	23.1
LnGrp LOS	E	A	D	C		C
Approach Vol, veh/h		2290	1550		730	
Approach Delay, s/veh		30.2	51.6		23.1	
Approach LOS		C	D		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	36.0	51.5				87.5		22.5
Change Period (Y+Rc), s	* 5.2	* 6.7				* 6.7		5.5
Max Green Setting (Gmax), s	* 31	* 45				* 81		17.0
Max Q Clear Time (g_c+I1), s	32.1	46.2				19.9		19.0
Green Ext Time (p_c), s	0.0	0.0				8.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	36.3
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	1026	160	50	784	423	20	20	30	1029	140	490
Future Volume (veh/h)	110	1026	160	50	784	423	20	20	30	1029	140	490
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	120	1115	174	54	852	0	22	22	33	1118	152	533
Adj No. of Lanes	1	2	0	2	3	1	1	1	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	1203	187	94	1692	527	27	37	56	1172	1349	603
Arrive On Green	0.08	0.39	0.39	0.03	0.33	0.00	0.01	0.06	0.06	0.34	0.38	0.38
Sat Flow, veh/h	1774	3070	478	3442	5085	1583	1774	674	1011	3442	3539	1583
Grp Volume(v), veh/h	120	641	648	54	852	0	22	0	55	1118	152	533
Grp Sat Flow(s),veh/h/ln	1774	1770	1778	1721	1695	1583	1774	0	1684	1721	1770	1583
Q Serve(g_s), s	7.4	38.5	38.8	1.7	15.0	0.0	1.4	0.0	3.5	35.3	3.1	35.0
Cycle Q Clear(g_c), s	7.4	38.5	38.8	1.7	15.0	0.0	1.4	0.0	3.5	35.3	3.1	35.0
Prop In Lane	1.00		0.27	1.00		1.00	1.00		0.60	1.00		1.00
Lane Grp Cap(c), veh/h	146	693	697	94	1692	527	27	0	93	1172	1349	603
V/C Ratio(X)	0.82	0.93	0.93	0.58	0.50	0.00	0.83	0.00	0.59	0.95	0.11	0.88
Avail Cap(c_a), veh/h	212	752	756	158	1772	552	97	0	530	1308	2254	1008
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.3	32.3	32.4	53.5	29.8	0.0	54.7	0.0	51.3	35.9	22.3	32.1
Incr Delay (d2), s/veh	10.0	15.9	16.6	2.1	0.1	0.0	20.6	0.0	2.2	13.9	0.0	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	21.8	22.3	0.9	7.0	0.0	0.8	0.0	1.7	19.0	1.5	15.7
LnGrp Delay(d),s/veh	60.3	48.2	49.0	55.6	29.9	0.0	75.3	0.0	53.5	49.8	22.3	35.0
LnGrp LOS	E	D	D	E	C		E		D	D	C	C
Approach Vol, veh/h		1409			906			77			1803	
Approach Delay, s/veh		49.6			31.4			59.7			43.1	
Approach LOS		D			C			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.7	41.9	7.2	47.5	8.1	48.5	43.4	11.3
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	13.3	* 39	6.1	* 71	* 5.1	* 47	42.3	* 35
Max Q Clear Time (g_c+I1), s	9.4	17.0	3.4	37.0	3.7	40.8	37.3	5.5
Green Ext Time (p_c), s	0.0	4.3	0.0	0.6	0.0	2.8	0.6	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	43.0
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	894	1447	1036	120	50	783
Future Volume (veh/h)	894	1447	1036	120	50	783
Number	1	6	2	12	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	972	1573	1126	130	0	909
Adj No. of Lanes	2	2	2	1	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1034	2313	1042	466	370	1612
Arrive On Green	0.30	0.65	0.29	0.29	0.00	0.21
Sat Flow, veh/h	3442	3632	3632	1583	1774	3167
Grp Volume(v), veh/h	972	1573	1126	130	0	909
Grp Sat Flow(s),veh/h/ln	1721	1770	1770	1583	1774	1583
Q Serve(g_s), s	24.4	24.6	26.1	5.6	0.0	17.5
Cycle Q Clear(g_c), s	24.4	24.6	26.1	5.6	0.0	17.5
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1034	2313	1042	466	370	1612
V/C Ratio(X)	0.94	0.68	1.08	0.28	0.00	0.56
Avail Cap(c_a), veh/h	1087	2313	1042	466	370	1612
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.2	9.6	31.3	24.0	0.0	15.0
Incr Delay (d2), s/veh	14.3	0.7	52.2	0.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.7	12.0	20.2	2.5	0.0	7.7
LnGrp Delay(d),s/veh	44.5	10.2	83.5	24.2	0.0	15.3
LnGrp LOS	D	B	F	C		B
Approach Vol, veh/h		2545	1256		909	
Approach Delay, s/veh		23.3	77.4		15.3	
Approach LOS		C	E		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	31.8	32.8				64.6		24.0
Change Period (Y+Rc), s	* 5.2	* 6.7				* 6.7		5.5
Max Green Setting (Gmax), s	* 28	* 26				* 50		18.5
Max Q Clear Time (g_c+I1), s	26.4	28.1				26.6		19.5
Green Ext Time (p_c), s	0.2	0.0				7.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	36.2
HCM 2010 LOS	D

Notes

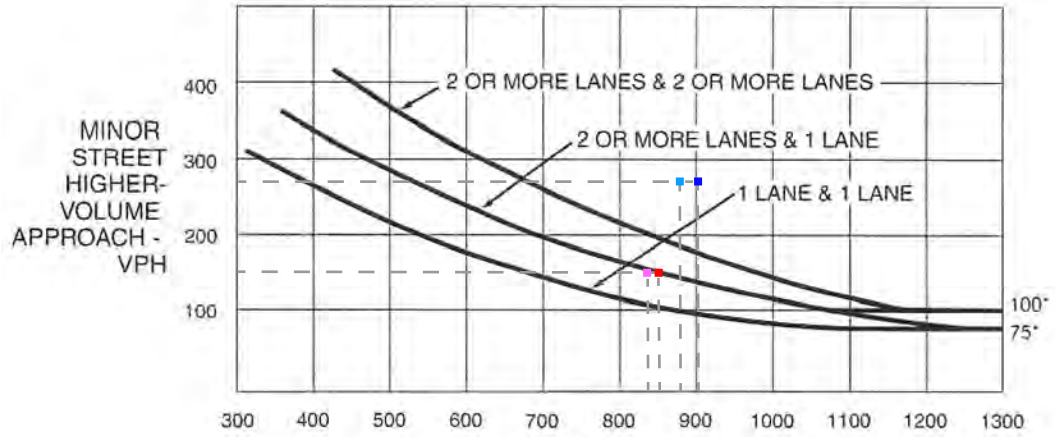
Appendix G

Analysis Worksheets for Signal Warrants

Intersection 3: Jackson Road @ Eagles Nest Road

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

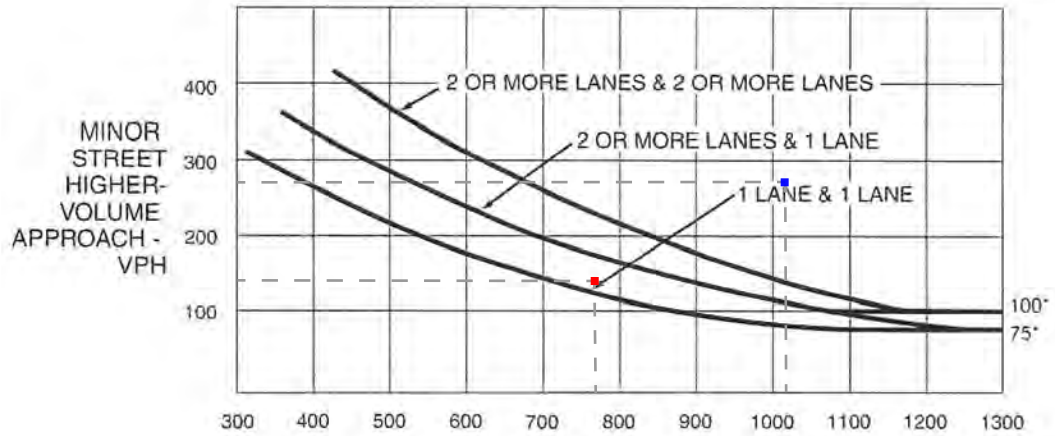


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Intersection 8: Grant Line Road @ Keifer Road

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Note: For Intersection 8, Existing volumes equal Existing Plus Project volumes.

LEGEND

- AM Existing
- AM Plus Project
- PM Existing
- PM Plus Project

APPENDIX I.2

Memorandum RE: Jaeger Ranch Traffic Impact Study, Draft Other Considerations

Kimley»Horn

Memorandum

To: Olga Sciorelli, P.E., QSD, QSP
Land Planning Manager
K. Hovnanian® Homes of California, Inc.

From: Chris Gregerson, P.E., T.E.

Re: Jaeger Ranch Traffic Impact Study
DRAFT *Other Considerations*

Date: August 28, 2018

Rancho Cordova Parkway Widening Trigger Analysis

The need to widen Rancho Cordova Parkway from two lanes to four lanes along the project extents was analyzed between Existing and Cumulative plus Proposed Project conditions. This trigger analysis incorporated not only the development assumptions that would increase traffic along this roadway segment, but also the connection of the roadway south to Grant Line Road and north to US 50. The analysis resulted in the need for the roadway to be widened by 2034. This would equate to approximately 570 SFR and 566 AAR dwelling units that can be constructed before the roadway segment is required to be widened.

Peak-Hour Traffic Signal Warrant Evaluation

The need for traffic signalization was assessed based on the peak-hour warrant methodologies noted in Section 4.C of the *California Manual on Uniform Traffic Control Devices (CMUTCD)*, *2014 Edition with April 2017 revisions* (CaMUTCD). The peak-hour traffic signal warrant analysis was performed for the two unsignalized intersections in the Existing (2017) scenario, including the side street stop controlled (SSSC) intersection at Jackson Road and Eagles Nest Road (Intersection #3), and the all-way stop controlled (AWSC) intersection at Grant Line Road and Kiefer Boulevard (Intersection #8). In both cases, the speed limit on the major street is greater than 40 miles per hour, indicating that the 70% reduction factor option is appropriate and thus, a signal is warranted for both intersections. Figure 4C-4 of the CMUTCD is included in Appendix G for reference. For the Rancho Cordova Parkway intersection with Chrysanthy Boulevard (Intersection #6), while a signal is assumed for the Cumulative and Cumulative plus Proposed Project scenarios, it is not warranted using the peak-hour traffic signal warrant. Thus, there is no development trigger that would require a signal be installed at the intersection.

Bicycle and Pedestrian Facilities Evaluation

The project applicant is proposing constructing greater than two miles of bicycle facilities throughout the project including several connections to existing and proposed regional trails. The project is proposing to construct one 10-foot to 12-foot wide Class I bike trail connecting to an existing trail in the northeastern portion of the project and two recreational trails connecting to pedestrian and bicycle facilities on the eastern and western portions of the project. The project application is proposing that these facilities shall be incorporated into the City's bikeway master plan. In addition, the project will include sidewalks, stop signs, standard pedestrian crossing warning signs, lane striping to provide a bicycle lane along applicable roadways, bicycle parking, signs to identify pedestrian and bicycle paths, and pedestrian signal heads. Sidewalks will be constructed as part of the frontage improvements along all new roadway construction for Jaeger Road/Rancho Cordova Parkway and Chrysanthy Boulevard in conformance with City and County design standards. Circulation and access to all proposed public spaces will include sidewalks that meet Americans with Disabilities Act standards.

Kimley»Horn

Site Plan, Access, and On-site Circulation Evaluation

The site plan for the proposed project (Error! Reference source not found.) was qualitatively reviewed for general access and on-site
circulation. According to the site plan, primary access to the site will be provided from Chrysanthy Boulevard at the intersection of Rancho Cordova Parkway/Jaeger Road. The combination of these access points, as well as the on-site circulation system appears to provide adequate access to/from Chrysanthy Boulevard, Rancho Cordova Parkway and the surrounding transportation network. Additional access will be provided in the future, as Chrysanthy Boulevard, Rancho Cordova Parkway and Americanos Boulevard are constructed and extended.

Vehicle Miles Traveled (VMT) Analysis

As a part of the traffic impact study performed for the Jaeger Ranch development, Kimley-Horn prepared a project-related Vehicle Miles Traveled (VMT) analysis using Sacramento Area Council of Government's (SACOG) SACSIM travel demand model. Consistent with the City's expectations and our Scope of Services, this VMT analysis is reported in speed bins as well as for an average trip distance. Please note that this analysis was always intended to be provided as information only, and was not to be included in the formal study report nor as a part of the project's environmental review process. This memorandum transmits the subject VMT data for the proposed project.

The VMT analysis was completed for two plus project analysis scenarios, Existing (2017) and Cumulative (2040) Conditions. Table 1 below summarizes the results of this analysis. This analysis was completed using SACOG's SACSIM TDM and summarizes the number of vehicles traveling to and from the project site. The VMT is divided into 5 mph speed bins which correspond to the average speed on roadways in the surrounding area. The total VMT is a summation of the VMT in each speed bin for the two analysis scenarios, white the average trip length is calculated by dividing the total VMT by the number of trips produced in the model.

Table 1 – VMT Analysis Results for Existing (2017) and Cumulative (2040) Conditions

Speed Bin (mph)	VMT	
	Existing	Cumulative
0 - 5	40	25
6 - 10	660	553
11 - 15	525	595
16 - 20	1,940	1,028
21 - 25	2,399	2,038
26 - 30	7,211	4,071
31 - 35	6,295	15,432
36 - 40	23,250	20,857
41 - 45	20,934	8,065
46 - 50	5,325	6,512
51 - 55	10,296	8,192
56 - 60	7,361	2,848
61 - 65	1,285	329
66+	160	48
Total	**87,680**	**70,593**
Average Trip Length (mi.)	***14.2***	***11.2***

Existing conditions include Chrysanthy Boulevard only built to the project's northwest corner, and all trips accessing the surrounding network via Chrysanthy Boulevard. Rancho Cordova Parkway is not constructed to Douglas Road in Existing Conditions and all other assumptions are consistent with Existing (2017) conditions in the surrounding area. As shown, both the total VMT and average trip length are greater in Existing Conditions than Cumulative Conditions.

APPENDIX I.3

Memorandum RE: Jaeger Ranch Supplemental Traffic Analyses, Draft Traffic Impact Analysis Services

Kimley»Horn

Memorandum

To: Olga Sciorelli, P.E., QSD, QSP
Land Planning Manager
K. Hovnanian® Homes of California, Inc.

From: Chris Gregerson, P.E., T.E., PTP
Kelly Andrews, E.I.T.

Re: Jaeger Ranch Supplemental Traffic Analyses
DRAFT *Traffic Impact Analysis Services*

Date: December 3, 2018

Per your request and authorization, we have prepared this traffic evaluation for the above referenced project.

Project Understanding

This memorandum documents the results of a supplemental transportation impact analysis completed for Jaeger Ranch (the "proposed project" or "project"). The vacant project site is located along Rancho Cordova Parkway/Jaeger Road, south of Douglas Road in Rancho Cordova, California. Kimley-Horn previously completed a traffic impact analysis for the Jaeger Ranch[1] project. The significant findings of the previous study are summarized below:

- The proposed project is estimated to generate 10,266 new daily trips, with 721 new trips occurring during the AM peak-hour, and 934 new trips occurring during the PM peak-hour.
- The addition of the proposed project to the Existing (2017) Conditions results in a significant impact at four (4) study intersections and one (1) roadway segment. With the application of mitigation measures recommended in the previous study, the impacts to intersections can be mitigated to be *less than significant*. The proposed project results in one significant and unavoidable impact to the roadway segments for Existing (2017) Conditions, as defined by the applicable jurisdictions.
- The addition of the proposed project to Cumulative (2040) Conditions results in a significant impact at three (3) intersections and one (1) roadway segment. Two of the impacted intersections would be mitigated to less than significant. One location does not have a feasible mitigation. The significant impact to the roadway segments for Cumulative (2040) Conditions does not have a feasible mitigation, as defined by the applicable jurisdictions.

The project applicant now proposes to include 723 single-family detached residential units, 250 multi-family residential units, 743 Active Adult Residential (AAR) units, and approximately 32,000 square-feet of commercial uses.

The purpose of this impact analysis is to identify additional impacts to transportation facilities due to the increased number of units and propose appropriate mitigations (as determined by the City of Rancho Cordova) for those impacts. This study was performed in accordance with the County of Sacramento's traffic study guidelines[2] and standards established by the Circulation Element of the City of Rancho Cordova's General Plan [3].

[1] *Transportation Impact Analysis, Jaeger Ranch,* Kimley-Horn and Associates, Inc., August 28,2018.
[2] *Traffic Impact Analysis Guidelines, July 2004*, County of Sacramento.
[3] *City of Rancho Cordova General Plan: Circulation Element, May 2015,* City of Rancho Cordova

Kimley»Horn

Study Facilities and Analysis Scenarios

This analysis was limited to those intersections that were previously mitigated to less than significantly impacted conditions, and those intersections that fall within 5 seconds of delay of becoming impacted. The following transportation facilities are included in this evaluation:

Existing (2017) Study Intersections:

1. Jackson Rd/SR-16 @ Bradshaw Rd
2. Jackson Rd/SR-16 @ Excelsior Rd
3. Jackson Rd/SR-16 @ Eagles Nest Rd
4. Jackson Rd/SR-16 @ Sunrise Blvd
5. Jackson Rd/SR-16 @ Grant Line Rd
9. Grant Line Rd @ Sunrise Blvd
11. Douglas Rd @ Sunrise Blvd
13. Mather Field Rd @ Folsom Blvd
19. Zinfandel Dr @ US-50 Eastbound Ramps
21. Sunrise Blvd @ White Rock Rd
25. Sunrise Blvd @ Zinfandel Dr

Cumulative (2040) Study Intersections:

1. Jackson Rd/SR-16 @ Bradshaw Rd
4. Jackson Rd/SR-16 @ Sunrise Blvd
5. Jackson Rd/SR-16 @ Grant Line Rd
9. Grant Line Rd @ Sunrise Blvd
10. Douglas Rd @ Zinfandel Dr
11. Douglas Rd @ Sunrise Blvd
13. Mather Field Rd @ Folsom Blvd
17. Zinfandel Dr @ International Dr
19. Zinfandel Dr @ US-50 Eastbound Ramps
21. Sunrise Blvd @ White Rock Rd
25. Sunrise Blvd @ Zinfandel Dr
27. White Rock Rd @ Prairie City Rd

Exhibit 1 depicts the locations of these study intersections. Please note that the intersection ID's are consistent with the original Jaeger Ranch Transportation Impact Study[1].

This traffic impact analysis was conducted for the study facilities for the following scenarios:

A. Existing (2017) plus Proposed Project Conditions
B. Cumulative (2040) plus Proposed Project Conditions

Kimley»Horn

Regulatory Setting and Thresholds of Significance

Sacramento County

The Circulation Element of the latest County of Sacramento General Plan[4] includes the following relevant provisions:

> *CI-9. Plan and design the roadway system in a manner that meets Level of Service (LOS) D on rural roadways and LOS E on urban roadways, unless it is infeasible to implement project alternatives or mitigation measures that would achieve LOS D on rural roadways or LOS E on urban roadways. The urban areas are those areas within the Urban Service Boundary as shown in the Land Use Element of the Sacramento County General Plan. The areas outside the Urban Service Boundary are considered rural.*
>
> *CI-35. The applicant/developer of land development projects shall be responsible to install bicycle and pedestrian facilities in accordance with Sacramento County Improvement Standards and may be responsible to participate in the fair share funding of regional multi-use trails identified in the Sacramento County Bicycle Master Plan.*

Sacramento County's traffic study guidelines[2] provide guidelines for the implementation of the General Plan provisions: "The County defines the minimum acceptable operation level for its roadways and intersections to be LOS D for rural areas and LOS E for urban areas. The urban areas are those areas within the Urban Service Boundary as shown in the Land Use Element of the Sacramento County General Plan. The areas outside the Urban Service Boundary are considered rural."

All of the Sacramento County study facilities are within the Urban Services Boundary. Therefore, LOS E is the minimum acceptable LOS for all County facilities.

Thresholds of Significance

Roadways/Signalized Intersections: A project is considered to have a significant effect if it would:

- Result in a roadway or a signalized intersection operating at an acceptable LOS to deteriorate to an unacceptable LOS; or
- Increase the V/C ratio by more than 0.05 at a roadway or at a signalized intersection that is operating at an unacceptable LOS without the project.

Unsignalized Intersections: A project is considered to have a significant effect if it would:

- Result in an unsignalized intersection movement/approach operating at an acceptable LOS to deteriorate to an unacceptable LOS, and also cause the intersection to meet a traffic signal warrant; or
- For an unsignalized intersection that meets a signal warrant, increase the delay by more than 5 seconds at a movement/approach that is operating at an unacceptable LOS without the project.

[4] *Sacramento County General Plan of 2005-2030,* Sacramento County Community Planning & Development Department, November 9, 2011.

Kimley»Horn

City of Rancho Cordova

The Circulation Element of the City of Rancho Cordova's General Plan 2030 includes the following relevant provisions:

> *Policy C.1.2 - Seek to maintain operations on all roadways and intersections at Level of Service D or better at all times, including peak travel times, unless maintaining this Level of Service would, in the City's judgment, be infeasible and/or conflict with the achievement of other goals. Congestion in excess of Level of Service D may be accepted in these cases, provided that provisions are made to improve traffic flow and/or promote non-vehicular transportation as part of a development project or a City-initiated project. Please see Policy C.1.3 for additional policy guidance related to this issue.*
>
> *Examples of system improvements which may be accepted when Level of Service D cannot be maintained include the following, where the improvement or funding is in excess of standard City requirements:*
> *• Development of on- or off-street bicycle or pedestrian circulation (not including sidewalks that are constructed as part of roadway improvements);*
> *• Providing or funding public transportation facilities or services;*
> *• Other features as determined appropriate by the City.*
>
> *Policy C.1.3 - Recognize that regional traffic beyond the City's control, as well as circulation system decisions made prior to incorporation or by other agencies, will make it infeasible to achieve the City's desired Level of Service on all roadways. Subject development projects which affect these roadways to the provisions of Policy C.1.2 to provide offsetting improvements to the vehicular and/or non-vehicular transportation system.*

LOS D is the minimum acceptable LOS for all facilities within the City of Rancho Cordova.

Existing (2017) Conditions

As documented in the previous Jaeger Ranch Traffic Impact Analysis[1], new weekday AM (7-9 a.m.) and PM (4-6 p.m.) peak-period intersection turning movement traffic counts were collected on September 28, 2017. Existing (2017) peak-hour turn movement volumes are presented in Exhibit 2

Assessment of Proposed Project

Trip Generation

The number of trips anticipated to be generated by the proposed project are approximated using data included in *Trip Generation, 9th Edition*, published by the Institute of Transportation Engineers (ITE).

The land use considered for this analysis included 723 market rate single family detached units (SFR), 250 multi-family multifamily housing units and 743 AAR units for the project site. Active Adult Residential (AAR) refers to detached senior housing units. This land use type is understood to have trip characteristics that generate fewer daily trips when compared to non-age restrictive land use types. In fact, as described in Trip Generation, the daily trip rate for AAR is 61 percent less than the daily trip rate for SFR. In addition, the AM and PM peak-hour trip rates for AAR are 71 percent and 73 percent less than the AM peak-hour and PM peak-hour trip rates for SFR, respectively.

To represent this development, ITE Land Use Codes 210 (Single Family Detached Housing), 220 (Apartment), 251 (Senior Adult Housing - Detached) and 820 (Shopping Center) were applied. Internal capture rates of 2.84 percent and 8.92 percent were applied to the AM and PM peak-hours, respectively. For the commercial uses, a pass-by reduction of 34% was applied for the PM peak-hour, in accordance with the Trip Generation Handbook. The anticipated trip generation characteristics for the proposed project are presented in Table 1.

Kimley»Horn

Table 1 – Proposed Project Trip Generation Characteristics

Land Use (ITE Code)	Size (DU/KSF)	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Single Family Detached Housing (210)	723	6,685	538	134	404	705	444	261
Apartment (220)	250	1,425	123	25	98	133	86	47
Senior Adult Housing - Detached (251)	743	2,540	159	55	104	183	111	71
Shopping Center (820)	32.000	956	22	14	9	81	39	42
Total		**11,606**	**843**	**228**	**615**	**1,102**	**681**	**421**

As shown in Table 1, the proposed project is estimated to generate approximately 11,606 new daily trips, with 843 and 1,102 trips occurring during the A.M. and P.M. peak-hours, respectively. Relative to the previously completed analysis, this represents an increase of 1,340 new daily trips, with 122 and 168 additional trips occurring during the A.M. and P.M. peak-hours, respectively.

Existing (2017) Plus Proposed Project Conditions

As previously discussed, the number of trips anticipated to be generated by the proposed project was derived using the *Trip Generation Manual, 9th Edition,* published by the Institute for Traffic Engineering (ITE). These trips were assigned to the roadway network based on existing traffic volumes, output from the SACSIM travel demand model, and professional judgment. The project trip distribution percentages are provided in Exhibit 3 and the assignment of project trips are depicted in Exhibit 4.

Using these volumes, levels of service were determined at the study facilities. Existing (2017) plus Proposed Project peak-hour turning movement volumes are presented in Exhibit 5. Levels of service (LOS) were then determined at the study facilities. Analysis worksheets for this scenario are provided in Appendix A.

Table 2 presents the intersection operating conditions for this analysis scenario. As indicated in Table 2, the study intersections operate from LOS C to LOS F.

Kimley»Horn

Table 2 – Existing (2017) plus Proposed Project Intersection Levels of Service

ID	Intersection	Control	Peak Hour	Existing		Existing plus Project	
				Delay	LOS	Delay	LOS
1	Jackson Rd/SR-16 @ Bradshaw Rd	Signal	AM	122.2	F	126.1	F
			PM	79.1	E	80.1	F
2	Jackson Rd/SR-16 @ Excelsior Rd	Signal	AM	74.1	E	59.1	E
			PM	51.8	D	43.2	D
3	Jackson Rd/SR-16 @ Eagles Nest Rd	SSSC	AM	17.2 (89.1 NB)	F	18.0 (95.3 NB)	F
			PM	20.1 (253.1 NB)	F	19.1 (*ECL NB)	F
4	Jackson Rd/SR-16 @ Sunrise Rd	Signal	AM	66.0	E	69.3	E
			PM	44.3	D	47.0	D
5	Jackson Rd/SR-16 @ Grant Line Rd	Signal	AM	113.8	F	114.1	F
			PM	136.4	F	136.9	F
9	Grant Line Rd @ Sunrise Blvd	Signal	AM	113.1	F	120.9	F
			PM	52.1	D	54.9	D
11	Douglas Rd @ Sunrise Blvd	Signal	AM	28.4	C	35.0	D
			PM	41.5	D	63.7	E
13	Mather Field Rd @ Folsom Blvd	Signal	AM	27.5	C	27.2	C
			PM	51.7	D	51.1	D
19	Zinfandel Dr @ US-50 Eastbound Ramps	Signal	AM	85.1	F	88.7	F
			PM	23.2	C	25.7	C
21	Sunrise Blvd @ White Rock Rd	Signal	AM	35.7	D	33.2	C
			PM	56.5	E	61.9	E
25	Sunrise Blvd @ Zinfandel Dr	Signal	AM	112.8	F	117.7	F
			PM	58.6	E	70.2	E

Note: Pink shading indicates new impacts not previously identified in the previous Jaeger Ranch Impact Analysis. Orange shading indicates impacts previously identified.

Cumulative (2040) Conditions

Future traffic estimates were prepared using the modified SACSIM travel demand model developed by the City of Rancho Cordova for the 2040 General Plan. The difference between the resulting traffic estimate and the 2012 baseline model results (the growth) was then added to Existing (2017) traffic volumes to establish Cumulative (2040) traffic estimates for this study. The Cumulative (2040) study intersections are depicted in Exhibit 6. Peak-hour traffic volumes for Cumulative (2040) Conditions are presented in Exhibit 7.

Cumulative (2040) plus Proposed Project Conditions

As previously discussed, the number of trips anticipated to be generated by the proposed project was derived using the *Trip Generation Manual, 9th Edition*, published by the Institute for Traffic Engineering (ITE). The project trips were assigned to the future roadway network based on modified SACSIM travel demand model, as provided by the City of Rancho Cordova. Using these volumes, levels of service were determined at the study facilities.

The Cumulative Scenario Project Trip distribution and trip assignment are shown in Exhibit 8 and Exhibit 9, respectively. Cumulative plus Proposed Project peak-hour turning movement volumes are presented in Exhibit 10. Analysis worksheets for this scenario are provided in Appendix B

Kimley»Horn

Table 3 presents the peak-hour intersection operating conditions for this analysis scenario. As indicated in Table 3, the study intersections operate from LOS D to LOS F during the AM and PM peak-hours.

Table 3 – Cumulative (2036) plus Proposed Project Intersection Levels of Service

ID	Intersection	Control	Peak Hour	Cumulative		Cumulative plus Proposed Project	
				Delay	LOS	Delay	LOS
1	Jackson Rd/SR-16 @ Bradshaw Rd	Signal	AM	146.9	F	147.6	F
			PM	194.9	F	195.8	F
4	Jackson Rd/SR-16 @ Sunrise Rd	Signal	AM	104.6	F	105.3	F
			PM	53.9	D	54.7	D
5	Jackson Rd/SR-16 @ Grant Line Rd	Signal	AM	114.7	F	118.7	F
			PM	62.7	E	65.9	E
9	Grant Line Rd @ Sunrise Blvd	Signal	AM	150.1	F	151.5	F
			PM	109.2	F	108.7	F
10	Douglas Rd @ Zinfandel Dr	Signal	AM	145.2	F	161.7	F
			PM	35.3	D	43.9	D
11	Douglas Rd @ Sunrise Blvd	Signal	AM	97.1	F	114.5	F
			PM	107.6	F	109.6	F
13	Mather Field Rd @ Folsom Blvd	Signal	AM	46.3	D	46.1	D
			PM	142.2	F	141.2	F
17	Zinfandel Dr @ International Dr	Signal	AM	45.3	D	45.1	D
			PM	68.2	E	72.4	E
19	Zinfandel Dr @ US-50 Eastbound Ramps	Signal	AM	79.4	E	83.7	F
			PM	166.4	F	170.7	F
21	Sunrise Blvd @ White Rock Rd	Signal	AM	65.5	E	66.8	E
			PM	120.1	F	125.9	F
25	Sunrise Blvd @ Zinfandel Dr	Signal	AM	209.8	F	215.0	F
			PM	93.9	F	101.3	F
27	White Rock Rd @ Prairie City Rd	Signal	AM	140.3	F	144.8	F
			PM	157.0	F	171.0	F

Note: Pink shading indicates new impacts not previously identified in the previous Jaeger Ranch Impact Analysis. Orange shading indicates impacts previously identified.

Impacts and Mitigation

Project impacts were determined by comparing conditions with the proposed project to those without the project. Impacts for intersections are created when traffic from the proposed project forces the LOS to fall below the specified threshold.

Existing (2017) plus Proposed Project Impacts

As reflected in Table 2, the addition of the proposed project results in the five (5) significant impacts to study intersections. The following is a discussion of each impact and its associated mitigation. Analysis worksheets for the mitigations for this scenario are provided in Appendix C. Please note that the impact at Sunrise Boulevard and White Rock Road (Intersection #21) is an impact not identified in the previous Jaeger Ranch Traffic Impact Analysis[1].

Kimley»Horn

Intersection Impacts:

I1. *Intersection #3, Jackson Road @Eagles Nest Road*
As shown in Table 2, this intersection operates at unacceptable LOS F during the AM and PM peak-hours without the project, and the project adds more than 5 seconds of delay to the northbound left turn movement during the AM and PM peak-hours. ***This is a significant impact***.

I2. *Intersection #9, Grant Line Road @ Sunrise Boulevard*
As shown in Table 2, this intersection operates at unacceptable LOS F during the AM peak-hour without the project, and the project adds more than 5 seconds of delay to the intersection. ***This is a significant impact***.

I3. *Intersection #11, Douglas Road @ Sunrise Boulevard*
As shown in Table 2, this intersection operates at LOS D during the PM peak-hour without the project, and the project results in LOS E. ***This is a significant impact***.

I4. *Intersection #21, Sunrise Boulevard @ White Rock Road*
As shown in Table 2, this intersection operates at unacceptable LOS E during the PM peak-hour without the project, and the project adds more than 5 seconds of delay to the intersection. ***This is a significant impact***.

I5. *Intersection #25, Sunrise Boulevard @ Zinfandel Drive*
As shown in Table 2, this intersection operates at unacceptable LOS E during the PM peak-hour without the project, and the project adds more than 5 seconds of delay to the intersection. ***This is a significant impact***.

Mitigations:

M1. *Intersection #3, Jackson Road and Eagles Nest Road*
The significant impact at this intersection during the AM and PM peak-hours can be mitigated by converting the intersection from side street stop control to signalized. As shown in Table 4, with this mitigation the intersection operates at LOS C or better during the AM and PM peak-hours. Therefore, ***this impact is less than significant***. However, the identified improvement falls under the jurisdiction of the County; therefore, neither the City nor the project applicant would have control over their timing or implementation. Thus, this impact would remain ***significant and unavoidable***. If the County allows the improvement to move forward, the impact would be classified as significant in the short term but eventually would be reduced to a less-than-significant level in the long term.

M2. *Intersection #9, Grant Line Road @ Sunrise Boulevard*
The significant impact at this intersection during the AM peak-hour can be mitigated by changing the southbound approach to include a right turn lane and an all-purpose lane. This mitigation includes restriping the southbound approach to move the bicycle lane from its existing location between the two travel lanes to the right shoulder and add hatching for the right turns, consistent with the Optional Through Right and Right-Turn-Only lane configuration included in Figure 9C-4a (CA) of the CaMUTCD[5]. As shown in Table 4, this mitigation measure results in the intersection operating at LOS E or better during the AM and PM peak-hours. Therefore, ***this impact is less than significant***. However, the identified improvement falls under the jurisdiction of the County; therefore, neither the City nor the project applicant would have control over their timing or

[5] California MUTCD 2014 Edition. Chapter 9C-Markings: Part 9 Traffic Control for Bicycle Facilities. November 2014

implementation. Thus, this impact would remain ***significant and unavoidable***. If the County allows the improvement to move forward, the impact would be classified as significant in the short term but eventually would be reduced to a less-than-significant level in the long term.

M3. Intersection #11, Douglas Road @ Sunrise Boulevard

The significant impact at this intersection during the PM peak-hour can be mitigated through signal timing optimization and the addition of a right-turn overlap signal phase for the eastbound right-turn, overlapping with the northbound left-turn movement. As shown in Table 4, this mitigation measure results in the intersection operating at LOS D during the AM and PM peak-hours. Therefore, ***this impact is less than significant***.

M4.Intersection #21, Sunrise Boulevard @ White Rock Road

The significant impact at this intersection during the PM peak-hour can be mitigated by optimizing the signal timings. As shown in Table 4, this mitigation measure results in the intersection operating at LOS D or better during the AM and PM peak-hours. Therefore, ***this impact is less than significant***

M5. Intersection #25, Sunrise Boulevard @ Zinfandel Drive

The significant impact at this intersection during the PM peak-hour can be mitigated by restriping the eastbound and westbound approaches to include a left turn lane and through-right lane. As shown in Table 4, this mitigation measure results in the intersection operating at LOS D or better during the PM peak-hour. Therefore, ***this impact is less than significant***

Table 4 – Existing (2017) plus Proposed Project Mitigated Intersection Level of Service

ID	Intersection	Control	Peak Hour	Existing plus Project		Existing plus Project (Mitigated)	
				Delay	LOS	Delay	LOS
3	Jackson Rd/SR-16 @ Eagles Nest Rd	Signal	AM	**18.0 (95.3 NB)**	**F**	20.0	C
			PM	**19.1 (*ECL NB)**	**F**	15.8	B
9	Grant Line Rd @ Sunrise Blvd	Signal	AM	**120.9**	**F**	61.9	E
			PM	54.9	D	32.1	C
11	Douglas Rd @ Sunrise Blvd	Signal	AM	35.0	D	35.0	D
			PM	**63.7**	**E**	53.2	D
21	Sunrise Blvd @ White Rock Rd	Signal	AM	33.2	C	33.2	C
			PM	**61.9**	**E**	54.3	D
25	Sunrise Blvd @ Zinfandel Dr	Signal	AM	**117.7**	**F**	**89.0**	**F**
			PM	**70.2**	**E**	54.5	D

<u>Cumulative plus Proposed Project Impacts</u>

As reflected in Table 3, the addition of the proposed project results in five (5) significant impacts to study intersections. The following is a discussion of each impact and its associated mitigation. Analysis worksheets for the mitigations for this scenario are provided in Appendix D. Please note that the impacts at Sunrise Boulevard and White Rock Road (Intersection #21) and Sunrise Boulevard and Zinfandel Drive (Intersection #25) were not identified in the previous Jaeger Ranch Traffic Impact Analysis[1].

Kimley»Horn

Intersection Impacts:

I1. *Intersection #10, Douglas Road @ Zinfandel Drive*
As shown in Table 3, this intersection operates at unacceptable LOS F during the AM peak-hour without the project, and the project adds more than 5 seconds of delay to the intersection during the AM peak-hour. This is a significant impact.

I2. *Intersection #11, Douglas Road @ Sunrise Boulevard*
As shown in Table 3, this intersection operates at unacceptable LOS F during the AM peak-hour without the project, and the project adds more than 5 seconds of delay to the intersection during the AM peak-hour. ***This is a significant impact***.

I3. *Intersection #21, Sunrise Boulevard and White Rock Road*
As shown in Table 3, this intersection operates at unacceptable LOS F during the AM peak-hour without the project, and the project adds more than 5 seconds of delay to the intersection during the AM peak-hour. ***This is a significant impact***.

I4. *Intersection #25, Sunrise Boulevard and Zinfandel Drive*
As shown in Table 3, this intersection operates at unacceptable LOS F during the AM peak-hour without the project, and the project adds more than 5 seconds of delay to the intersection during the AM peak-hour. ***This is a significant impact***.

I5. *Intersection #27, White Rock Road @Prairie City Road*
As shown in Table 3, this intersection operates at unacceptable LOS F during the AM and PM peak-hour without the project, and the project adds more than 5 seconds of delay to the intersection during the PM peak-hour. ***This is a significant impact***.

Mitigations:

M6. *Intersection #10, Douglas Road @ Zinfandel Drive*
The significant impact at this intersection during the AM peak-hour can mitigated by the conversion of the westbound right turn from permitted to a free right turn with a receiving lane. As shown in Table 5, this mitigation measure results in the intersection operating at LOS D during the AM and PM peak-hours. Therefore, this impact is less than significant. However, the identified improvement falls under the jurisdiction of the County; therefore, neither the City nor the project applicant would have control over their timing or implementation. Thus, this impact would remain significant and unavoidable. If the County allows the improvement to move forward, the impact would be classified as significant in the short term but eventually would be reduced to a less-than-significant level in the long term.

M7. *Intersection #11, Douglas Road @ Sunrise Boulevard*
The significant impact at this intersection during the AM peak-hour cannot be feasibly mitigated. The intersection of Douglas Road and Sunrise Boulevard is fully built out according to the City's General Plan. As shown Table 5, signal timing optimization is not enough to mitigate the project impacts to acceptable conditions. Therefore, ***this impact is significant and unavoidable***. However, as described in the Rio Del Oro Specific Plan DEIR/DEIS[6], there is potential to improve conditions through additional connectivity along Sunrise Boulevard and further build out of the City's General Plan network.

[6] Rio del Oro Specific Plan Project DEIR/DEIS. City of Rancho Cordova and USACE. April, 2008

Kimley»Horn

M8.Intersection #21, Sunrise Boulevard @ White Rock Road

The significant impact at this intersection during the PM peak-hour cannot be feasibly mitigated. The intersection of Sunrise Boulevard and White Rock Road is fully built out according to the City's General Plan. As shown in **Table 5,** signal timing optimization is not enough to mitigate the project impacts to acceptable conditions. Therefore, ***this impact is significant and unavoidable***.

M9.Intersection #25, Sunrise Boulevard @ Zinfandel Drive

The significant impact at this intersection during the AM peak-hour cannot be feasibly mitigated. The intersection of Sunrise Boulevard and Zinfandel Drive is fully built out according to the City's General Plan. As shown in **Table 5**, signal timing optimization is not enough to mitigate the project impacts to acceptable conditions. Therefore, ***this impact is significant and unavoidable***.

M10.Intersection #27, White Rock Road @ Prairie City Road

The significant impact at this intersection during the PM peak-hour can be mitigated with the addition of a second southbound right-turn lane and the addition of a right-turn overlap signal phase for the southbound right-turn. As shown in **Table 5**, this mitigation measure results in the intersection operating at LOS D or better during the AM and PM peak-hours. Therefore, ***this impact is less than significant***.

Table 5 – Cumulative (2040) plus Proposed Project Mitigated Intersection Level of Service

ID	Intersection	Control	Peak Hour	Cumulative plus Proposed Project		Cumulative plus Proposed Project (Mitigated)	
				Delay	LOS	Delay	LOS
10	Douglas Rd @ Zinfandel Dr	Signal	AM	**161.7**	**F**	51.7	D
			PM	43.9	D	43.0	D
11	Douglas Rd @ Sunrise Blvd	Signal	AM	**114.5**	**F**	**114.5**	**F**
			PM	**109.6**	**F**	**109.6**	**F**
21	Sunrise Blvd @ White Rock Rd	Signal	AM	**66.8**	**E**	**66.8**	**E**
			PM	**125.9**	**F**	**125.9**	**F**
25	Sunrise Blvd @ Zinfandel Dr	Signal	AM	**215.0**	**F**	**215.0**	**F**
			PM	**101.3**	**F**	**101.3**	**F**
27	White Rock Rd @ Prairie City Rd	Signal	AM	**144.8**	**F**	36.7	D
			PM	**171.0**	**F**	31.8	C

Conclusions

The following are the primary conclusions based on the analyses discussed herein:

- The proposed project is estimated to generate 11,606 new daily trips, with 843 new trips occurring during the AM peak-hour, and 1,102 new trips occurring during the PM peak-hour.
- The addition of the proposed project to the Existing (2017) Conditions results in a significant impact at five (5) study intersections. Four (4) of these impacts and mitigations were previously identified in the Jaeger Ranch Traffic Impact Analysis[1]. This analysis identified one additional impact to the intersection of Sunrise Boulevard with White Rock Road (Intersection #21). With the application of mitigation measures recommended herein, the impacts to all five (5) intersections can be mitigated to be *less than significant*.

Kimley»Horn

- The addition of the proposed project to Cumulative (2040) Conditions results in a significant impact at five (5) intersections. Three (3) of these impacts and mitigations were previously identified in the Jaeger Ranch Traffic Impact Analysis[1]. Two (2) of the impacts to intersections would be mitigated to *less than significant*. Three (3) locations do not have a feasible mitigation including the two (2) newly identified mitigations.

Attachments:

Exhibit 1 – Existing Project Site Vicinity Map
Exhibit 2 – Existing (2017) Peak Hour Traffic Volumes
Exhibit 3 – Existing (2017) Project Trip Distribution
Exhibit 4 – Existing (2017) Proposed Project Trip Assignment
Exhibit 5 – Existing (2017) plus Proposed Project Peak-Hour Volumes
Exhibit 6 – Cumulative Project Site Vicinity Map
Exhibit 7 – Cumulative (2040) Peak-Hour Traffic Volumes
Exhibit 8 – Cumulative (2040) Project Trip Distribution
Exhibit 9 – Cumulative (2040) Proposed Project Trip Assignment
Exhibit 10 – Cumulative (2040) plus Proposed Project Peak-Hour Volumes

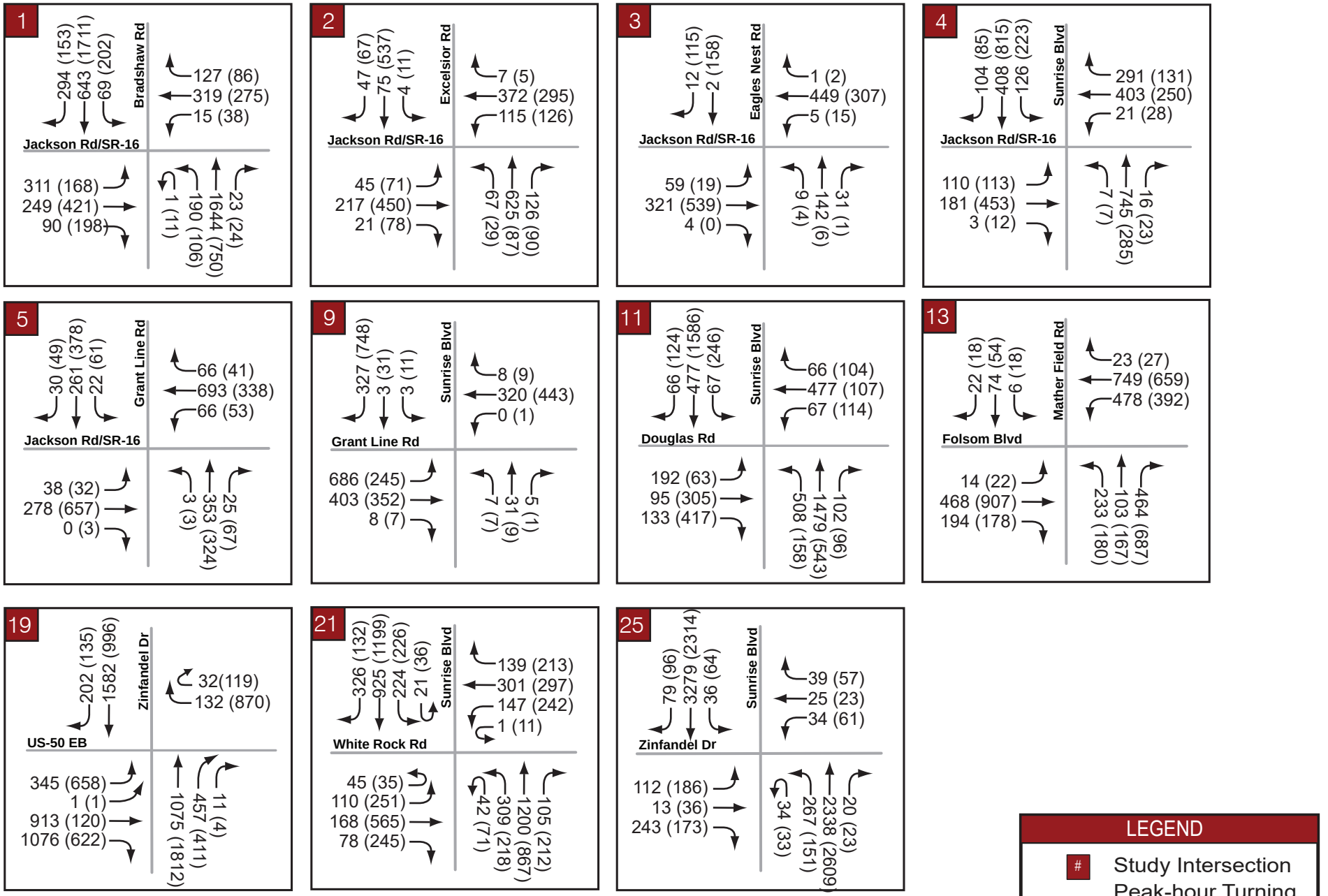
Appendix A – Analysis Worksheets for Existing (2017) plus Proposed Project Conditions
Appendix B – Analysis Worksheets for Cumulative (2040) plus Proposed Project Conditions
Appendix C– Analysis Worksheets for Existing (2017) plus Proposed Project Mitigated Conditions
Appendix D– Analysis Worksheets for Cumulative (2040) plus Proposed Project Mitigated Conditions

NOT TO SCALE

Madison Ave
Folsom Blvd
Fair Oaks Blvd
Prairie City Rd
White Rock Rd
Douglas Rd
Folsom Blvd
Mather Field Rd
Zinfandel Dr
Chrysanthy Blvd
Jaeger Rd
Keifer Blvd
Sunrise Blvd
Grant Line Rd
Jackson Rd
Florin Rd
Bradshaw Rd
Excelsior Rd
Eagles Nest Rd
CALIFORNIA 16

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27

LEGEND
Project Location
Study Intersection


1
Bradshaw Rd
Jackson Rd/SR-16
294 (153)
643 (1711)
69 (202)
127 (86)
319 (275)
15 (38)
311 (168)
249 (421)
90 (198)
1 (11)
190 (106)
1644 (750)
23 (24)
2
Excelsior Rd
Jackson Rd/SR-16
47 (67)
75 (537)
4 (11)
7 (5)
372 (295)
115 (126)
45 (71)
217 (450)
21 (78)
67 (29)
625 (87)
126 (90)
3
Eagles Nest Rd
Jackson Rd/SR-16
12 (115)
2 (158)
1 (2)
449 (307)
5 (15)
59 (19)
321 (539)
4 (0)
9 (4)
142 (6)
31 (1)
4
Sunrise Blvd
Jackson Rd/SR-16
104 (85)
408 (815)
126 (223)
291 (131)
403 (250)
21 (28)
110 (113)
181 (453)
3 (12)
7 (7)
745 (285)
16 (23)
5
Grant Line Rd
Jackson Rd/SR-16
30 (49)
261 (378)
22 (61)
66 (41)
693 (338)
66 (53)
38 (32)
278 (657)
0 (3)
3 (3)
353 (324)
25 (67)
9
Sunrise Blvd
Grant Line Rd
327 (748)
3 (31)
3 (11)
8 (9)
320 (443)
0 (1)
686 (245)
403 (352)
8 (7)
7 (7)
31 (9)
5 (1)
11
Sunrise Blvd
Douglas Rd
66 (124)
477 (1586)
67 (246)
66 (104)
477 (107)
67 (114)
192 (63)
95 (305)
133 (417)
508 (158)
1479 (543)
102 (96)
13
Mather Field Rd
Folsom Blvd
22 (18)
74 (54)
9 (18)
23 (27)
749 (659)
478 (392)
14 (22)
468 (907)
194 (178)
233 (180)
103 (167)
464 (687)
19
Zinfandel Dr
US-50 EB
202 (135)
1582 (996)
32(119)
132 (870)
345 (658)
1 (1)
913 (120)
1076 (622)
1075 (1812)
457 (411)
11 (4)
21
Sunrise Blvd
White Rock Rd
326 (132)
925 (1199)
224 (226)
21 (36)
139 (213)
301 (297)
147 (242)
1 (11)
45 (35)
110 (251)
168 (565)
78 (245)
309 (218)
1200 (867)
105 (212)
42 (71)
25
Sunrise Blvd
Zinfandel Dr
79 (96)
3279 (2314)
36 (64)
39 (57)
25 (23)
34 (61)
112 (186)
13 (36)
243 (173)
34 (33)
267 (151)
2338 (2609)
20 (23)
LEGEND
#
Study Intersection
AM(PM)
Peak-hour Turning Movement Volumes

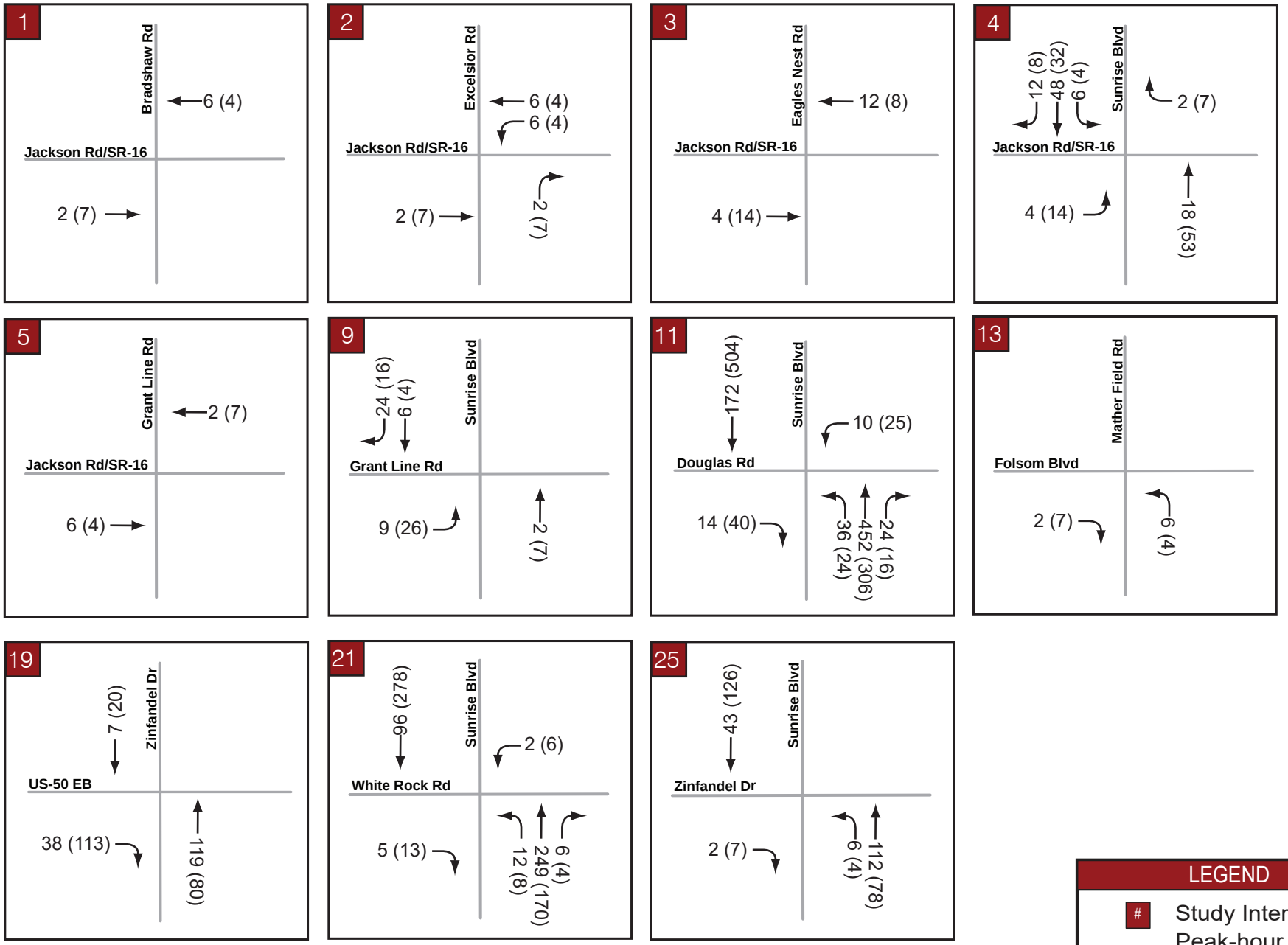
NOT TO SCALE

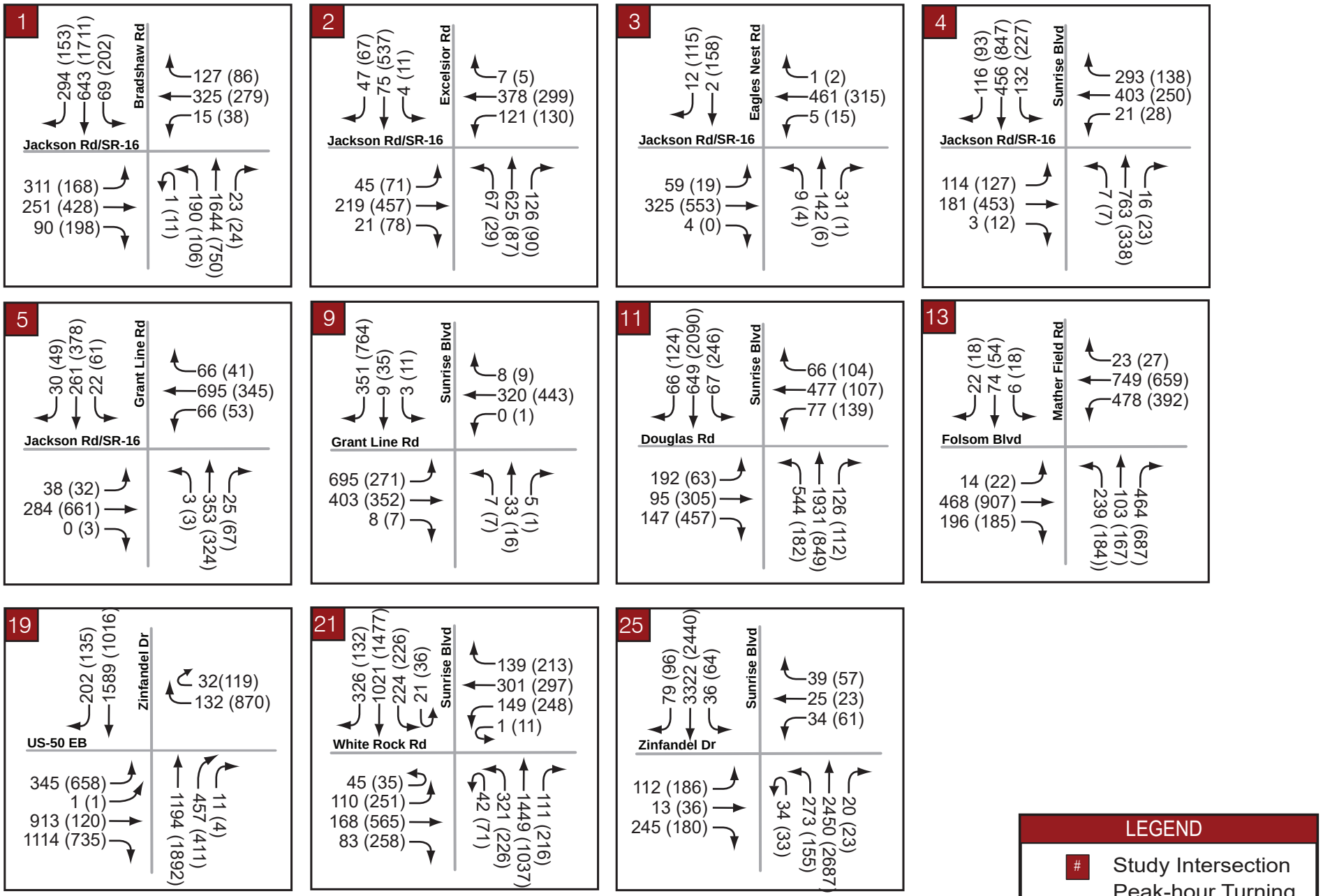
Madison Ave
Fair Oaks Blvd
Folsom Blvd
Prairie City Rd
White Rock Rd
Folsom Blvd
Mather Field Rd
International Dr
Douglas Rd
Zinfandel Dr
Rancho Cordova Pkwy
Chrysanthy Blvd
Keifer Blvd
Jackson Rd / SR -16
Sunrise Blvd
Grant Line Rd
Bradshaw Rd
Florin Rd
Excelsior Rd
Eagles Nest Rd

LEGEND
- Project Location
- # Study Intersection
- XX% Trip Distribution Percentage
- XX% Local Trip End Percentage

Kimley»Horn

Exhibit 3
Existing (2017) Project Trip Distribution


1
Bradshaw Rd
6 (4)
Jackson Rd/SR-16
2 (7)
2
Excelsior Rd
6 (4)
6 (4)
Jackson Rd/SR-16
2 (7)
2 (7)
3
Eagles Nest Rd
12 (8)
Jackson Rd/SR-16
4 (14)
4
12 (8)
48 (32)
6 (4)
Sunrise Blvd
2 (7)
Jackson Rd/SR-16
4 (14)
18 (53)
5
Grant Line Rd
2 (7)
Jackson Rd/SR-16
6 (4)
9
24 (16)
6 (4)
Sunrise Blvd
Grant Line Rd
9 (26)
2 (7)
11
172 (504)
Sunrise Blvd
10 (25)
Douglas Rd
14 (40)
36 (24)
452 (306)
24 (16)
13
Mather Field Rd
Folsom Blvd
2 (7)
6 (4)
19
7 (20)
Zinfandel Dr
US-50 EB
38 (113)
119 (80)
21
96 (278)
Sunrise Blvd
2 (6)
White Rock Rd
5 (13)
12 (8)
249 (170)
6 (4)
25
43 (126)
Sunrise Blvd
Zinfandel Dr
2 (7)
6 (4)
112 (78)
LEGEND
#
Study Intersection
AM(PM)
Peak-hour Turning Movement Volumes


1
Jackson Rd/SR-16
Bradshaw Rd
294 (153)
643 (1711)
69 (202)
127 (86)
325 (279)
15 (38)
311 (168)
251 (428)
90 (198)
1 (11)
190 (106)
1644 (750)
23 (24)
2
Jackson Rd/SR-16
Excelsior Rd
47 (67)
75 (537)
4 (11)
7 (5)
378 (299)
121 (130)
45 (71)
219 (457)
21 (78)
67 (29)
625 (87)
126 (90)
3
Jackson Rd/SR-16
Eagles Nest Rd
12 (115)
2 (158)
1 (2)
461 (315)
5 (15)
59 (19)
325 (553)
4 (0)
9 (4)
142 (6)
31 (1)
4
Jackson Rd/SR-16
Sunrise Blvd
116 (93)
456 (847)
132 (227)
293 (138)
403 (250)
21 (28)
114 (127)
181 (453)
3 (12)
7 (7)
763 (338)
16 (23)
5
Jackson Rd/SR-16
Grant Line Rd
30 (49)
261 (378)
22 (61)
66 (41)
695 (345)
66 (53)
38 (32)
284 (661)
0 (3)
3 (3)
353 (324)
25 (67)
9
Grant Line Rd
Sunrise Blvd
351 (764)
9 (35)
3 (11)
8 (9)
320 (443)
0 (1)
695 (271)
403 (352)
8 (7)
7 (7)
33 (16)
5 (1)
11
Douglas Rd
Sunrise Blvd
66 (124)
649 (2090)
67 (246)
66 (104)
477 (107)
77 (139)
192 (63)
95 (305)
147 (457)
544 (182)
1931 (849)
126 (112)
13
Folsom Blvd
Mather Field Rd
22 (18)
74 (54)
9 (18)
23 (27)
749 (659)
478 (392)
14 (22)
468 (907)
196 (185)
239 (184))
103 (167)
464 (687)
19
US-50 EB
Zinfandel Dr
202 (135)
1589 (1016)
32(119)
132 (870)
345 (658)
1 (1)
913 (120)
1114 (735)
1194 (1892)
457 (411)
11 (4)
21
White Rock Rd
Sunrise Blvd
326 (132)
1021 (1477)
224 (226)
21 (36)
139 (213)
301 (297)
149 (248)
1 (11)
45 (35)
110 (251)
168 (565)
83 (258)
42 (71)
321 (226)
1449 (1037)
111 (216)
25
Zinfandel Dr
Sunrise Blvd
79 (96)
3322 (2440)
36 (64)
39 (57)
25 (23)
34 (61)
112 (186)
13 (36)
245 (180)
34 (33)
273 (155)
2450 (2687)
20 (23)
LEGEND
#
Study Intersection
AM(PM)
Peak-hour Turning Movement Volumes

NOT TO SCALE

Madison Ave
Fair Oaks Blvd
Folsom Blvd
Prairie City Rd
White Rock Rd
International Dr
Rio Del Oro Pkwy
Centennial Dr
Douglas Rd
Mather Field Rd
Zinfandel Dr
Chrysanthy Blvd
Rancho Cordova Pkwy
Americanos Blvd
Keifer Blvd
Sunrise Blvd
Bradshaw Rd
Excelsior Rd
Florin Rd
Eagles Nest Rd
Jackson Rd
Grant Line Rd
CALIFORNIA 16

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

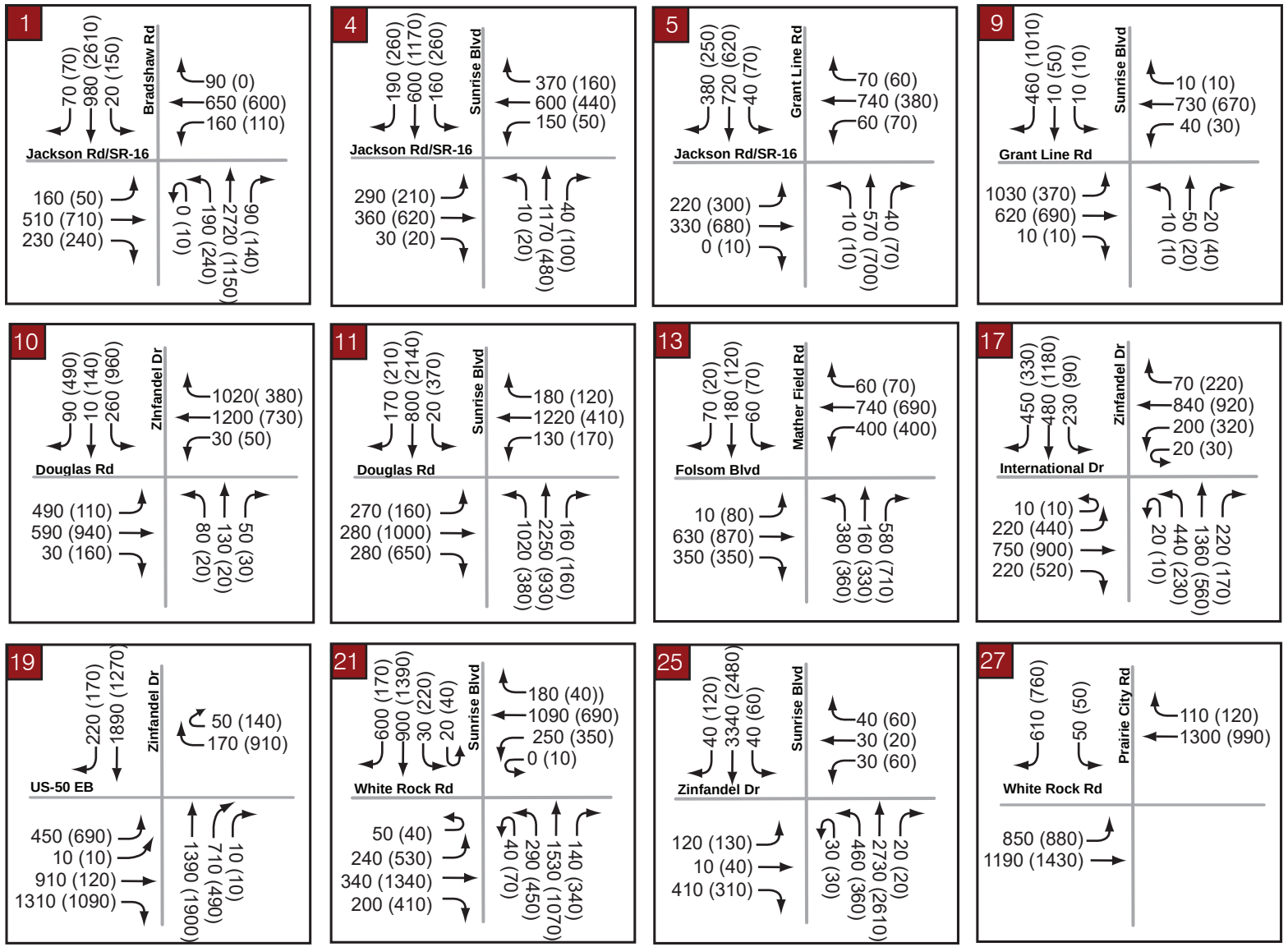
LEGEND

- Project Location
- # Existing (2017) Study Intersection
- # Cumulative (2040) Study Intersection

Kimley»Horn

Exhibit 6

Cumulative (2040) Study Intersections


1
Bradshaw Rd
Jackson Rd/SR-16
70 (70)
980 (2610)
20 (150)
90 (0)
650 (600)
160 (110)
160 (50)
510 (710)
230 (240)
0 (10)
190 (240)
2720 (1150)
90 (140)
4
Sunrise Blvd
Jackson Rd/SR-16
190 (260)
600 (1170)
160 (260)
370 (160)
600 (440)
150 (50)
290 (210)
360 (620)
30 (20)
10 (20)
1170 (480)
40 (100)
5
Grant Line Rd
Jackson Rd/SR-16
380 (250)
720 (620)
40 (70)
70 (60)
740 (380)
60 (70)
220 (300)
330 (680)
0 (10)
10 (10)
570 (700)
40 (70)
9
Sunrise Blvd
Grant Line Rd
460 (1010)
10 (50)
10 (10)
10 (10)
730 (670)
40 (30)
1030 (370)
620 (690)
10 (10)
10 (10
50 (20)
20 (40)
10
Zinfandel Dr
Douglas Rd
90 (490)
10 (140)
260 (960)
1020(380)
1200 (730)
30 (50)
490 (110)
590 (940)
30 (160)
80 (20)
130 (20)
50 (30)
11
Sunrise Blvd
Douglas Rd
170 (210)
800 (2140)
20 (370)
180 (120)
1220 (410)
130 (170)
270 (160)
280 (1000)
280 (650)
1020 (380)
2250 (930)
160 (160)
13
Mather Field Rd
Folsom Blvd
70 (20)
180 (120)
60 (70)
60 (70)
740 (690)
400 (400)
10 (80)
630 (870)
350 (350)
380 (360)
160 (330)
580 (710)
17
Zinfandel Dr
International Dr
450 (330)
480 (1180)
230 (90)
70 (220)
840 (920)
200 (320)
20 (30)
10 (10)
220 (440)
750 (900)
220 (520)
20 (10)
440 (230)
1360 (560)
220 (170)
19
Zinfandel Dr
US-50 EB
220 (170)
1890 (1270)
50 (140)
170 (910)
450 (690)
10 (10)
910 (120)
1310 (1090)
1390 (1900)
710 (490)
10 (10)
21
Sunrise Blvd
White Rock Rd
600 (170)
900 (1390)
30 (220)
20 (40)
180 (40))
1090 (690)
250 (350)
0 (10)
50 (40)
240 (530)
340 (1340)
200 (410)
40 (70)
290 (450)
1530 (1070)
140 (340)
25
Sunrise Blvd
Zinfandel Dr
40 (120)
3340 (2480)
40 (60)
40 (60)
30 (20)
30 (60)
120 (130)
10 (40)
410 (310)
30 (30)
460 (360)
2730 (2610)
20 (20)
27
Prairie City Rd
White Rock Rd
610 (760)
50 (50)
110 (120)
1300 (990)
850 (880)
1190 (1430)
LEGEND
#
Study Intersection
AM(PM)
Peak-hour Turning Movement Volumes

ATTACHMENT 4

NOT TO SCALE

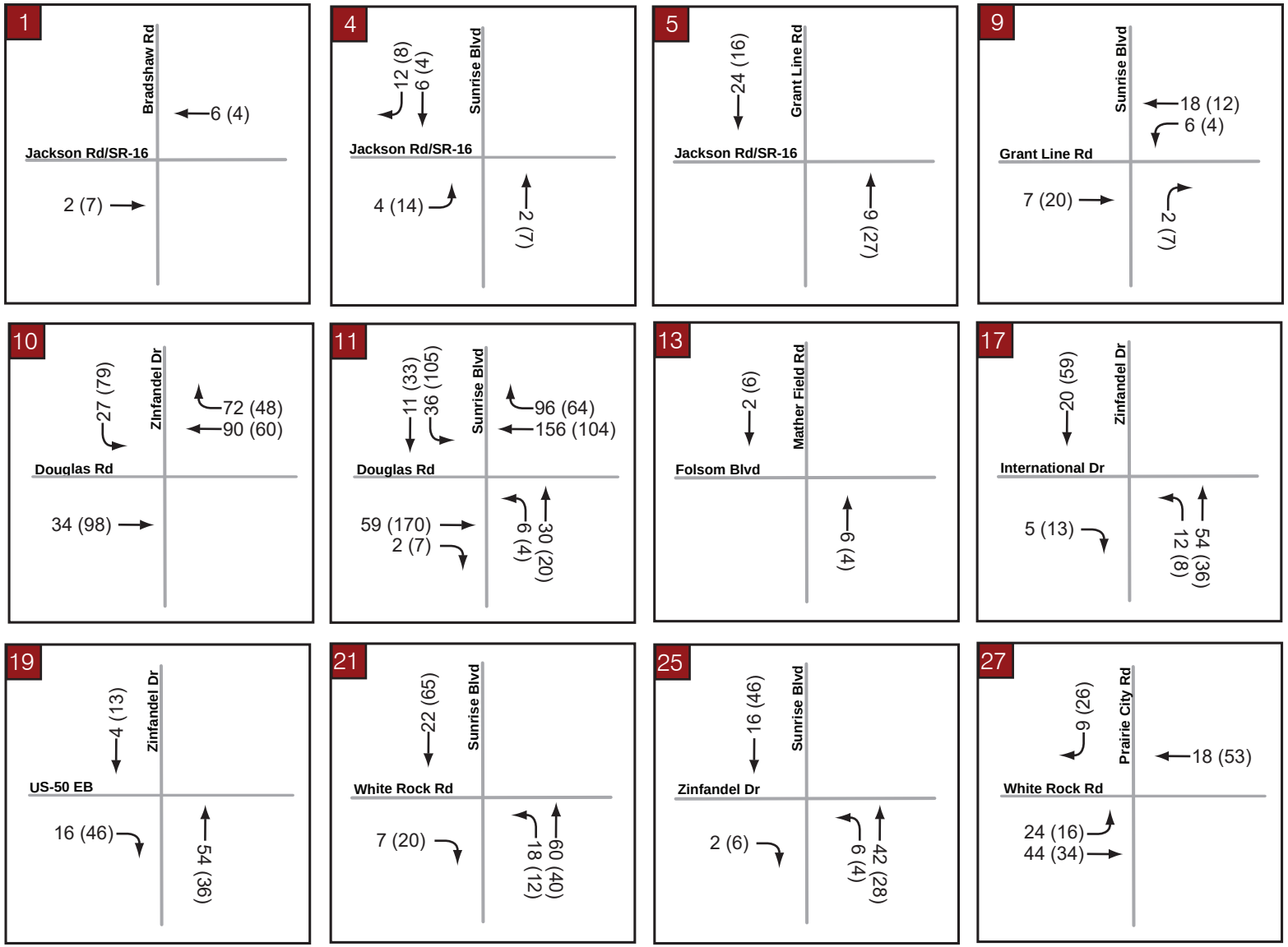
Madison Ave
Fair Oaks Blvd
Folsom Blvd
Prairie City Rd
White Rock Rd
International Dr
Rio Del Oro Pkwy
Centennial Dr
Douglas Rd
Zinfandel Dr
Rancho Cordova Pkwy
Americanos Blvd
Chrysanthy Blvd
Keifer Blvd
Sunrise Blvd
Jackson Rd
Florin Rd
Excelsior Rd
Eagles Nest Rd
Grant Line Rd
Mather Field Rd
Bradshaw Rd
CALIFORNIA 16

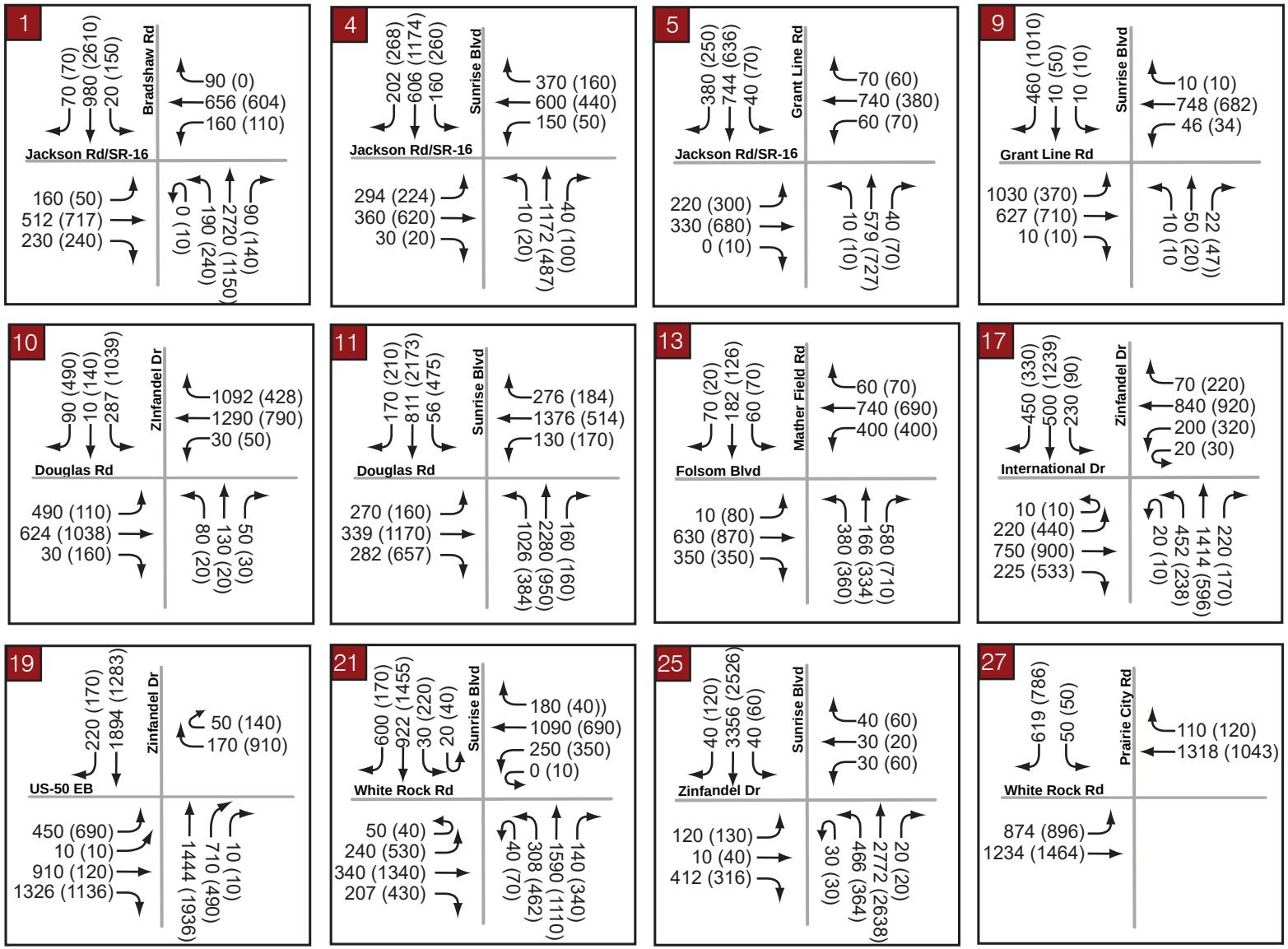
LEGEND

- Project Location
- # Existing (2017) Study Intersection
- # Cumulative (2040) Study Intersection
- XX% Trip Distribution Percentage
- XX% Local Trip End Percentage

Kimley»Horn

Exhibit 8
Cumulative (2040) Project Trip Distribution


1
Bradshaw Rd
6 (4)
Jackson Rd/SR-16
2 (7)
4
12 (8)
6 (4)
Sunrise Blvd
Jackson Rd/SR-16
4 (14)
2 (7)
5
24 (16)
Grant Line Rd
Jackson Rd/SR-16
9 (27)
9
Sunrise Blvd
18 (12)
6 (4)
Grant Line Rd
7 (20)
2 (7)
10
27 (79)
Zinfandel Dr
72 (48)
90 (60)
Douglas Rd
34 (98)
11
11 (33)
36 (105)
Sunrise Blvd
96 (64)
156 (104)
Douglas Rd
59 (170)
2 (7)
6 (4)
30 (20)
13
2 (6)
Mather Field Rd
Folsom Blvd
6 (4)
17
20 (59)
Zinfandel Dr
International Dr
5 (13)
12 (8)
54 (36)
19
4 (13)
Zinfandel Dr
US-50 EB
16 (46)
54 (36)
21
22 (65)
Sunrise Blvd
White Rock Rd
7 (20)
18 (12)
60 (40)
25
16 (46)
Sunrise Blvd
Zinfandel Dr
2 (6)
6 (4)
42 (28)
27
9 (26)
Prairie City Rd
18 (53)
White Rock Rd
24 (16)
44 (34)
LEGEND
#
Study Intersection
AM(PM)
Peak-hour Turning Movement Volumes


1
Bradshaw Rd
Jackson Rd/SR-16
70 (70)
980 (2610)
20 (150)
90 (0)
656 (604)
160 (110)
160 (50)
512 (717)
230 (240)
0 (10)
190 (240)
2720 (1150)
90 (140)
4
Sunrise Blvd
Jackson Rd/SR-16
202 (268)
606 (1174)
160 (260)
370 (160)
600 (440)
150 (50)
294 (224)
360 (620)
30 (20)
10 (20)
1172 (487)
40 (100)
5
Grant Line Rd
Jackson Rd/SR-16
380 (250)
744 (636)
40 (70)
70 (60)
740 (380)
60 (70)
220 (300)
330 (680)
0 (10)
10 (10)
579 (727)
40 (70)
9
Sunrise Blvd
Grant Line Rd
460 (1010)
10 (50)
10 (10)
10 (10)
748 (682)
46 (34)
1030 (370)
627 (710)
10 (10)
10 (10)
50 (20)
22 (47))
10
Zinfandel Dr
Douglas Rd
90 (490)
10 (140)
287 (1039)
1092 (428)
1290 (790)
30 (50)
490 (110)
624 (1038)
30 (160)
80 (20)
130 (20)
50 (30)
11
Sunrise Blvd
Douglas Rd
170 (210)
811 (2173)
56 (475)
276 (184)
1376 (514)
130 (170)
270 (160)
339 (1170)
282 (657)
1026 (384)
2280 (950)
160 (160)
13
Mather Field Rd
Folsom Blvd
70 (20)
182 (126)
60 (70)
60 (70)
740 (690)
400 (400)
10 (80)
630 (870)
350 (350)
380 (360)
166 (334)
580 (710)
17
Zinfandel Dr
International Dr
450 (330)
500 (1239)
230 (90)
70 (220)
840 (920)
200 (320)
20 (30)
10 (10)
220 (440)
750 (900)
225 (533)
20 (10)
452 (238)
1414 (596)
220 (170)
19
Zinfandel Dr
US-50 EB
220 (170)
1894 (1283)
50 (140)
170 (910)
450 (690)
10 (10)
910 (120)
1326 (1136)
1444 (1936)
10 (10)
710 (490)
21
Sunrise Blvd
White Rock Rd
600 (170)
922 (1455)
30 (220)
20 (40)
180 (40))
1090 (690)
250 (350)
0 (10)
50 (40)
240 (530)
340 (1340)
207 (430)
40 (70)
308 (462)
1590 (1110)
140 (340)
25
Sunrise Blvd
Zinfandel Dr
40 (120)
3356 (2526)
40 (60)
40 (60)
30 (20)
30 (60)
120 (130)
10 (40)
412 (316)
30 (30)
466 (364)
2772 (2638)
20 (20)
27
Prairie City Rd
White Rock Rd
619 (786)
50 (50)
110 (120)
1318 (1043)
874 (896)
1234 (1464)
LEGEND
#
Study Intersection
AM(PM)
Peak-hour Turning Movement Volumes

Kimley»Horn

Appendix A

Analysis Worksheets for Existing (2017) plus Proposed Project Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	311	251	90	15	325	127	1	190	1644	23	69	643
Future Volume (veh/h)	311	251	90	15	325	127	1	190	1644	23	69	643
Number	3	8	18	7	4	14		1	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00		1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	362	292	105	16	357	140		216	1868	26	76	707
Adj No. of Lanes	1	1	1	1	1	1		1	2	0	1	2
Peak Hour Factor	0.86	0.86	0.86	0.91	0.91	0.91		0.88	0.88	0.88	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2
Cap, veh/h	286	660	561	19	380	323		227	1471	20	95	1193
Arrive On Green	0.16	0.35	0.35	0.01	0.20	0.20		0.13	0.41	0.41	0.05	0.34
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583		1774	3573	50	1774	3539
Grp Volume(v), veh/h	362	292	105	16	357	140		216	923	971	76	707
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583		1774	1770	1853	1774	1770
Q Serve(g_s), s	24.5	18.3	7.0	1.4	28.7	11.7		18.4	62.6	62.6	6.4	25.2
Cycle Q Clear(g_c), s	24.5	18.3	7.0	1.4	28.7	11.7		18.4	62.6	62.6	6.4	25.2
Prop In Lane	1.00		1.00	1.00		1.00		1.00		0.03	1.00	
Lane Grp Cap(c), veh/h	286	660	561	19	380	323		227	728	763	95	1193
V/C Ratio(X)	1.27	0.44	0.19	0.83	0.94	0.43		0.95	1.27	1.27	0.80	0.59
Avail Cap(c_a), veh/h	286	660	561	227	399	339		227	728	763	286	1457
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.8	37.6	34.0	75.1	59.6	52.9		65.8	44.7	44.7	71.1	41.8
Incr Delay (d2), s/veh	144.8	0.2	0.1	26.6	28.8	0.3		45.2	130.9	133.1	5.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.5	9.4	3.0	0.8	17.8	5.2		11.9	57.0	60.2	3.3	12.3
LnGrp Delay(d),s/veh	208.5	37.8	34.0	101.7	88.4	53.2		111.0	175.7	177.8	76.8	42.1
LnGrp LOS	F	D	C	F	F	D		F	F	F	E	D
Approach Vol, veh/h		759			513				2110			783
Approach Delay, s/veh		118.7			79.2				170.0			45.5
Approach LOS		F			E				F			D

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	58.7	30.0	38.4	13.7	70.0	7.2	61.3
Change Period (Y+Rc), s	5.5	7.4	5.5	7.4	5.5	7.4	5.5	* 7.4
Max Green Setting (Gmax), s	19.5	62.6	24.5	32.6	24.5	62.6	19.5	* 33
Max Q Clear Time (g_c+I1), s	20.4	27.2	26.5	30.7	8.4	64.6	3.4	20.3
Green Ext Time (p_c), s	0.0	3.8	0.0	0.3	0.1	0.0	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	126.1
HCM 2010 LOS	F

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	294
Future Volume (veh/h)	294
Number	12
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	0
Adj No. of Lanes	1
Peak Hour Factor	0.91
Percent Heavy Veh, %	2
Cap, veh/h	534
Arrive On Green	0.00
Sat Flow, veh/h	1583
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	1583
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	534
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	652
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	0.0
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	219	21	121	378	7	67	625	128	4	75	47
Future Volume (veh/h)	45	219	21	121	378	7	67	625	128	4	75	47
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	58	281	27	136	425	8	73	679	139	5	88	55
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.78	0.78	0.78	0.89	0.89	0.89	0.92	0.92	0.92	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	72	528	50	174	779	15	92	576	118	69	397	248
Arrive On Green	0.04	0.16	0.16	0.10	0.22	0.22	0.05	0.38	0.38	0.04	0.37	0.37
Sat Flow, veh/h	1774	3266	311	1774	3554	67	1774	1501	307	1774	1073	671
Grp Volume(v), veh/h	58	151	157	136	211	222	73	0	818	5	0	143
Grp Sat Flow(s),veh/h/ln	1774	1770	1808	1774	1770	1851	1774	0	1809	1774	0	1744
Q Serve(g_s), s	1.7	4.2	4.3	4.0	5.7	5.7	2.2	0.0	20.5	0.1	0.0	3.0
Cycle Q Clear(g_c), s	1.7	4.2	4.3	4.0	5.7	5.7	2.2	0.0	20.5	0.1	0.0	3.0
Prop In Lane	1.00		0.17	1.00		0.04	1.00		0.17	1.00		0.38
Lane Grp Cap(c), veh/h	72	286	292	174	388	406	92	0	694	69	0	646
V/C Ratio(X)	0.81	0.53	0.54	0.78	0.54	0.55	0.79	0.00	1.18	0.07	0.00	0.22
Avail Cap(c_a), veh/h	365	1838	1877	365	1838	1922	365	0	694	365	0	669
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.4	20.5	20.6	23.5	18.5	18.5	25.1	0.0	16.5	24.8	0.0	11.5
Incr Delay (d2), s/veh	7.7	2.2	2.2	2.9	1.7	1.6	5.6	0.0	95.1	0.2	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.2	2.3	2.1	2.9	3.1	1.2	0.0	28.3	0.1	0.0	1.6
LnGrp Delay(d),s/veh	33.2	22.7	22.7	26.4	20.2	20.1	30.7	0.0	111.6	24.9	0.0	12.3
LnGrp LOS	C	C	C	C	C	C	C		F	C		B
Approach Vol, veh/h		366			569			891			148	
Approach Delay, s/veh		24.4			21.7			105.0			12.8	
Approach LOS		C			C			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	16.2	6.8	24.3	9.2	13.1	6.1	25.0
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.5
Max Green Setting (Gmax), s	11.0	55.5	11.0	20.5	11.0	55.5	11.0	20.5
Max Q Clear Time (g_c+I1), s	3.7	7.7	4.2	5.0	6.0	6.3	2.1	22.5
Green Ext Time (p_c), s	0.0	3.5	0.0	1.8	0.0	2.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	59.1
HCM 2010 LOS	E

Notes

Intersection	
Int Delay, s/veh	18

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	59	325	4	5	461	1	9	142	31	0	2	12
Future Vol, veh/h	59	325	4	5	461	1	9	142	31	0	2	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	350	-	-	350	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	92	92	92	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	65	357	4	5	501	1	13	203	44	0	3	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	502	0	0	361	0	0	1011	1001	359	1125	1003	502
Stage 1	-	-	-	-	-	-	489	489	-	512	512	-
Stage 2	-	-	-	-	-	-	522	512	-	613	491	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1062	-	-	1198	-	-	218	243	685	182	242	569
Stage 1	-	-	-	-	-	-	561	549	-	545	536	-
Stage 2	-	-	-	-	-	-	538	536	-	480	548	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1062	-	-	1198	-	-	199	227	685	38	226	569
Mov Cap-2 Maneuver	-	-	-	-	-	-	199	227	-	38	226	-
Stage 1	-	-	-	-	-	-	527	516	-	512	534	-
Stage 2	-	-	-	-	-	-	517	534	-	256	515	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.1	80.9	12.9
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	225	685	1062	-	-	1198	-	-	226	569
HCM Lane V/C Ratio	0.959	0.065	0.061	-	-	0.005	-	-	0.013	0.03
HCM Control Delay (s)	95.3	10.6	8.6	-	-	8	-	-	21.1	11.5
HCM Lane LOS	F	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	8.4	0.2	0.2	-	-	0	-	-	0	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	181	3	21	403	293	7	763	16	132	456	116
Future Volume (veh/h)	114	181	3	21	403	293	7	763	16	132	456	116
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	125	199	3	23	433	315	8	857	18	140	485	123
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.91	0.91	0.91	0.93	0.93	0.93	0.89	0.89	0.89	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	147	553	470	29	429	364	37	802	17	163	954	942
Arrive On Green	0.08	0.30	0.30	0.02	0.23	0.23	0.02	0.44	0.44	0.09	0.51	0.51
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	1818	38	1774	1863	1583
Grp Volume(v), veh/h	125	199	3	23	433	315	8	0	875	140	485	123
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	0	1856	1774	1863	1583
Q Serve(g_s), s	10.0	12.1	0.2	1.9	33.2	27.6	0.6	0.0	63.6	11.2	24.8	4.9
Cycle Q Clear(g_c), s	10.0	12.1	0.2	1.9	33.2	27.6	0.6	0.0	63.6	11.2	24.8	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	147	553	470	29	429	364	37	0	818	163	954	942
V/C Ratio(X)	0.85	0.36	0.01	0.80	1.01	0.86	0.22	0.00	1.07	0.86	0.51	0.13
Avail Cap(c_a), veh/h	252	553	470	252	429	364	252	0	818	301	954	942
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.2	39.9	35.7	70.7	55.5	53.3	69.5	0.0	40.3	64.6	23.2	12.8
Incr Delay (d2), s/veh	5.1	0.1	0.0	17.2	45.9	18.2	1.1	0.0	51.6	5.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	6.3	0.1	1.1	22.5	13.9	0.3	0.0	44.2	5.7	12.7	2.1
LnGrp Delay(d),s/veh	70.4	40.0	35.7	87.9	101.5	71.5	70.5	0.0	91.9	69.5	23.4	12.8
LnGrp LOS	E	D	D	F	F	E	E		F	E	C	B
Approach Vol, veh/h		327			771			883			748	
Approach Delay, s/veh		51.6			88.8			91.7			30.3	
Approach LOS		D			F			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	40.0	7.5	80.3	6.8	49.6	17.8	70.0
Change Period (Y+Rc), s	4.5	6.8	4.5	* 6.4	4.5	6.8	4.5	6.4
Max Green Setting (Gmax), s	20.5	33.2	20.5	* 64	20.5	33.2	24.5	63.6
Max Q Clear Time (g_c+I1), s	12.0	35.2	2.6	26.8	3.9	14.1	13.2	65.6
Green Ext Time (p_c), s	0.0	0.0	0.0	1.7	0.0	0.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	69.3
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	284	0	66	695	66	3	353	25	22	261	30
Future Volume (veh/h)	38	284	0	66	695	66	3	353	25	22	261	30
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	43	323	0	74	781	74	3	380	27	25	293	34
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.88	0.88	0.88	0.89	0.89	0.89	0.93	0.93	0.93	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	55	674	0	92	641	61	3	392	28	27	311	36
Arrive On Green	0.03	0.36	0.00	0.05	0.38	0.38	0.23	0.23	0.23	0.21	0.21	0.21
Sat Flow, veh/h	1774	1863	0	1774	1676	159	13	1706	121	130	1519	176
Grp Volume(v), veh/h	43	323	0	74	0	855	410	0	0	352	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1774	0	1835	1841	0	0	1825	0	0
Q Serve(g_s), s	4.0	22.1	0.0	6.8	0.0	63.2	36.5	0.0	0.0	31.4	0.0	0.0
Cycle Q Clear(g_c), s	4.0	22.1	0.0	6.8	0.0	63.2	36.5	0.0	0.0	31.4	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.09	0.01		0.07	0.07		0.10
Lane Grp Cap(c), veh/h	55	674	0	92	0	701	423	0	0	374	0	0
V/C Ratio(X)	0.78	0.48	0.00	0.81	0.00	1.22	0.97	0.00	0.00	0.94	0.00	0.00
Avail Cap(c_a), veh/h	274	716	0	220	0	701	423	0	0	422	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	79.5	40.8	0.0	77.6	0.0	51.1	63.1	0.0	0.0	64.7	0.0	0.0
Incr Delay (d2), s/veh	8.4	0.2	0.0	6.1	0.0	111.3	35.5	0.0	0.0	26.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	11.4	0.0	3.5	0.0	53.6	22.7	0.0	0.0	18.6	0.0	0.0
LnGrp Delay(d),s/veh	87.9	40.9	0.0	83.7	0.0	162.4	98.6	0.0	0.0	91.3	0.0	0.0
LnGrp LOS	F	D		F		F	F			F		
Approach Vol, veh/h		366			929			410			352	
Approach Delay, s/veh		46.5			156.2			98.6			91.3	
Approach LOS		D			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.7	70.0		40.7	13.0	66.6		45.0
Change Period (Y+Rc), s	4.5	6.8		6.8	4.5	* 6.8		7.0
Max Green Setting (Gmax), s	25.5	63.2		38.2	20.5	* 64		38.0
Max Q Clear Time (g_c+I1), s	6.0	65.2		33.4	8.8	24.1		38.5
Green Ext Time (p_c), s	0.0	0.0		0.5	0.0	1.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	114.1
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	695	403	8	0	320	8	7	33	5	3	9	351
Future Volume (veh/h)	695	403	8	0	320	8	7	33	5	3	9	351
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	709	411	0	0	438	11	7	34	5	4	11	418
Adj No. of Lanes	1	1	1	1	1	0	0	1	0	0	1	1
Peak Hour Factor	0.98	0.98	0.98	0.73	0.73	0.73	0.98	0.98	0.98	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	451	1069	909	2	476	12	13	62	9	105	288	741
Arrive On Green	0.25	0.57	0.00	0.00	0.26	0.26	0.05	0.05	0.05	0.21	0.21	0.21
Sat Flow, veh/h	1774	1863	1583	1774	1809	45	275	1336	196	490	1348	1583
Grp Volume(v), veh/h	709	411	0	0	0	449	46	0	0	15	0	418
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1855	1808	0	0	1838	0	1583
Q Serve(g_s), s	24.5	11.6	0.0	0.0	0.0	22.7	2.4	0.0	0.0	0.6	0.0	18.4
Cycle Q Clear(g_c), s	24.5	11.6	0.0	0.0	0.0	22.7	2.4	0.0	0.0	0.6	0.0	18.4
Prop In Lane	1.00		1.00	1.00		0.02	0.15		0.11	0.27		1.00
Lane Grp Cap(c), veh/h	451	1069	909	2	0	488	83	0	0	393	0	741
V/C Ratio(X)	1.57	0.38	0.00	0.00	0.00	0.92	0.55	0.00	0.00	0.04	0.00	0.56
Avail Cap(c_a), veh/h	451	1241	1055	359	0	1231	668	0	0	656	0	968
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.9	11.2	0.0	0.0	0.0	34.6	45.0	0.0	0.0	30.0	0.0	18.5
Incr Delay (d2), s/veh	268.1	0.1	0.0	0.0	0.0	3.2	2.1	0.0	0.0	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	45.5	6.0	0.0	0.0	0.0	12.0	1.2	0.0	0.0	0.3	0.0	8.1
LnGrp Delay(d),s/veh	304.0	11.3	0.0	0.0	0.0	37.7	47.1	0.0	0.0	30.1	0.0	18.8
LnGrp LOS	F	B				D	D			C		B
Approach Vol, veh/h		1120			449			46			433	
Approach Delay, s/veh		196.6			37.7			47.1			19.2	
Approach LOS		F			D			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	30.0	31.3		26.2	0.0	61.3		8.8
Change Period (Y+Rc), s	5.5	6.0		* 5.6	5.5	* 6		4.4
Max Green Setting (Gmax), s	24.5	64.0		* 34	19.5	* 64		35.6
Max Q Clear Time (g_c+I1), s	26.5	24.7		20.4	0.0	13.6		4.4
Green Ext Time (p_c), s	0.0	0.6		0.2	0.0	0.6		0.0

Intersection Summary		
HCM 2010 Ctrl Delay	120.9	
HCM 2010 LOS	F	

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	192	95	147	77	477	66	544	1931	126	67	649	66
Future Volume (veh/h)	192	95	147	77	477	66	544	1931	126	67	649	66
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	211	104	162	87	536	74	591	2099	137	84	811	82
Adj No. of Lanes	2	3	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89	0.92	0.92	0.92	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	277	1095	341	141	623	279	647	2325	715	137	1571	489
Arrive On Green	0.08	0.22	0.22	0.04	0.18	0.18	0.19	0.46	0.46	0.04	0.31	0.31
Sat Flow, veh/h	3442	5085	1583	3442	3539	1583	3442	5085	1564	3442	5085	1583
Grp Volume(v), veh/h	211	104	162	87	536	74	591	2099	137	84	811	82
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1770	1583	1721	1695	1564	1721	1695	1583
Q Serve(g_s), s	6.1	1.7	9.1	2.5	15.0	4.1	17.2	39.0	5.3	2.5	13.4	3.9
Cycle Q Clear(g_c), s	6.1	1.7	9.1	2.5	15.0	4.1	17.2	39.0	5.3	2.5	13.4	3.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	277	1095	341	141	623	279	647	2325	715	137	1571	489
V/C Ratio(X)	0.76	0.09	0.48	0.62	0.86	0.27	0.91	0.90	0.19	0.61	0.52	0.17
Avail Cap(c_a), veh/h	657	1657	516	657	1150	514	657	3119	959	657	3115	970
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	32.1	35.1	48.2	40.9	36.4	40.7	25.6	16.5	48.3	29.0	25.7
Incr Delay (d2), s/veh	1.6	0.0	0.4	1.6	1.4	0.2	16.7	2.7	0.0	1.6	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.8	4.1	1.2	7.5	1.8	9.7	18.7	2.3	1.2	6.2	1.7
LnGrp Delay(d),s/veh	47.7	32.1	35.4	49.8	42.3	36.6	57.3	28.3	16.5	49.9	29.1	25.8
LnGrp LOS	D	C	D	D	D	D	E	C	B	D	C	C
Approach Vol, veh/h		477			697			2827			977	
Approach Delay, s/veh		40.1			42.6			33.8			30.6	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	54.1	9.7	28.8	24.7	39.0	13.7	24.8
Change Period (Y+Rc), s	5.5	* 7.4	5.5	* 6.8	5.5	* 7.4	5.5	6.8
Max Green Setting (Gmax), s	19.5	* 63	19.5	* 33	19.5	* 63	19.5	33.2
Max Q Clear Time (g_c+I1), s	4.5	41.0	4.5	11.1	19.2	15.4	8.1	17.0
Green Ext Time (p_c), s	0.0	5.7	0.0	0.2	0.0	1.7	0.1	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	35.0
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	468	196	478	749	23	239	103	464	6	74	22
Future Volume (veh/h)	14	468	196	478	749	23	239	103	464	6	74	22
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	17	571	0	493	772	24	251	408	398	8	92	28
Adj No. of Lanes	1	2	1	2	2	0	1	1	1	0	2	0
Peak Hour Factor	0.82	0.82	0.82	0.97	0.97	0.97	0.77	0.77	0.77	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	21	792	354	568	1316	41	448	470	654	22	257	79
Arrive On Green	0.01	0.22	0.00	0.17	0.38	0.38	0.25	0.25	0.25	0.10	0.10	0.10
Sat Flow, veh/h	1774	3539	1583	3442	3501	109	1774	1863	1557	218	2524	776
Grp Volume(v), veh/h	17	571	0	493	390	406	251	408	398	68	0	60
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1841	1774	1863	1557	1852	0	1667
Q Serve(g_s), s	0.8	12.0	0.0	11.2	14.1	14.2	9.9	16.8	16.0	2.7	0.0	2.7
Cycle Q Clear(g_c), s	0.8	12.0	0.0	11.2	14.1	14.2	9.9	16.8	16.0	2.7	0.0	2.7
Prop In Lane	1.00		1.00	1.00		0.06	1.00		1.00	0.12		0.47
Lane Grp Cap(c), veh/h	21	792	354	568	665	692	448	470	654	188	0	169
V/C Ratio(X)	0.81	0.72	0.00	0.87	0.59	0.59	0.56	0.87	0.61	0.36	0.00	0.35
Avail Cap(c_a), veh/h	436	2884	1290	850	1444	1502	770	809	938	797	0	718
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.5	28.8	0.0	32.6	20.0	20.0	26.1	28.7	18.3	33.6	0.0	33.5
Incr Delay (d2), s/veh	23.3	0.5	0.0	4.4	0.3	0.3	0.4	2.1	0.3	0.4	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	5.9	0.0	5.6	6.9	7.2	4.9	8.9	6.9	1.4	0.0	1.3
LnGrp Delay(d),s/veh	62.9	29.3	0.0	37.0	20.3	20.3	26.5	30.8	18.6	34.0	0.0	34.0
LnGrp LOS	E	C		D	C	C	C	C	B	C		C
Approach Vol, veh/h		588			1289			1057			128	
Approach Delay, s/veh		30.2			26.7			25.2			34.0	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.2	34.8		13.6	18.4	22.6		25.4
Change Period (Y+Rc), s	* 5.3	* 4.7		5.5	* 5.2	* 4.7		5.2
Max Green Setting (Gmax), s	* 20	* 65		34.5	* 20	* 65		34.8
Max Q Clear Time (g_c+I1), s	2.8	16.2		4.7	13.2	14.0		18.8
Green Ext Time (p_c), s	0.0	1.1		0.1	0.0	1.1		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	27.2
HCM 2010 LOS	C

Notes

Movement	EBL2	EBL	EBT	EBR	WBR	WBR2	NBT	NBR	NBR2	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	345	1	913	1114	132	32	1194	457	11	1589	202
Future Volume (vph)	345	1	913	1114	132	32	1194	457	11	1589	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8	6.8	6.8	4.6		4.6			4.6	4.0
Lane Util. Factor		0.91	0.86	0.91	0.88		0.86			0.95	1.00
Frpb, ped/bikes		1.00	0.99	0.98	1.00		0.99			1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt		1.00	0.95	0.85	0.85		0.96			1.00	0.85
Flt Protected		0.95	1.00	1.00	1.00		1.00			1.00	1.00
Satd. Flow (prot)		1610	3021	1417	2787		6098			3539	1545
Flt Permitted		0.95	1.00	1.00	1.00		1.00			1.00	1.00
Satd. Flow (perm)		1610	3021	1417	2787		6098			3539	1545
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.93	0.93	0.93	0.85	0.85
Adj. Flow (vph)	388	1	1026	1252	148	36	1284	491	12	1869	238
RTOR Reduction (vph)	0	0	5	9	16	0	0	0	0	0	0
Lane Group Flow (vph)	0	389	1559	705	168	0	1787	0	0	1869	238
Confl. Peds. (#/hr)	6	6		6	3	3		3	3		6
Confl. Bikes (#/hr)								2	2		3
Turn Type	Split	Split	NA	Perm	Prot		NA			NA	Free
Protected Phases	4	4	4		2!		6!			2	
Permitted Phases				4	2						Free
Actuated Green, G (s)		48.2	48.2	48.2	65.4		65.4			65.4	125.0
Effective Green, g (s)		48.2	48.2	48.2	65.4		65.4			65.4	125.0
Actuated g/C Ratio		0.39	0.39	0.39	0.52		0.52			0.52	1.00
Clearance Time (s)		6.8	6.8	6.8	4.6		4.6			4.6	
Vehicle Extension (s)		1.0	1.0	1.0	1.0		1.0			1.0	
Lane Grp Cap (vph)		620	1164	546	1458		3190			1851	1545
v/s Ratio Prot		0.24	c0.52		0.06		0.29			c0.53	
v/s Ratio Perm				0.50							0.15
v/c Ratio		0.63	1.34	1.29	0.12		0.56			1.01	0.15
Uniform Delay, d1		31.1	38.4	38.4	15.1		20.1			29.8	0.0
Progression Factor		1.00	1.00	1.00	1.00		1.00			1.21	1.00
Incremental Delay, d2		1.4	158.6	144.6	0.2		0.7			21.1	0.2
Delay (s)		32.6	197.0	183.0	15.3		20.8			57.2	0.2
Level of Service		C	F	F	B		C			E	A
Approach Delay (s)			169.3				20.8			50.8	
Approach LOS			F				C			D	

Intersection Summary			
HCM 2000 Control Delay	88.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	100.0%	ICU Level of Service	G
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations																
Traffic Volume (veh/h)	45	110	168	83	1	149	301	139	42	321	1449	111	21	224	1021	326
Future Volume (veh/h)	45	110	168	83	1	149	301	139	42	321	1449	111	21	224	1021	326
Number		3	8	18		7	4	14		1	6	16		5	2	12
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.98		1.00		0.99		1.00		0.99		1.00		0.98
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1676	1676	1676		1676	1676	1676		1676	1676	1676		1676	1676	1676
Adj Flow Rate, veh/h		118	181	89		159	320	148		349	1575	121		243	1110	354
Adj No. of Lanes		2	2	1		2	3	1		2	3	1		2	3	1
Peak Hour Factor		0.93	0.93	0.93		0.94	0.94	0.94		0.92	0.92	0.92		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2		2	2	2
Cap, veh/h		167	488	214		211	765	237		400	2223	683		295	2068	634
Arrive On Green		0.05	0.15	0.15		0.07	0.17	0.17		0.13	0.49	0.49		0.10	0.45	0.45
Sat Flow, veh/h		3097	3185	1396		3097	4577	1417		3097	4577	1406		3097	4577	1403
Grp Volume(v), veh/h		118	181	89		159	320	148		349	1575	121		243	1110	354
Grp Sat Flow(s),veh/h/ln		1549	1593	1396		1549	1526	1417		1549	1526	1406		1549	1526	1403
Q Serve(g_s), s		4.3	5.9	6.6		5.8	7.2	11.2		12.7	31.1	5.6		8.9	20.2	21.3
Cycle Q Clear(g_c), s		4.3	5.9	6.6		5.8	7.2	11.2		12.7	31.1	5.6		8.9	20.2	21.3
Prop In Lane		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h		167	488	214		211	765	237		400	2223	683		295	2068	634
V/C Ratio(X)		0.71	0.37	0.42		0.75	0.42	0.62		0.87	0.71	0.18		0.82	0.54	0.56
Avail Cap(c_a), veh/h		524	1770	776		524	1351	418		524	2559	786		524	2551	782
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		53.6	43.8	44.1		52.7	43.0	44.6		49.2	23.2	16.7		51.2	22.8	23.1
Incr Delay (d2), s/veh		2.0	1.0	2.6		2.1	1.3	8.9		10.1	1.1	0.3		2.2	0.4	1.6
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		1.9	2.7	2.7		2.6	3.1	5.0		6.0	13.2	2.2		3.9	8.6	8.5
LnGrp Delay(d),s/veh		55.6	44.7	46.7		54.8	44.2	53.5		59.3	24.3	16.9		53.4	23.3	24.7
LnGrp LOS		E	D	D		D	D	D		E	C	B		D	C	C
Approach Vol, veh/h			388				627				2045				1707	
Approach Delay, s/veh			48.5				49.1				29.9				27.9	
Approach LOS			D				D				C				C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.4	57.8	11.7	25.2	16.5	61.7	13.3	23.6
Change Period (Y+Rc), s	5.5	* 5.8	5.5	6.0	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	19.5	* 64	19.5	34.0	19.5	* 64	19.5	64.0
Max Q Clear Time (g_c+I1), s	14.7	23.3	6.3	13.2	10.9	33.1	7.8	8.6
Green Ext Time (p_c), s	0.1	21.9	0.1	5.5	0.1	22.8	0.1	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	33.2
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (veh/h)	112	13	245	34	25	39	34	273	2450	20	36	3322	79
Future Volume (veh/h)	112	13	245	34	25	39	34	273	2450	20	36	3322	79
Number	7	4	14	3	8	18		1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00		1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1900		1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	129	118	213	43	32	49		281	2526	21	39	3572	85
Adj No. of Lanes	0	1	1	1	1	0		2	3	0	1	3	1
Peak Hour Factor	0.87	0.87	0.87	0.79	0.79	0.79		0.97	0.97	0.97	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2	2
Cap, veh/h	151	138	251	119	44	68		334	3033	25	50	2603	790
Arrive On Green	0.16	0.16	0.16	0.07	0.07	0.07		0.10	0.58	0.58	0.03	0.51	0.51
Sat Flow, veh/h	948	867	1571	1774	663	1015		3442	5202	43	1774	5085	1543
Grp Volume(v), veh/h	247	0	213	43	0	81		281	1645	902	39	3572	85
Grp Sat Flow(s),veh/h/ln	1815	0	1571	1774	0	1678		1721	1695	1855	1774	1695	1543
Q Serve(g_s), s	16.9	0.0	16.8	3.0	0.0	6.0		10.2	50.1	50.3	2.8	65.2	3.6
Cycle Q Clear(g_c), s	16.9	0.0	16.8	3.0	0.0	6.0		10.2	50.1	50.3	2.8	65.2	3.6
Prop In Lane	0.52		1.00	1.00		0.60		1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	289	0	251	119	0	112		334	1977	1082	50	2603	790
V/C Ratio(X)	0.85	0.00	0.85	0.36	0.00	0.72		0.84	0.83	0.83	0.78	1.37	0.11
Avail Cap(c_a), veh/h	492	0	426	480	0	455		538	1977	1082	281	2603	790
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.1	0.0	52.1	56.8	0.0	58.3		56.6	21.5	21.6	61.5	31.1	16.1
Incr Delay (d2), s/veh	2.9	0.0	3.1	0.7	0.0	3.2		3.3	3.0	5.4	9.4	170.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	0.0	7.5	1.5	0.0	2.9		5.0	24.1	27.2	1.5	71.4	1.5
LnGrp Delay(d),s/veh	55.0	0.0	55.2	57.5	0.0	61.5		59.9	24.5	27.0	70.9	201.1	16.1
LnGrp LOS	E		E	E		E		E	C	C	E	F	B
Approach Vol, veh/h		460			124				2828			3696	
Approach Delay, s/veh		55.1			60.1				28.8			195.5	
Approach LOS		E			E				C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.5	70.1		25.8	8.4	79.2		14.0
Change Period (Y+Rc), s	* 5.1	* 4.9		5.5	* 4.8	* 4.9		5.5
Max Green Setting (Gmax), s	* 26	* 65		34.5	* 20	* 65		34.5
Max Q Clear Time (g_c+I1), s	12.2	67.2		18.9	4.8	52.3		8.0
Green Ext Time (p_c), s	0.1	0.0		0.6	0.0	6.0		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	117.7
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	168	428	198	38	279	86	11	106	750	24	202	1711
Future Volume (veh/h)	168	428	198	38	279	86	11	106	750	24	202	1711
Number	3	8	18	7	4	14		1	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00		1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	179	455	211	41	303	93		115	815	26	213	1801
Adj No. of Lanes	1	1	1	1	1	1		1	2	0	1	2
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92		0.92	0.92	0.92	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2
Cap, veh/h	203	491	417	53	333	283		138	1365	44	237	1577
Arrive On Green	0.11	0.26	0.26	0.03	0.18	0.18		0.08	0.39	0.39	0.13	0.45
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583		1774	3501	112	1774	3539
Grp Volume(v), veh/h	179	455	211	41	303	93		115	412	429	213	1801
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583		1774	1770	1843	1774	1770
Q Serve(g_s), s	14.0	33.5	15.9	3.2	22.4	7.2		9.0	26.0	26.0	16.6	62.6
Cycle Q Clear(g_c), s	14.0	33.5	15.9	3.2	22.4	7.2		9.0	26.0	26.0	16.6	62.6
Prop In Lane	1.00		1.00	1.00		1.00		1.00		0.06	1.00	
Lane Grp Cap(c), veh/h	203	491	417	53	333	283		138	690	718	237	1577
V/C Ratio(X)	0.88	0.93	0.51	0.78	0.91	0.33		0.83	0.60	0.60	0.90	1.14
Avail Cap(c_a), veh/h	309	491	417	246	432	367		246	788	821	309	1577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.3	50.5	44.0	67.7	56.6	50.4		63.9	34.1	34.1	60.0	39.0
Incr Delay (d2), s/veh	12.1	23.6	0.4	8.7	17.3	0.2		4.9	0.5	0.5	20.2	72.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	20.4	7.0	1.7	13.1	3.2		4.6	12.8	13.3	9.5	46.2
LnGrp Delay(d),s/veh	73.4	74.0	44.4	76.4	73.9	50.6		68.8	34.6	34.6	80.2	111.2
LnGrp LOS	E	E	D	E	E	D		E	C	C	F	F
Approach Vol, veh/h		845			437				956			2014
Approach Delay, s/veh		66.5			69.2				38.7			107.9
Approach LOS		E			E				D			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.4	70.0	21.6	32.5	24.2	62.2	9.7	44.4
Change Period (Y+Rc), s	5.5	7.4	5.5	7.4	5.5	7.4	5.5	* 7.4
Max Green Setting (Gmax), s	19.5	62.6	24.5	32.6	24.5	62.6	19.5	* 33
Max Q Clear Time (g_c+I1), s	11.0	64.6	16.0	24.4	18.6	28.0	5.2	35.5
Green Ext Time (p_c), s	0.1	0.0	0.1	0.7	0.1	1.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	80.1
HCM 2010 LOS	F

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	153
Future Volume (veh/h)	153
Number	12
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	0
Adj No. of Lanes	1
Peak Hour Factor	0.95
Percent Heavy Veh, %	2
Cap, veh/h	705
Arrive On Green	0.00
Sat Flow, veh/h	1583
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	1583
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	705
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	705
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	0.0
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	457	78	130	299	5	29	87	97	11	537	67
Future Volume (veh/h)	71	457	78	130	299	5	29	87	97	11	537	67
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	72	462	79	148	340	6	34	101	113	12	610	76
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.99	0.99	0.99	0.88	0.88	0.88	0.86	0.86	0.86	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	745	127	187	1068	19	40	261	292	71	556	69
Arrive On Green	0.05	0.25	0.25	0.11	0.30	0.30	0.02	0.32	0.32	0.04	0.34	0.34
Sat Flow, veh/h	1774	3027	515	1774	3559	63	1774	804	900	1774	1625	202
Grp Volume(v), veh/h	72	269	272	148	169	177	34	0	214	12	0	686
Grp Sat Flow(s),veh/h/ln	1774	1770	1772	1774	1770	1852	1774	0	1704	1774	0	1827
Q Serve(g_s), s	2.4	8.1	8.2	4.9	4.4	4.4	1.1	0.0	5.8	0.4	0.0	20.5
Cycle Q Clear(g_c), s	2.4	8.1	8.2	4.9	4.4	4.4	1.1	0.0	5.8	0.4	0.0	20.5
Prop In Lane	1.00		0.29	1.00		0.03	1.00		0.53	1.00		0.11
Lane Grp Cap(c), veh/h	91	435	436	187	531	556	40	0	553	71	0	625
V/C Ratio(X)	0.79	0.62	0.62	0.79	0.32	0.32	0.84	0.00	0.39	0.17	0.00	1.10
Avail Cap(c_a), veh/h	326	1639	1641	326	1639	1715	326	0	583	326	0	625
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.1	20.1	20.1	26.2	16.2	16.2	29.2	0.0	15.6	27.8	0.0	19.7
Incr Delay (d2), s/veh	5.5	2.0	2.1	2.8	0.5	0.5	15.7	0.0	2.0	0.4	0.0	65.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.2	4.3	2.5	2.2	2.3	0.7	0.0	3.0	0.2	0.0	21.6
LnGrp Delay(d),s/veh	33.6	22.1	22.2	29.0	16.7	16.7	44.9	0.0	17.7	28.2	0.0	85.4
LnGrp LOS	C	C	C	C	B	B	D		B	C		F
Approach Vol, veh/h		613			494			248			698	
Approach Delay, s/veh		23.5			20.4			21.4			84.4	
Approach LOS		C			C			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	22.5	5.4	25.0	10.3	19.2	6.4	24.0
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.5
Max Green Setting (Gmax), s	11.0	55.5	11.0	20.5	11.0	55.5	11.0	20.5
Max Q Clear Time (g_c+I1), s	4.4	6.4	3.1	22.5	6.9	10.2	2.4	7.8
Green Ext Time (p_c), s	0.0	2.7	0.0	0.0	0.0	4.6	0.0	2.6

Intersection Summary	
HCM 2010 Ctrl Delay	43.2
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	19.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	553	0	15	315	2	4	6	1	0	158	115
Future Vol, veh/h	19	553	0	15	315	2	4	6	1	0	158	115
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	350	-	-	350	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	79	79	79	70	70	70	73	73	73
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	595	0	19	399	3	6	9	1	0	216	158

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	402	0	0	595	0	0	1261	1075	595	1079	1074	401
Stage 1	-	-	-	-	-	-	635	635	-	439	439	-
Stage 2	-	-	-	-	-	-	626	440	-	640	635	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1157	-	-	981	-	-	147	220	504	196	220	649
Stage 1	-	-	-	-	-	-	467	472	-	597	578	-
Stage 2	-	-	-	-	-	-	472	578	-	464	472	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1157	-	-	981	-	-	-	212	504	184	~ 212	649
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	212	-	184	~ 212	-
Stage 1	-	-	-	-	-	-	459	464	-	587	567	-
Stage 2	-	-	-	-	-	-	217	567	-	446	464	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.4		71.8
HCM LOS			-	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	504	1157	-	-	981	-	-	212	649
HCM Lane V/C Ratio	-	0.003	0.018	-	-	0.019	-	-	1.021	0.243
HCM Control Delay (s)	-	12.2	8.2	-	-	8.7	-	-	115.1	12.3
HCM Lane LOS	-	B	A	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	-	0	0.1	-	-	0.1	-	-	9.3	0.9

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	453	12	28	250	138	7	338	23	227	847	93
Future Volume (veh/h)	127	453	12	28	250	138	7	338	23	227	847	93
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	135	482	13	30	269	148	7	348	24	232	864	95
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.97	0.97	0.97	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	511	434	37	380	323	46	630	43	259	905	914
Arrive On Green	0.09	0.27	0.27	0.02	0.20	0.20	0.03	0.37	0.37	0.15	0.49	0.49
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	1723	119	1774	1863	1583
Grp Volume(v), veh/h	135	482	13	30	269	148	7	0	372	232	864	95
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	0	1842	1774	1863	1583
Q Serve(g_s), s	8.6	29.2	0.7	1.9	15.5	9.5	0.4	0.0	18.5	14.8	51.2	3.1
Cycle Q Clear(g_c), s	8.6	29.2	0.7	1.9	15.5	9.5	0.4	0.0	18.5	14.8	51.2	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	162	511	434	37	380	323	46	0	674	259	905	914
V/C Ratio(X)	0.83	0.94	0.03	0.80	0.71	0.46	0.15	0.00	0.55	0.89	0.95	0.10
Avail Cap(c_a), veh/h	316	537	456	316	537	456	316	0	1017	377	1035	1024
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.5	40.9	30.6	56.1	42.6	40.3	54.8	0.0	29.0	48.3	28.4	10.9
Incr Delay (d2), s/veh	4.2	24.5	0.0	13.4	0.9	0.4	0.6	0.0	0.3	13.3	16.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	18.5	0.3	1.1	8.1	4.2	0.2	0.0	9.5	8.2	30.2	1.4
LnGrp Delay(d),s/veh	55.7	65.4	30.6	69.5	43.6	40.6	55.4	0.0	29.3	61.6	44.6	11.0
LnGrp LOS	E	E	C	E	D	D	E		C	E	D	B
Approach Vol, veh/h		630			447			379			1191	
Approach Delay, s/veh		62.6			44.3			29.8			45.2	
Approach LOS		E			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	30.3	7.5	62.4	6.9	38.4	21.3	48.5
Change Period (Y+Rc), s	4.5	6.8	4.5	* 6.4	4.5	6.8	4.5	6.4
Max Green Setting (Gmax), s	20.5	33.2	20.5	* 64	20.5	33.2	24.5	63.6
Max Q Clear Time (g_c+I1), s	10.6	17.5	2.4	53.2	3.9	31.2	16.8	20.5
Green Ext Time (p_c), s	0.0	0.9	0.0	2.8	0.0	0.4	0.1	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	47.0
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (veh/h)	32	661	3	1	53	345	41	3	324	67	61	378	49
Future Volume (veh/h)	32	661	3	1	53	345	41	3	324	67	61	378	49
Number	1	6	16		5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900		1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	36	743	3		62	401	48	3	352	73	69	430	56
Adj No. of Lanes	1	1	0		1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.89	0.89	0.89		0.86	0.86	0.86	0.92	0.92	0.92	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2		2	2	2	2	2	2	2	2	2
Cap, veh/h	46	684	3		78	629	75	3	328	68	50	312	41
Arrive On Green	0.03	0.37	0.37		0.04	0.39	0.39	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1774	1854	7		1774	1629	195	13	1487	308	226	1409	184
Grp Volume(v), veh/h	36	0	746		62	0	449	428	0	0	555	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1861		1774	0	1823	1808	0	0	1819	0	0
Q Serve(g_s), s	3.5	0.0	63.6		6.0	0.0	34.6	38.0	0.0	0.0	38.2	0.0	0.0
Cycle Q Clear(g_c), s	3.5	0.0	63.6		6.0	0.0	34.6	38.0	0.0	0.0	38.2	0.0	0.0
Prop In Lane	1.00		0.00		1.00		0.11	0.01		0.17	0.12		0.10
Lane Grp Cap(c), veh/h	46	0	686		78	0	705	398	0	0	403	0	0
V/C Ratio(X)	0.78	0.00	1.09		0.80	0.00	0.64	1.07	0.00	0.00	1.38	0.00	0.00
Avail Cap(c_a), veh/h	262	0	686		211	0	705	398	0	0	403	0	0
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00		1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	83.5	0.0	54.4		81.7	0.0	43.1	67.2	0.0	0.0	67.1	0.0	0.0
Incr Delay (d2), s/veh	9.8	0.0	60.3		6.7	0.0	1.5	66.5	0.0	0.0	184.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	44.1		3.1	0.0	17.8	26.3	0.0	0.0	39.8	0.0	0.0
LnGrp Delay(d),s/veh	93.3	0.0	114.8		88.4	0.0	44.5	133.7	0.0	0.0	252.0	0.0	0.0
LnGrp LOS	F		F		F		D	F			F		
Approach Vol, veh/h		782				511			428			555	
Approach Delay, s/veh		113.8				49.9			133.7			252.0	
Approach LOS		F				D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	73.5		45.0	12.1	70.4		45.0
Change Period (Y+Rc), s	4.5	6.8		6.8	4.5	* 6.8		7.0
Max Green Setting (Gmax), s	25.5	63.2		38.2	20.5	* 64		38.0
Max Q Clear Time (g_c+I1), s	5.5	36.6		40.2	8.0	65.6		40.0
Green Ext Time (p_c), s	0.0	1.4		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	136.9
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	271	352	7	1	443	9	7	16	1	11	35	764
Future Volume (veh/h)	271	352	7	1	443	9	7	16	1	11	35	764
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	291	378	0	1	461	9	8	19	1	12	38	822
Adj No. of Lanes	1	1	1	1	1	0	0	1	0	0	1	1
Peak Hour Factor	0.93	0.93	0.93	0.96	0.96	0.96	0.85	0.85	0.85	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	319	840	714	2	494	10	18	42	2	140	443	776
Arrive On Green	0.18	0.45	0.00	0.00	0.27	0.27	0.03	0.03	0.03	0.32	0.32	0.32
Sat Flow, veh/h	1774	1863	1583	1774	1820	36	521	1239	65	442	1399	1550
Grp Volume(v), veh/h	291	378	0	1	0	470	28	0	0	50	0	822
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1856	1825	0	0	1841	0	1550
Q Serve(g_s), s	17.5	15.2	0.0	0.1	0.0	26.8	1.6	0.0	0.0	2.1	0.0	34.4
Cycle Q Clear(g_c), s	17.5	15.2	0.0	0.1	0.0	26.8	1.6	0.0	0.0	2.1	0.0	34.4
Prop In Lane	1.00		1.00	1.00		0.02	0.29		0.04	0.24		1.00
Lane Grp Cap(c), veh/h	319	840	714	2	0	504	61	0	0	583	0	776
V/C Ratio(X)	0.91	0.45	0.00	0.61	0.00	0.93	0.46	0.00	0.00	0.09	0.00	1.06
Avail Cap(c_a), veh/h	400	1101	936	319	0	1094	598	0	0	583	0	776
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.7	20.6	0.0	54.2	0.0	38.6	51.5	0.0	0.0	26.1	0.0	27.5
Incr Delay (d2), s/veh	19.5	0.1	0.0	91.3	0.0	3.5	1.9	0.0	0.0	0.0	0.0	49.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	7.8	0.0	0.1	0.0	14.2	0.9	0.0	0.0	1.1	0.0	33.6
LnGrp Delay(d),s/veh	63.2	20.7	0.0	145.5	0.0	42.1	53.4	0.0	0.0	26.1	0.0	76.8
LnGrp LOS	E	C		F		D	D			C		F
Approach Vol, veh/h		669			471			28			872	
Approach Delay, s/veh		39.2			42.3			53.4			73.9	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	25.0	35.5		40.0	5.6	54.9		8.1
Change Period (Y+Rc), s	5.5	6.0		* 5.6	5.5	* 6		4.4
Max Green Setting (Gmax), s	24.5	64.0		* 34	19.5	* 64		35.6
Max Q Clear Time (g_c+I1), s	19.5	28.8		36.4	2.1	17.2		3.6
Green Ext Time (p_c), s	0.1	0.7		0.0	0.0	0.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.9
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	305	457	139	107	104	182	849	112	246	2090	124
Future Volume (veh/h)	63	305	457	139	107	104	182	849	112	246	2090	124
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	66	318	476	170	130	127	200	933	123	270	2297	136
Adj No. of Lanes	2	3	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	0.96	0.96	0.96	0.82	0.82	0.82	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	106	1209	376	218	957	422	248	2170	667	318	2273	708
Arrive On Green	0.03	0.24	0.24	0.06	0.27	0.27	0.07	0.43	0.43	0.09	0.45	0.45
Sat Flow, veh/h	3442	5085	1583	3442	3539	1563	3442	5085	1564	3442	5085	1583
Grp Volume(v), veh/h	66	318	476	170	130	127	200	933	123	270	2297	136
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1770	1563	1721	1695	1564	1721	1695	1583
Q Serve(g_s), s	2.7	7.1	33.3	6.8	3.9	9.0	8.0	18.0	6.9	10.8	62.6	7.3
Cycle Q Clear(g_c), s	2.7	7.1	33.3	6.8	3.9	9.0	8.0	18.0	6.9	10.8	62.6	7.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	106	1209	376	218	957	422	248	2170	667	318	2273	708
V/C Ratio(X)	0.62	0.26	1.26	0.78	0.14	0.30	0.81	0.43	0.18	0.85	1.01	0.19
Avail Cap(c_a), veh/h	479	1209	376	479	957	422	479	2276	700	479	2273	708
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.1	43.4	53.4	64.6	38.7	40.6	64.0	28.2	25.0	62.6	38.7	23.4
Incr Delay (d2), s/veh	2.2	0.0	138.7	2.3	0.0	0.1	2.4	0.1	0.0	5.8	21.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	3.3	29.0	3.3	1.9	3.9	3.9	8.5	3.0	5.4	33.8	3.2
LnGrp Delay(d),s/veh	69.3	43.5	192.1	66.9	38.7	40.7	66.4	28.2	25.0	68.4	60.3	23.5
LnGrp LOS	E	D	F	E	D	D	E	C	C	E	F	C
Approach Vol, veh/h		860			427			1256			2703	
Approach Delay, s/veh		127.7			50.6			34.0			59.2	
Approach LOS		F			D			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.4	67.2	14.4	40.1	15.6	70.0	9.8	44.7
Change Period (Y+Rc), s	5.5	* 7.4	5.5	* 6.8	5.5	* 7.4	5.5	6.8
Max Green Setting (Gmax), s	19.5	* 63	19.5	* 33	19.5	* 63	19.5	33.2
Max Q Clear Time (g_c+I1), s	12.8	20.0	8.8	35.3	10.0	64.6	4.7	11.0
Green Ext Time (p_c), s	0.1	2.0	0.1	0.0	0.1	0.0	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	63.7
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	907	185	392	659	27	184	167	687	18	54	18
Future Volume (veh/h)	22	907	185	392	659	27	184	167	687	18	54	18
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.96	1.00		0.90
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	27	1093	0	431	724	30	205	477	494	24	72	24
Adj No. of Lanes	1	2	1	2	2	0	1	1	1	0	2	0
Peak Hour Factor	0.83	0.83	0.83	0.91	0.91	0.91	0.87	0.87	0.87	0.75	0.75	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	34	1171	524	476	1555	64	462	485	615	80	241	81
Arrive On Green	0.02	0.33	0.00	0.14	0.45	0.45	0.26	0.26	0.26	0.12	0.12	0.12
Sat Flow, veh/h	1774	3539	1583	3442	3459	143	1774	1863	1518	690	2085	701
Grp Volume(v), veh/h	27	1093	0	431	370	384	205	477	494	64	0	56
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1833	1774	1863	1518	1828	0	1648
Q Serve(g_s), s	2.0	39.9	0.0	16.5	19.4	19.5	12.9	34.0	34.8	4.3	0.0	4.2
Cycle Q Clear(g_c), s	2.0	39.9	0.0	16.5	19.4	19.5	12.9	34.0	34.8	4.3	0.0	4.2
Prop In Lane	1.00		1.00	1.00		0.08	1.00		1.00	0.38		0.43
Lane Grp Cap(c), veh/h	34	1171	524	476	796	824	462	485	615	212	0	191
V/C Ratio(X)	0.80	0.93	0.00	0.90	0.47	0.47	0.44	0.98	0.80	0.30	0.00	0.30
Avail Cap(c_a), veh/h	262	1731	774	510	867	898	462	485	615	472	0	426
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	65.2	43.2	0.0	56.7	25.6	25.6	41.3	49.1	35.7	54.1	0.0	54.1
Incr Delay (d2), s/veh	14.5	5.8	0.0	18.0	0.2	0.2	0.2	36.1	7.1	0.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	20.4	0.0	9.0	9.5	9.8	6.4	22.4	17.4	2.2	0.0	1.9
LnGrp Delay(d),s/veh	79.7	49.0	0.0	74.7	25.7	25.7	41.5	85.2	42.8	54.4	0.0	54.4
LnGrp LOS	E	D		E	C	C	D	F	D	D		D
Approach Vol, veh/h		1120			1185			1176			120	
Approach Delay, s/veh		49.8			43.5			59.8			54.4	
Approach LOS		D			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.8	64.7		20.9	23.7	48.9		40.0
Change Period (Y+Rc), s	* 5.3	* 4.7		5.5	* 5.2	* 4.7		5.2
Max Green Setting (Gmax), s	* 26	* 65		34.5	* 20	* 65		34.8
Max Q Clear Time (g_c+I1), s	4.0	21.5		6.3	18.5	41.9		36.8
Green Ext Time (p_c), s	0.0	1.1		0.1	0.0	2.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	51.1
HCM 2010 LOS	D

Notes

Movement	EBL2	EBL	EBT	EBR	WBR	WBR2	NBT	NBR	NBR2	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	658	1	120	735	870	119	1892	411	4	1016	135
Future Volume (vph)	658	1	120	735	870	119	1892	411	4	1016	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8	6.8	6.8	4.6		4.6			4.6	4.0
Lane Util. Factor	0.95	0.95	0.95	0.95	0.88		0.86			0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	0.98	1.00		1.00			1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.89	0.85	0.85		0.97			1.00	0.85
Flt Protected	0.95	0.95	1.00	1.00	1.00		1.00			1.00	1.00
Satd. Flow (prot)	1681	1681	1552	1471	2787		6204			3539	1540
Flt Permitted	0.95	0.95	1.00	1.00	1.00		1.00			1.00	1.00
Satd. Flow (perm)	1681	1681	1552	1471	2787		6204			3539	1540
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.86	0.86	0.88	0.88	0.88	0.92	0.92
Adj. Flow (vph)	693	1	126	774	1012	138	2150	467	5	1104	147
RTOR Reduction (vph)	0	0	42	42	13	0	0	0	0	0	0
Lane Group Flow (vph)	346	348	417	399	1137	0	2622	0	0	1104	147
Confl. Peds. (#/hr)	11	11		11	3	3		3	3		11
Confl. Bikes (#/hr)								8	8		5
Turn Type	Split	Split	NA	Perm	Prot		NA			NA	Free
Protected Phases	4	4	4		2!		6!			2	
Permitted Phases				4	2						Free
Actuated Green, G (s)	39.3	39.3	39.3	39.3	74.3		74.3			74.3	125.0
Effective Green, g (s)	39.3	39.3	39.3	39.3	74.3		74.3			74.3	125.0
Actuated g/C Ratio	0.31	0.31	0.31	0.31	0.59		0.59			0.59	1.00
Clearance Time (s)	6.8	6.8	6.8	6.8	4.6		4.6			4.6	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0		1.0			1.0	
Lane Grp Cap (vph)	528	528	487	462	1656		3687			2103	1540
v/s Ratio Prot	0.21	0.21	0.27		0.41		c0.42			0.31	
v/s Ratio Perm				c0.27							0.10
v/c Ratio	0.66	0.66	0.86	0.86	0.69		0.71			0.52	0.10
Uniform Delay, d1	37.0	37.1	40.2	40.3	17.4		17.8			14.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00			1.22	1.00
Incremental Delay, d2	2.2	2.3	13.4	14.9	2.3		1.2			0.9	0.1
Delay (s)	39.2	39.3	53.6	55.2	19.7		19.0			19.1	0.1
Level of Service	D	D	D	E	B		B			B	A
Approach Delay (s)			47.8				19.0			16.9	
Approach LOS			D				B			B	

Intersection Summary			
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	100.9%	ICU Level of Service	G
Analysis Period (min)	15		

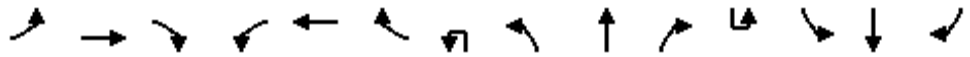
! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations																
Traffic Volume (veh/h)	35	251	565	258	11	248	297	213	71	226	1037	216	36	226	1477	132
Future Volume (veh/h)	35	251	565	258	11	248	297	213	71	226	1037	216	36	226	1477	132
Number		3	8	18		7	4	14		1	6	16		5	2	12
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.99		1.00		1.00		1.00		1.00		1.00		1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1676	1676	1676		1676	1676	1676		1676	1676	1676		1676	1676	1676
Adj Flow Rate, veh/h		295	665	304		306	367	263		248	1140	237		260	1698	152
Adj No. of Lanes		2	2	1		2	3	1		2	3	1		2	3	1
Peak Hour Factor		0.85	0.85	0.85		0.81	0.81	0.81		0.91	0.91	0.91		0.87	0.87	0.87
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2		2	2	2
Cap, veh/h		329	882	392		340	1283	399		283	1744	540		295	1762	546
Arrive On Green		0.11	0.28	0.28		0.11	0.28	0.28		0.09	0.38	0.38		0.10	0.38	0.38
Sat Flow, veh/h		3097	3185	1416		3097	4577	1422		3097	4577	1418		3097	4577	1418
Grp Volume(v), veh/h		295	665	304		306	367	263		248	1140	237		260	1698	152
Grp Sat Flow(s),veh/h/ln		1549	1593	1416		1549	1526	1422		1549	1526	1418		1549	1526	1418
Q Serve(g_s), s		15.7	31.8	32.9		16.3	10.5	27.2		13.2	34.2	20.7		13.8	60.4	12.3
Cycle Q Clear(g_c), s		15.7	31.8	32.9		16.3	10.5	27.2		13.2	34.2	20.7		13.8	60.4	12.3
Prop In Lane		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h		329	882	392		340	1283	399		283	1744	540		295	1762	546
V/C Ratio(X)		0.90	0.75	0.78		0.90	0.29	0.66		0.87	0.65	0.44		0.88	0.96	0.28
Avail Cap(c_a), veh/h		363	1224	544		363	1283	399		363	1770	548		363	1764	547
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		73.5	55.0	55.5		73.2	46.9	52.9		74.7	42.5	38.3		74.4	50.1	35.3
Incr Delay (d2), s/veh		21.2	3.0	7.5		22.5	0.4	6.9		14.7	1.2	1.1		16.5	14.0	0.6
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		7.7	14.4	13.7		8.0	4.5	11.4		6.2	14.5	8.3		6.6	27.8	4.9
LnGrp Delay(d),s/veh		94.7	58.0	62.9		95.8	47.3	59.8		89.4	43.6	39.4		90.9	64.1	35.9
LnGrp LOS		F	E	E		F	D	E		F	D	D		F	E	D
Approach Vol, veh/h			1264				936				1625				2110	
Approach Delay, s/veh			67.8				66.7				50.0				65.4	
Approach LOS			E				E				D				E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.7	69.9	23.2	52.7	21.4	69.3	23.8	52.1
Change Period (Y+Rc), s	5.5	* 5.8	5.5	6.0	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	19.5	* 64	19.5	34.0	19.5	* 64	19.5	64.0
Max Q Clear Time (g_c+I1), s	15.2	62.4	17.7	29.2	15.8	36.2	18.3	34.9
Green Ext Time (p_c), s	0.1	1.7	0.0	2.5	0.1	16.8	0.0	11.2

Intersection Summary	
HCM 2010 Ctrl Delay	61.9
HCM 2010 LOS	E

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Volume (veh/h)	186	36	180	61	23	57	33	155	2687	23	2	62	2440	96
Future Volume (veh/h)	186	36	180	61	23	57	33	155	2687	23	2	62	2440	96
Number	7	4	14	3	8	18		1	6	16		5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.96		1.00		0.98		1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1900		1863	1863	1900		1863	1863	1863
Adj Flow Rate, veh/h	224	43	217	79	30	74		167	2889	25		68	2681	105
Adj No. of Lanes	0	1	1	1	1	0		2	3	0		1	3	1
Peak Hour Factor	0.83	0.83	0.83	0.77	0.77	0.77		0.93	0.93	0.93		0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2		2	2	2
Cap, veh/h	260	50	272	181	47	117		219	2688	23		87	2542	785
Arrive On Green	0.17	0.17	0.17	0.10	0.10	0.10		0.06	0.52	0.52		0.05	0.50	0.50
Sat Flow, veh/h	1500	288	1567	1774	464	1145		3442	5199	45		1774	5085	1571
Grp Volume(v), veh/h	267	0	217	79	0	104		167	1881	1033		68	2681	105
Grp Sat Flow(s),veh/h/ln	1788	0	1567	1774	0	1609		1721	1695	1854		1774	1695	1571
Q Serve(g_s), s	18.9	0.0	17.3	5.5	0.0	8.1		6.2	67.4	67.4		4.9	65.2	4.7
Cycle Q Clear(g_c), s	18.9	0.0	17.3	5.5	0.0	8.1		6.2	67.4	67.4		4.9	65.2	4.7
Prop In Lane	0.84		1.00	1.00		0.71		1.00		0.02		1.00		1.00
Lane Grp Cap(c), veh/h	310	0	272	181	0	164		219	1753	958		87	2542	785
V/C Ratio(X)	0.86	0.00	0.80	0.44	0.00	0.63		0.76	1.07	1.08		0.79	1.05	0.13
Avail Cap(c_a), veh/h	473	0	415	469	0	426		525	1753	958		275	2542	785
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh	52.4	0.0	51.7	55.0	0.0	56.2		60.1	31.5	31.5		61.3	32.6	17.5
Incr Delay (d2), s/veh	6.5	0.0	3.1	0.6	0.0	1.5		2.1	44.1	52.5		5.7	34.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.9	0.0	7.8	2.7	0.0	3.7		3.0	42.1	48.3		2.6	38.4	2.0
LnGrp Delay(d),s/veh	58.8	0.0	54.8	55.7	0.0	57.7		62.2	75.6	84.0		67.1	66.9	17.5
LnGrp LOS	E		D	E		E		E	F	F		E	F	B
Approach Vol, veh/h		484			183				3081				2854	
Approach Delay, s/veh		57.0			56.8				77.7				65.1	
Approach LOS		E			E				E				E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.4	70.1		28.1	11.2	72.3		18.8
Change Period (Y+Rc), s	* 5.1	* 4.9		5.5	* 4.8	* 4.9		5.5
Max Green Setting (Gmax), s	* 20	* 65		34.5	* 20	* 65		34.5
Max Q Clear Time (g_c+I1), s	19.2	67.2		20.9	6.9	69.4		10.1
Green Ext Time (p_c), s	0.1	0.0		0.6	0.0	0.0		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	70.2
HCM 2010 LOS	E

Notes

Kimley»Horn

Appendix B

Analysis Worksheets for Cumulative (2040) plus Proposed Project Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	512	230	160	656	90	190	2720	90	20	980	70
Future Volume (veh/h)	160	512	230	160	656	90	190	2720	90	20	980	70
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	174	557	250	174	713	98	207	2957	98	22	1065	0
Adj No. of Lanes	1	1	1	1	1	1	1	3	0	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	530	450	126	530	450	229	2296	75	27	1731	539
Arrive On Green	0.07	0.28	0.28	0.07	0.28	0.28	0.13	0.45	0.45	0.02	0.34	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5054	165	1774	5085	1583
Grp Volume(v), veh/h	174	557	250	174	713	98	207	1972	1083	22	1065	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1829	1774	1695	1583
Q Serve(g_s), s	10.5	42.0	19.8	10.5	42.0	7.0	17.0	67.1	67.1	1.8	25.8	0.0
Cycle Q Clear(g_c), s	10.5	42.0	19.8	10.5	42.0	7.0	17.0	67.1	67.1	1.8	25.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	126	530	450	126	530	450	229	1540	831	27	1731	539
V/C Ratio(X)	1.38	1.05	0.56	1.38	1.35	0.22	0.90	1.28	1.30	0.81	0.62	0.00
Avail Cap(c_a), veh/h	126	530	450	126	530	450	287	1540	831	60	1731	539
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	68.6	52.8	44.9	68.6	52.8	40.3	63.4	40.3	40.3	72.5	40.6	0.0
Incr Delay (d2), s/veh	212.4	53.3	0.9	212.4	167.9	0.1	23.1	131.1	145.2	18.1	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.6	29.3	8.8	12.6	46.2	3.1	9.8	59.3	67.2	1.0	12.1	0.0
LnGrp Delay(d),s/veh	281.0	106.1	45.8	281.0	220.7	40.4	86.5	171.4	185.5	90.6	41.2	0.0
LnGrp LOS	F	F	D	F	F	D	F	F	F	F	D	
Approach Vol, veh/h		981			985			3262			1087	
Approach Delay, s/veh		121.8			213.4			170.7			42.2	
Approach LOS		F			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.6	57.7	16.0	49.4	7.8	74.5	16.0	49.4
Change Period (Y+Rc), s	5.5	7.4	5.5	7.4	5.5	7.4	5.5	* 7.4
Max Green Setting (Gmax), s	23.9	48.2	10.5	41.6	5.0	67.1	10.5	* 42
Max Q Clear Time (g_c+I1), s	19.0	27.8	12.5	44.0	3.8	69.1	12.5	44.0
Green Ext Time (p_c), s	0.1	5.6	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	147.6
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	294	360	30	150	600	370	10	1172	40	160	606	202
Future Volume (veh/h)	294	360	30	150	600	370	10	1172	40	160	606	202
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	320	391	33	163	652	402	11	1274	43	174	659	220
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	232	606	515	186	557	473	38	1068	478	197	1386	827
Arrive On Green	0.13	0.33	0.33	0.10	0.30	0.30	0.02	0.30	0.30	0.11	0.39	0.39
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	320	391	33	163	652	402	11	1274	43	174	659	220
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	18.5	25.3	2.0	12.8	42.2	33.7	0.9	42.6	2.8	13.6	19.7	10.9
Cycle Q Clear(g_c), s	18.5	25.3	2.0	12.8	42.2	33.7	0.9	42.6	2.8	13.6	19.7	10.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	232	606	515	186	557	473	38	1068	478	197	1386	827
V/C Ratio(X)	1.38	0.65	0.06	0.88	1.17	0.85	0.29	1.19	0.09	0.88	0.48	0.27
Avail Cap(c_a), veh/h	232	606	515	225	557	473	239	1068	478	308	1386	827
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.3	40.7	32.8	62.3	49.5	46.5	68.0	49.3	35.4	61.8	32.1	18.7
Incr Delay (d2), s/veh	194.2	1.9	0.0	23.9	94.9	13.0	1.6	96.3	0.0	11.3	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.6	13.3	0.9	7.5	36.3	16.4	0.4	35.0	1.2	7.3	9.6	4.7
LnGrp Delay(d),s/veh	255.5	42.5	32.8	86.2	144.4	59.5	69.6	145.6	35.4	73.2	32.2	18.7
LnGrp LOS	F	D	C	F	F	E	E	F	D	E	C	B
Approach Vol, veh/h		744			1217			1328			1053	
Approach Delay, s/veh		133.7			108.6			141.4			36.2	
Approach LOS		F			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	49.0	7.5	61.7	19.3	52.7	20.2	49.0
Change Period (Y+Rc), s	4.5	6.8	4.5	* 6.4	4.5	6.8	4.5	6.4
Max Green Setting (Gmax), s	18.5	42.2	19.0	* 49	17.9	42.8	24.5	42.6
Max Q Clear Time (g_c+I1), s	20.5	44.2	2.9	21.7	14.8	27.3	15.6	44.6
Green Ext Time (p_c), s	0.0	0.0	0.0	2.8	0.0	1.1	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	105.3
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	330	0	60	740	70	10	579	40	40	744	380
Future Volume (veh/h)	220	330	0	60	740	70	10	579	40	40	744	380
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	239	359	0	65	804	76	11	629	43	43	809	413
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	212	948	0	82	730	69	13	867	59	55	641	325
Arrive On Green	0.12	0.51	0.00	0.05	0.44	0.44	0.01	0.26	0.26	0.03	0.28	0.28
Sat Flow, veh/h	1774	1863	0	1774	1676	158	1774	3362	230	1774	2274	1154
Grp Volume(v), veh/h	239	359	0	65	0	880	11	331	341	43	629	593
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1774	0	1835	1774	1770	1822	1774	1770	1659
Q Serve(g_s), s	17.5	17.2	0.0	5.3	0.0	63.7	0.9	25.0	25.0	3.5	41.2	41.2
Cycle Q Clear(g_c), s	17.5	17.2	0.0	5.3	0.0	63.7	0.9	25.0	25.0	3.5	41.2	41.2
Prop In Lane	1.00		0.00	1.00		0.09	1.00		0.13	1.00		0.70
Lane Grp Cap(c), veh/h	212	948	0	82	0	799	13	456	470	55	498	467
V/C Ratio(X)	1.13	0.38	0.00	0.79	0.00	1.10	0.84	0.72	0.73	0.78	1.26	1.27
Avail Cap(c_a), veh/h	212	948	0	147	0	799	61	478	492	79	498	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.4	21.9	0.0	69.0	0.0	41.3	72.5	49.5	49.6	70.4	52.5	52.5
Incr Delay (d2), s/veh	99.8	0.1	0.0	6.2	0.0	63.3	37.6	4.4	4.3	16.1	132.9	137.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.4	8.8	0.0	2.7	0.0	46.2	0.6	12.8	13.2	2.0	38.5	36.7
LnGrp Delay(d),s/veh	164.2	22.0	0.0	75.2	0.0	104.6	110.1	53.9	53.8	86.4	185.4	190.1
LnGrp LOS	F	C		E		F	F	D	D	F	F	F
Approach Vol, veh/h		598			945			683			1265	
Approach Delay, s/veh		78.8			102.5			54.8			184.3	
Approach LOS		E			F			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	70.5	5.6	48.2	11.3	81.2	9.1	44.7
Change Period (Y+Rc), s	4.5	6.8	4.5	* 7	4.5	* 6.8	4.5	7.0
Max Green Setting (Gmax), s	17.5	63.7	5.0	* 41	12.1	* 70	6.5	39.5
Max Q Clear Time (g_c+I1), s	19.5	65.7	2.9	43.2	7.3	19.2	5.5	27.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	1.1	0.0	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	118.7
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1030	627	10	46	748	10	10	50	22	10	10	460
Future Volume (veh/h)	1030	627	10	46	748	10	10	50	22	10	10	460
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	1120	682	0	50	813	11	11	54	24	11	11	500
Adj No. of Lanes	1	2	1	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	682	2011	900	64	786	11	14	69	31	149	149	869
Arrive On Green	0.38	0.57	0.00	0.04	0.22	0.22	0.07	0.07	0.07	0.16	0.16	0.16
Sat Flow, veh/h	1774	3539	1583	1774	3575	48	217	1068	474	909	909	1583
Grp Volume(v), veh/h	1120	682	0	50	402	422	89	0	0	22	0	500
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1854	1759	0	0	1817	0	1583
Q Serve(g_s), s	52.5	14.1	0.0	3.8	30.0	30.0	6.8	0.0	0.0	1.4	0.0	22.4
Cycle Q Clear(g_c), s	52.5	14.1	0.0	3.8	30.0	30.0	6.8	0.0	0.0	1.4	0.0	22.4
Prop In Lane	1.00		1.00	1.00		0.03	0.12		0.27	0.50		1.00
Lane Grp Cap(c), veh/h	682	2011	900	64	389	408	114	0	0	298	0	869
V/C Ratio(X)	1.64	0.34	0.00	0.78	1.03	1.03	0.78	0.00	0.00	0.07	0.00	0.58
Avail Cap(c_a), veh/h	682	2011	900	120	389	408	289	0	0	298	0	869
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.0	15.8	0.0	65.2	53.2	53.2	62.8	0.0	0.0	48.3	0.0	20.3
Incr Delay (d2), s/veh	295.1	0.0	0.0	7.3	54.8	53.8	4.2	0.0	0.0	0.0	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	31.5	6.8	0.0	2.0	20.5	21.4	3.4	0.0	0.0	0.7	0.0	12.5
LnGrp Delay(d),s/veh	337.1	15.8	0.0	72.5	108.0	107.0	67.1	0.0	0.0	48.3	0.0	20.9
LnGrp LOS	F	B		E	F	F	E			D		C
Approach Vol, veh/h		1802			874			89			522	
Approach Delay, s/veh		215.5			105.5			67.1			22.1	
Approach LOS		F			F			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	58.0	36.0		14.5	10.4	83.6		28.0
Change Period (Y+Rc), s	5.5	6.0		* 5.6	5.5	* 6		5.6
Max Green Setting (Gmax), s	52.5	30.0		* 22	9.2	* 74		22.4
Max Q Clear Time (g_c+I1), s	54.5	32.0		8.8	5.8	16.1		24.4
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	1.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	151.5
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	490	624	30	30	1290	1092	80	130	50	287	10	90
Future Volume (veh/h)	490	624	30	30	1290	1092	80	130	50	287	10	90
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	533	678	33	33	1402	1187	87	141	54	312	11	98
Adj No. of Lanes	1	2	0	2	3	1	1	1	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	383	2162	105	60	2174	668	108	161	62	248	482	216
Arrive On Green	0.22	0.63	0.63	0.02	0.43	0.43	0.06	0.13	0.13	0.07	0.14	0.14
Sat Flow, veh/h	1774	3436	167	3442	5085	1563	1774	1284	492	3442	3539	1583
Grp Volume(v), veh/h	533	349	362	33	1402	1187	87	0	195	312	11	98
Grp Sat Flow(s),veh/h/ln	1774	1770	1833	1721	1695	1563	1774	0	1776	1721	1770	1583
Q Serve(g_s), s	28.5	12.0	12.0	1.3	28.7	56.4	6.4	0.0	14.2	9.5	0.4	7.5
Cycle Q Clear(g_c), s	28.5	12.0	12.0	1.3	28.7	56.4	6.4	0.0	14.2	9.5	0.4	7.5
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.28	1.00		1.00
Lane Grp Cap(c), veh/h	383	1114	1154	60	2174	668	108	0	222	248	482	216
V/C Ratio(X)	1.39	0.31	0.31	0.55	0.64	1.78	0.80	0.00	0.88	1.26	0.02	0.45
Avail Cap(c_a), veh/h	383	1114	1154	138	2174	668	113	0	471	248	960	430
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	11.3	11.3	64.3	29.8	37.8	61.2	0.0	56.7	61.2	49.4	52.5
Incr Delay (d2), s/veh	191.2	0.1	0.1	3.0	0.5	355.6	29.6	0.0	4.3	144.9	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	34.3	5.8	6.1	0.6	13.5	90.2	4.0	0.0	7.3	9.5	0.2	3.3
LnGrp Delay(d),s/veh	242.9	11.4	11.4	67.3	30.4	393.3	90.7	0.0	61.0	206.1	49.4	53.0
LnGrp LOS	F	B	B	E	C	F	F		E	F	D	D
Approach Vol, veh/h		1244			2622			282			421	
Approach Delay, s/veh		110.6			195.1			70.2			166.4	
Approach LOS		F			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.0	61.3	13.5	23.1	7.4	87.9	15.0	21.6
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	28.5	* 56	8.4	* 36	* 5.3	* 80	9.5	* 35
Max Q Clear Time (g_c+I1), s	30.5	58.4	8.4	9.5	3.3	14.0	11.5	16.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.1	0.0	1.0	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	161.7
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	339	282	130	1376	276	1026	2280	160	56	811	170
Future Volume (veh/h)	270	339	282	130	1376	276	1026	2280	160	56	811	170
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	293	368	307	141	1496	300	1115	2478	174	61	882	185
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	227	1613	502	187	1553	484	729	2161	664	99	1230	383
Arrive On Green	0.07	0.32	0.32	0.05	0.31	0.31	0.21	0.42	0.42	0.03	0.24	0.24
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1564	3442	5085	1583
Grp Volume(v), veh/h	293	368	307	141	1496	300	1115	2478	174	61	882	185
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1564	1721	1695	1583
Q Serve(g_s), s	9.5	7.7	23.7	5.8	41.7	23.4	30.5	61.2	10.4	2.5	22.9	14.4
Cycle Q Clear(g_c), s	9.5	7.7	23.7	5.8	41.7	23.4	30.5	61.2	10.4	2.5	22.9	14.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	227	1613	502	187	1553	484	729	2161	664	99	1230	383
V/C Ratio(X)	1.29	0.23	0.61	0.75	0.96	0.62	1.53	1.15	0.26	0.62	0.72	0.48
Avail Cap(c_a), veh/h	227	1613	502	272	1561	486	729	2161	664	119	1257	391
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.3	36.2	41.7	67.2	49.2	42.9	56.8	41.4	26.8	69.2	50.1	46.9
Incr Delay (d2), s/veh	159.6	0.0	1.6	3.2	14.8	1.8	245.3	72.0	0.1	2.9	1.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	3.6	10.6	2.9	21.7	10.5	39.3	43.0	4.5	1.2	10.9	6.4
LnGrp Delay(d),s/veh	226.9	36.2	43.3	70.4	64.0	44.6	302.1	113.4	26.9	72.0	51.7	47.2
LnGrp LOS	F	D	D	E	E	D	F	F	C	E	D	D
Approach Vol, veh/h		968			1937			3767			1128	
Approach Delay, s/veh		96.2			61.5			165.2			52.1	
Approach LOS		F			E			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	68.6	13.3	52.5	36.0	42.2	15.0	50.8
Change Period (Y+Rc), s	5.5	* 7.4	5.5	* 6.8	5.5	* 7.4	5.5	6.8
Max Green Setting (Gmax), s	5.6	* 61	11.4	* 42	30.5	* 36	9.5	44.2
Max Q Clear Time (g_c+I1), s	4.5	63.2	7.8	25.7	32.5	24.9	11.5	43.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.8	0.0	1.6	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	114.5
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	630	350	400	740	60	380	166	580	60	182	70
Future Volume (veh/h)	10	630	350	400	740	60	380	166	580	60	182	70
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.99	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	11	685	0	435	804	65	335	462	444	65	198	76
Adj No. of Lanes	1	2	1	2	2	0	1	1	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	14	794	355	492	1185	96	519	545	457	94	294	117
Arrive On Green	0.01	0.22	0.00	0.14	0.36	0.36	0.29	0.29	0.29	0.14	0.14	0.14
Sat Flow, veh/h	1774	3539	1583	3442	3305	267	1774	1863	1561	654	2040	810
Grp Volume(v), veh/h	11	685	0	435	430	439	335	462	444	182	0	157
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1803	1774	1863	1561	1830	0	1674
Q Serve(g_s), s	0.7	19.6	0.0	13.0	21.7	21.7	17.3	24.6	29.6	9.9	0.0	9.3
Cycle Q Clear(g_c), s	0.7	19.6	0.0	13.0	21.7	21.7	17.3	24.6	29.6	9.9	0.0	9.3
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	0.36		0.48
Lane Grp Cap(c), veh/h	14	794	355	492	634	646	519	545	457	264	0	242
V/C Ratio(X)	0.79	0.86	0.00	0.88	0.68	0.68	0.65	0.85	0.97	0.69	0.00	0.65
Avail Cap(c_a), veh/h	72	911	408	507	644	656	519	545	457	452	0	413
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.1	39.3	0.0	44.2	28.6	28.6	32.5	35.0	36.8	42.8	0.0	42.5
Incr Delay (d2), s/veh	29.8	7.0	0.0	15.8	2.3	2.3	2.2	11.3	34.7	1.2	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	10.4	0.0	7.3	11.0	11.2	8.8	14.3	17.2	5.1	0.0	4.4
LnGrp Delay(d),s/veh	81.9	46.2	0.0	60.0	30.9	30.9	34.6	46.4	71.5	44.0	0.0	43.6
LnGrp LOS	F	D		E	C	C	C	D	E	D		D
Approach Vol, veh/h		696			1304			1241			339	
Approach Delay, s/veh		46.8			40.6			52.2			43.8	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.1	42.4		36.0	20.3	28.3		20.7
Change Period (Y+Rc), s	* 5.3	* 4.7		* 5.2	* 5.2	* 4.7		5.5
Max Green Setting (Gmax), s	* 4.3	* 38		* 31	* 16	* 27		26.0
Max Q Clear Time (g_c+I1), s	2.7	23.7		31.6	15.0	21.6		11.9
Green Ext Time (p_c), s	0.0	1.2		0.0	0.0	0.8		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	46.1
HCM 2010 LOS	D

Notes

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations															
Traffic Volume (veh/h)	10	220	750	225	20	200	840	70	20	452	1414	220	230	500	450
Future Volume (veh/h)	10	220	750	225	20	200	840	70	20	452	1414	220	230	500	450
Number		3	8	18		7	4	14		1	6	16	5	2	12
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.98		1.00		0.98		1.00		1.00	1.00		0.99
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1900		1863	1863	1863		1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h		239	815	245		217	913	76		491	1537	239	250	543	489
Adj No. of Lanes		2	3	0		2	3	1		2	3	1	2	3	0
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2	2	2	2
Cap, veh/h		276	942	281		282	1246	381		554	1808	562	316	971	447
Arrive On Green		0.08	0.24	0.24		0.08	0.24	0.24		0.16	0.36	0.36	0.09	0.29	0.29
Sat Flow, veh/h		3442	3873	1155		3442	5085	1557		3442	5085	1579	3442	3390	1561
Grp Volume(v), veh/h		239	713	347		217	913	76		491	1537	239	250	543	489
Grp Sat Flow(s),veh/h/ln		1721	1695	1638		1721	1695	1557		1721	1695	1579	1721	1695	1561
Q Serve(g_s), s		6.8	19.8	20.1		6.1	16.3	3.8		13.7	27.5	11.3	7.0	13.4	28.2
Cycle Q Clear(g_c), s		6.8	19.8	20.1		6.1	16.3	3.8		13.7	27.5	11.3	7.0	13.4	28.2
Prop In Lane		1.00		0.71		1.00		1.00		1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h		276	825	398		282	1246	381		554	1808	562	316	971	447
V/C Ratio(X)		0.87	0.86	0.87		0.77	0.73	0.20		0.89	0.85	0.43	0.79	0.56	1.09
Avail Cap(c_a), veh/h		276	985	476		290	1498	459		612	1808	562	377	971	447
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		44.8	35.7	35.8		44.3	34.2	29.5		40.4	29.3	24.1	43.8	29.9	35.1
Incr Delay (d2), s/veh		22.9	6.2	12.7		10.4	1.1	0.1		12.9	3.9	0.2	7.6	0.4	70.3
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		4.1	10.0	10.5		3.3	7.7	1.6		7.5	13.5	5.0	3.7	6.3	20.8
LnGrp Delay(d),s/veh		67.7	41.9	48.5		54.7	35.3	29.6		53.3	33.2	24.3	51.4	30.3	105.4
LnGrp LOS		E	D	D		D	D	C		D	C	C	D	C	F
Approach Vol, veh/h			1299				1206				2267			1282	
Approach Delay, s/veh			48.4				38.4				36.6			63.1	
Approach LOS			D				D				D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.3	33.8	13.4	29.9	14.5	40.6	13.6	29.8
Change Period (Y+Rc), s	5.5	* 5.6	5.5	5.8	5.5	* 5.6	5.5	5.8
Max Green Setting (Gmax), s	15.5	* 28	7.9	29.0	10.8	* 35	8.3	28.6
Max Q Clear Time (g_c+I1), s	15.7	30.2	8.8	18.3	9.0	29.5	8.1	22.1
Green Ext Time (p_c), s	0.1	0.0	0.0	1.9	0.0	2.4	0.0	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	45.1
HCM 2010 LOS	D

Notes

Movement	EBL2	EBL	EBT	EBR	WBR	WBR2	NBT	NBR	NBR2	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	450	10	910	1326	170	50	1444	710	10	1894	220
Future Volume (vph)	450	10	910	1326	170	50	1444	710	10	1894	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8	6.8	6.8	4.5		4.6			4.6	4.0
Lane Util. Factor		0.91	0.86	0.91	0.88		0.86			0.91	1.00
Frpb, ped/bikes		1.00	0.99	0.98	1.00		0.99			1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt		1.00	0.94	0.85	0.85		0.95			1.00	0.85
Flt Protected		0.95	1.00	1.00	1.00		1.00			1.00	1.00
Satd. Flow (prot)		1610	2989	1418	2787		6041			5085	1545
Flt Permitted		0.95	1.00	1.00	1.00		1.00			1.00	1.00
Satd. Flow (perm)		1610	2989	1418	2787		6041			5085	1545
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	489	11	989	1441	185	54	1570	772	11	2059	239
RTOR Reduction (vph)	0	0	1	30	72	0	1	0	0	0	0
Lane Group Flow (vph)	0	499	1666	734	167	0	2352	0	0	2059	239
Confl. Peds. (#/hr)	6	6		6	3	3		3	3		6
Confl. Bikes (#/hr)								2	2		3
Turn Type	Split	Split	NA	Perm	Prot		NA			NA	Free
Protected Phases	4	4	4		5		6			2	
Permitted Phases				4							Free
Actuated Green, G (s)		55.2	55.2	55.2	6.5		42.4			53.4	120.0
Effective Green, g (s)		55.2	55.2	55.2	6.5		42.4			53.4	120.0
Actuated g/C Ratio		0.46	0.46	0.46	0.05		0.35			0.44	1.00
Clearance Time (s)		6.8	6.8	6.8	4.5		4.6			4.6	
Vehicle Extension (s)		1.0	1.0	1.0	3.0		1.0			1.0	
Lane Grp Cap (vph)		740	1374	652	150		2134			2262	1545
v/s Ratio Prot		0.31	c0.56		0.06		c0.39			c0.40	
v/s Ratio Perm				0.52							0.15
v/c Ratio		0.67	1.21	1.13	1.11		1.39dr			0.91	0.15
Uniform Delay, d1		25.4	32.4	32.4	56.8		38.8			31.1	0.0
Progression Factor		1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		1.9	102.6	75.4	107.4		53.8			5.9	0.2
Delay (s)		27.3	135.0	107.8	164.1		92.6			37.0	0.2
Level of Service		C	F	F	F		F			D	A
Approach Delay (s)			109.5				92.6			33.1	
Approach LOS			F				F			C	

Intersection Summary			
HCM 2000 Control Delay	83.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.9
Intersection Capacity Utilization	101.5%	ICU Level of Service	G
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations															
Traffic Volume (veh/h)	50	240	340	207	250	1090	180	40	308	1590	140	20	30	922	600
Future Volume (veh/h)	50	240	340	207	250	1090	180	40	308	1590	140	20	30	922	600
Number		3	8	18	7	4	14		1	6	16		5	2	12
Initial Q (Qb), veh		0	0	0	0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.98	1.00		1.00		1.00		0.99		1.00		0.98
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1676	1676	1676	1676	1676	1676		1676	1676	1676		1676	1676	1676
Adj Flow Rate, veh/h		261	370	225	272	1185	196		335	1728	152		33	1002	652
Adj No. of Lanes		2	2	1	2	3	1		2	3	1		2	3	1
Peak Hour Factor		0.92	0.92	0.92	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2	2	2	2		2	2	2		2	2	2
Cap, veh/h		283	831	365	283	1194	370		310	1974	606		56	1600	490
Arrive On Green		0.09	0.26	0.26	0.09	0.26	0.26		0.10	0.43	0.43		0.02	0.35	0.35
Sat Flow, veh/h		3097	3185	1401	3097	4577	1420		3097	4577	1405		3097	4577	1402
Grp Volume(v), veh/h		261	370	225	272	1185	196		335	1728	152		33	1002	652
Grp Sat Flow(s),veh/h/ln		1549	1593	1401	1549	1526	1420		1549	1526	1405		1549	1526	1402
Q Serve(g_s), s		9.6	11.2	16.3	10.1	29.7	13.6		11.5	39.7	7.9		1.2	21.0	40.2
Cycle Q Clear(g_c), s		9.6	11.2	16.3	10.1	29.7	13.6		11.5	39.7	7.9		1.2	21.0	40.2
Prop In Lane		1.00		1.00	1.00		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h		283	831	365	283	1194	370		310	1974	606		56	1600	490
V/C Ratio(X)		0.92	0.45	0.62	0.96	0.99	0.53		1.08	0.88	0.25		0.58	0.63	1.33
Avail Cap(c_a), veh/h		283	831	365	283	1194	370		310	1974	606		108	1600	490
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		51.8	35.5	37.4	52.1	42.4	36.4		51.8	29.9	20.8		56.0	31.1	37.4
Incr Delay (d2), s/veh		33.3	0.8	4.4	42.7	24.3	4.1		74.6	5.1	0.4		3.5	1.1	162.1
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		5.4	5.0	6.8	6.0	15.2	5.8		8.1	17.6	3.1		0.6	9.0	37.6
LnGrp Delay(d),s/veh		85.2	36.3	41.8	94.8	66.7	40.5		126.3	34.9	21.3		59.5	32.2	199.5
LnGrp LOS		F	D	D	F	E	D		F	C	C		E	C	F
Approach Vol, veh/h			856			1653				2215				1687	
Approach Delay, s/veh			52.7			68.2				47.8				97.4	
Approach LOS			D			E				D				F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	46.0	16.0	36.0	7.6	55.4	16.0	36.0
Change Period (Y+Rc), s	5.5	* 5.8	5.5	6.0	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	11.5	* 40	10.5	30.0	4.0	* 48	10.5	30.0
Max Q Clear Time (g_c+I1), s	13.6	42.2	11.6	31.7	3.2	41.7	12.1	18.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	5.8	0.0	4.0

Intersection Summary	
HCM 2010 Ctrl Delay	66.8
HCM 2010 LOS	E

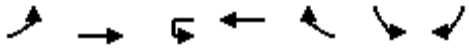
Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (veh/h)	120	10	412	30	30	40	30	466	2772	20	40	3356	40
Future Volume (veh/h)	120	10	412	30	30	40	30	466	2772	20	40	3356	40
Number	7	4	14	3	8	18		1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00		1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1900		1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	130	241	294	33	33	43		507	3013	22	43	3648	43
Adj No. of Lanes	0	1	1	1	1	0		2	3	0	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2	2
Cap, veh/h	144	267	354	114	47	62		299	2596	19	55	2238	679
Arrive On Green	0.22	0.22	0.22	0.06	0.06	0.06		0.09	0.50	0.50	0.03	0.44	0.44
Sat Flow, veh/h	641	1189	1575	1774	733	956		3442	5208	38	1774	5085	1542
Grp Volume(v), veh/h	371	0	294	33	0	76		507	1959	1076	43	3648	43
Grp Sat Flow(s),veh/h/ln	1831	0	1575	1774	0	1689		1721	1695	1856	1774	1695	1542
Q Serve(g_s), s	22.5	0.0	20.3	2.0	0.0	5.0		9.9	56.9	56.9	2.7	50.2	1.8
Cycle Q Clear(g_c), s	22.5	0.0	20.3	2.0	0.0	5.0		9.9	56.9	56.9	2.7	50.2	1.8
Prop In Lane	0.35		1.00	1.00		0.57		1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	411	0	354	114	0	109		299	1690	925	55	2238	679
V/C Ratio(X)	0.90	0.00	0.83	0.29	0.00	0.70		1.70	1.16	1.16	0.78	1.63	0.06
Avail Cap(c_a), veh/h	514	0	442	498	0	474		299	1690	925	73	2238	679
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	0.0	42.2	50.9	0.0	52.3		52.1	28.6	28.6	54.9	31.9	18.4
Incr Delay (d2), s/veh	14.8	0.0	8.6	0.5	0.0	3.0		327.9	78.6	85.4	23.2	285.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.0	0.0	9.7	1.0	0.0	2.4		18.3	45.0	51.0	1.7	82.6	0.8
LnGrp Delay(d),s/veh	57.8	0.0	50.8	51.4	0.0	55.3		380.0	107.2	114.0	78.1	317.6	18.4
LnGrp LOS	E		D	D		E		F	F	F	E	F	B
Approach Vol, veh/h		665			109				3542			3734	
Approach Delay, s/veh		54.7			54.1				148.3			311.4	
Approach LOS		D			D				F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.0	55.1		31.1	8.3	61.8		12.9
Change Period (Y+Rc), s	* 5.1	* 4.9		5.5	* 4.8	* 4.9		5.5
Max Green Setting (Gmax), s	* 9.9	* 50		32.0	* 4.7	* 56		32.0
Max Q Clear Time (g_c+I1), s	11.9	52.2		24.5	4.7	58.9		7.0
Green Ext Time (p_c), s	0.0	0.0		0.7	0.0	0.0		0.1

Intersection Summary		
HCM 2010 Ctrl Delay	215.0	
HCM 2010 LOS	F	

Notes



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	874	1234	0	1318	110	50	619
Future Volume (veh/h)	874	1234	0	1318	110	50	619
Number	1	6		2	12	3	18
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863		1863	1863	1863	1863
Adj Flow Rate, veh/h	950	1341		1433	120	54	673
Adj No. of Lanes	2	2		2	1	1	1
Peak Hour Factor	0.92	0.92		0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2		2	2	2	2
Cap, veh/h	964	2488		1313	587	310	277
Arrive On Green	0.28	0.70		0.37	0.37	0.17	0.17
Sat Flow, veh/h	3442	3632		3632	1583	1774	1583
Grp Volume(v), veh/h	950	1341		1433	120	54	673
Grp Sat Flow(s),veh/h/ln	1721	1770		1770	1583	1774	1583
Q Serve(g_s), s	27.5	18.1		37.1	5.2	2.6	17.5
Cycle Q Clear(g_c), s	27.5	18.1		37.1	5.2	2.6	17.5
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	964	2488		1313	587	310	277
V/C Ratio(X)	0.99	0.54		1.09	0.20	0.17	2.43
Avail Cap(c_a), veh/h	964	2488		1313	587	310	277
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	7.1		31.5	21.4	35.1	41.3
Incr Delay (d2), s/veh	25.4	0.1		53.7	0.1	0.1	653.9
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.5	8.8		27.8	2.3	1.3	58.0
LnGrp Delay(d),s/veh	61.2	7.2		85.1	21.5	35.2	695.1
LnGrp LOS	E	A		F	C	D	F
Approach Vol, veh/h		2291		1553		727	
Approach Delay, s/veh		29.6		80.2		646.1	
Approach LOS		C		F		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	33.2	43.8				77.0		23.0
Change Period (Y+Rc), s	* 5.2	* 6.7				* 6.7		5.5
Max Green Setting (Gmax), s	* 28	* 37				* 61		17.5
Max Q Clear Time (g_c+I1), s	29.5	39.1				20.1		19.5
Green Ext Time (p_c), s	0.0	0.0				3.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	144.8
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	50	717	240	110	604	0	10	240	1150	140	10	150
Future Volume (veh/h)	50	717	240	110	604	0	10	240	1150	140	10	150
Number	3	8	18	7	4	14		1	6	16		5
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0		0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00		1.00		0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		1863	1863	1900		1863
Adj Flow Rate, veh/h	54	779	261	120	657	0		261	1250	152		163
Adj No. of Lanes	1	1	1	1	1	1		1	3	0		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		0.92	0.92	0.92		0.92
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2		2
Cap, veh/h	69	570	484	100	603	512		183	1658	202		185
Arrive On Green	0.04	0.31	0.31	0.06	0.32	0.00		0.10	0.36	0.36		0.10
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583		1774	4583	557		1774
Grp Volume(v), veh/h	54	779	261	120	657	0		261	925	477		163
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583		1774	1695	1750		1774
Q Serve(g_s), s	4.5	46.0	20.6	8.5	48.6	0.0		15.5	36.0	36.0		13.6
Cycle Q Clear(g_c), s	4.5	46.0	20.6	8.5	48.6	0.0		15.5	36.0	36.0		13.6
Prop In Lane	1.00		1.00	1.00		1.00		1.00		0.32		1.00
Lane Grp Cap(c), veh/h	69	570	484	100	603	512		183	1226	633		185
V/C Ratio(X)	0.78	1.37	0.54	1.20	1.09	0.00		1.43	0.75	0.75		0.88
Avail Cap(c_a), veh/h	71	570	484	100	603	512		183	1226	633		250
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00		1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	71.6	52.2	43.4	70.9	50.9	0.0		67.4	42.1	42.1		66.4
Incr Delay (d2), s/veh	38.0	176.3	0.7	152.1	63.7	0.0		221.0	2.4	4.6		19.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
%ile BackOfQ(50%),veh/ln	3.0	51.5	9.1	8.4	35.6	0.0		18.8	17.2	18.2		7.7
LnGrp Delay(d),s/veh	109.7	228.5	44.0	223.1	114.6	0.0		288.5	44.5	46.7		85.4
LnGrp LOS	F	F	D	F	F			F	D	D		F
Approach Vol, veh/h		1094			777				1663			
Approach Delay, s/veh		178.6			131.3				83.4			
Approach LOS		F			F				F			

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	62.0	11.4	56.0	21.2	61.8	14.0	53.4
Change Period (Y+Rc), s	5.5	7.4	5.5	7.4	5.5	7.4	5.5	* 7.4
Max Green Setting (Gmax), s	15.5	54.6	6.0	48.1	21.2	48.9	8.5	* 46
Max Q Clear Time (g_c+I1), s	17.5	56.6	6.5	50.6	15.6	38.0	10.5	48.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	2.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	195.8
HCM 2010 LOS	F

Notes

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	2610	70
Future Volume (veh/h)	2610	70
Number	2	12
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	2837	0
Adj No. of Lanes	3	1
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	1846	575
Arrive On Green	0.36	0.00
Sat Flow, veh/h	5085	1583
Grp Volume(v), veh/h	2837	0
Grp Sat Flow(s),veh/h/ln	1695	1583
Q Serve(g_s), s	54.6	0.0
Cycle Q Clear(g_c), s	54.6	0.0
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1846	575
V/C Ratio(X)	1.54	0.00
Avail Cap(c_a), veh/h	1846	575
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	47.9	0.0
Incr Delay (d2), s/veh	244.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	67.2	0.0
LnGrp Delay(d),s/veh	292.2	0.0
LnGrp LOS	F	
Approach Vol, veh/h	3000	
Approach Delay, s/veh	281.0	
Approach LOS	F	
Timer		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	224	620	20	50	440	160	20	487	100	260	1174	268
Future Volume (veh/h)	224	620	20	50	440	160	20	487	100	260	1174	268
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	243	674	22	54	478	174	22	529	109	283	1276	291
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	264	713	606	69	508	432	49	832	372	307	1346	838
Arrive On Green	0.15	0.38	0.38	0.04	0.27	0.27	0.03	0.24	0.24	0.17	0.38	0.38
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	243	674	22	54	478	174	22	529	109	283	1276	291
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	17.6	45.6	1.1	3.9	32.7	11.7	1.6	17.5	7.4	20.5	45.5	13.8
Cycle Q Clear(g_c), s	17.6	45.6	1.1	3.9	32.7	11.7	1.6	17.5	7.4	20.5	45.5	13.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	264	713	606	69	508	432	49	832	372	307	1346	838
V/C Ratio(X)	0.92	0.95	0.04	0.78	0.94	0.40	0.45	0.64	0.29	0.92	0.95	0.35
Avail Cap(c_a), veh/h	264	756	643	72	555	472	259	926	414	483	1385	856
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.7	38.9	25.2	62.0	46.3	38.7	62.4	44.8	40.9	53.0	39.1	17.7
Incr Delay (d2), s/veh	34.2	19.6	0.0	36.1	22.7	0.2	2.4	0.8	0.2	12.2	13.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.2	27.3	0.5	2.6	20.1	5.1	0.8	8.7	3.2	11.1	24.6	6.0
LnGrp Delay(d),s/veh	88.9	58.5	25.2	98.1	69.0	38.9	64.8	45.6	41.1	65.3	52.4	17.8
LnGrp LOS	F	E	C	F	E	D	E	D	D	E	D	B
Approach Vol, veh/h		939			706			660			1850	
Approach Delay, s/veh		65.6			63.8			45.5			48.9	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.9	42.3	8.1	56.0	9.6	56.6	27.0	37.0
Change Period (Y+Rc), s	4.5	6.8	4.5	* 6.4	4.5	6.8	4.5	6.4
Max Green Setting (Gmax), s	19.4	38.8	19.0	* 51	5.3	52.9	35.5	34.1
Max Q Clear Time (g_c+I1), s	19.6	34.7	3.6	47.5	5.9	47.6	22.5	19.5
Green Ext Time (p_c), s	0.0	0.8	0.0	2.0	0.0	1.3	0.1	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	54.7
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	680	10	70	380	60	10	727	70	70	636	250
Future Volume (veh/h)	300	680	10	70	380	60	10	727	70	70	636	250
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	326	739	11	76	413	65	11	790	76	76	691	272
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	342	766	11	97	441	69	14	798	77	90	714	281
Arrive On Green	0.19	0.42	0.42	0.05	0.28	0.28	0.01	0.24	0.24	0.05	0.29	0.29
Sat Flow, veh/h	1774	1831	27	1774	1572	247	1774	3263	314	1774	2483	977
Grp Volume(v), veh/h	326	0	750	76	0	478	11	428	438	76	493	470
Grp Sat Flow(s),veh/h/ln	1774	0	1858	1774	0	1819	1774	1770	1807	1774	1770	1690
Q Serve(g_s), s	17.9	0.0	38.8	4.2	0.0	25.3	0.6	23.8	23.8	4.2	27.1	27.1
Cycle Q Clear(g_c), s	17.9	0.0	38.8	4.2	0.0	25.3	0.6	23.8	23.8	4.2	27.1	27.1
Prop In Lane	1.00		0.01	1.00		0.14	1.00		0.17	1.00		0.58
Lane Grp Cap(c), veh/h	342	0	777	97	0	510	14	433	442	90	509	486
V/C Ratio(X)	0.95	0.00	0.96	0.78	0.00	0.94	0.78	0.99	0.99	0.84	0.97	0.97
Avail Cap(c_a), veh/h	342	0	777	207	0	537	90	433	442	90	509	486
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.3	0.0	27.9	46.0	0.0	34.6	48.8	37.1	37.1	46.4	34.7	34.7
Incr Delay (d2), s/veh	36.0	0.0	23.8	5.0	0.0	23.1	28.7	40.3	40.0	46.4	31.6	32.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.2	0.0	24.9	2.2	0.0	15.9	0.4	16.4	16.7	3.2	17.6	16.9
LnGrp Delay(d),s/veh	75.3	0.0	51.7	51.0	0.0	57.7	77.4	77.4	77.0	92.8	66.3	67.1
LnGrp LOS	E		D	D		E	E	E	E	F	E	E
Approach Vol, veh/h		1076			554			877			1039	
Approach Delay, s/veh		58.9			56.8			77.2			68.6	
Approach LOS		E			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.5	34.4	5.3	35.3	9.9	48.0	9.5	31.1
Change Period (Y+Rc), s	4.5	6.8	4.5	* 7	4.5	* 6.8	4.5	7.0
Max Green Setting (Gmax), s	19.0	29.1	5.0	* 24	11.5	* 37	5.0	24.1
Max Q Clear Time (g_c+I1), s	19.9	27.3	2.6	29.1	6.2	40.8	6.2	25.8
Green Ext Time (p_c), s	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	65.9
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	710	10	34	682	10	10	20	47	10	50	1010
Future Volume (veh/h)	370	710	10	34	682	10	10	20	47	10	50	1010
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	402	772	0	37	741	11	11	22	51	11	54	1098
Adj No. of Lanes	1	2	1	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	431	1585	709	46	824	12	15	31	71	71	347	743
Arrive On Green	0.24	0.45	0.00	0.03	0.23	0.23	0.07	0.07	0.07	0.23	0.23	0.23
Sat Flow, veh/h	1774	3539	1583	1774	3570	53	217	434	1006	313	1535	1583
Grp Volume(v), veh/h	402	772	0	37	367	385	84	0	0	65	0	1098
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1853	1656	0	0	1847	0	1583
Q Serve(g_s), s	22.0	15.3	0.0	2.1	20.0	20.0	4.9	0.0	0.0	2.8	0.0	22.4
Cycle Q Clear(g_c), s	22.0	15.3	0.0	2.1	20.0	20.0	4.9	0.0	0.0	2.8	0.0	22.4
Prop In Lane	1.00		1.00	1.00		0.03	0.13		0.61	0.17		1.00
Lane Grp Cap(c), veh/h	431	1585	709	46	408	428	117	0	0	418	0	743
V/C Ratio(X)	0.93	0.49	0.00	0.80	0.90	0.90	0.72	0.00	0.00	0.16	0.00	1.48
Avail Cap(c_a), veh/h	922	2705	1210	125	554	580	375	0	0	418	0	743
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.7	19.3	0.0	48.0	37.0	37.0	45.1	0.0	0.0	30.7	0.0	26.3
Incr Delay (d2), s/veh	4.0	0.1	0.0	10.9	11.9	11.4	3.0	0.0	0.0	0.1	0.0	222.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.2	7.4	0.0	1.1	11.0	11.5	2.3	0.0	0.0	1.4	0.0	66.0
LnGrp Delay(d),s/veh	40.7	19.4	0.0	58.9	48.8	48.4	48.1	0.0	0.0	30.8	0.0	248.4
LnGrp LOS	D	B		E	D	D	D			C		F
Approach Vol, veh/h		1174			789			84			1163	
Approach Delay, s/veh		26.7			49.1			48.1			236.3	
Approach LOS		C			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	29.6	28.9		12.6	8.1	50.4		28.0
Change Period (Y+Rc), s	5.5	6.0		* 5.6	5.5	* 6		5.6
Max Green Setting (Gmax), s	51.5	31.0		* 22	7.0	* 76		22.4
Max Q Clear Time (g_c+I1), s	24.0	22.0		6.9	4.1	17.3		24.4
Green Ext Time (p_c), s	0.1	0.9		0.1	0.0	1.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	108.7
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	1038	160	50	790	428	20	20	30	1039	140	490
Future Volume (veh/h)	110	1038	160	50	790	428	20	20	30	1039	140	490
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	120	1128	174	54	859	465	22	22	33	1129	152	533
Adj No. of Lanes	1	2	0	2	3	1	1	1	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	147	1195	184	94	1675	515	27	34	52	1185	1346	602
Arrive On Green	0.08	0.39	0.39	0.03	0.33	0.33	0.01	0.05	0.05	0.34	0.38	0.38
Sat Flow, veh/h	1774	3076	473	3442	5085	1562	1774	674	1011	3442	3539	1583
Grp Volume(v), veh/h	120	648	654	54	859	465	22	0	55	1129	152	533
Grp Sat Flow(s),veh/h/ln	1774	1770	1779	1721	1695	1562	1774	0	1684	1721	1770	1583
Q Serve(g_s), s	7.3	38.5	38.8	1.7	14.9	31.0	1.3	0.0	3.5	34.9	3.0	34.3
Cycle Q Clear(g_c), s	7.3	38.5	38.8	1.7	14.9	31.0	1.3	0.0	3.5	34.9	3.0	34.3
Prop In Lane	1.00		0.27	1.00		1.00	1.00		0.60	1.00		1.00
Lane Grp Cap(c), veh/h	147	688	691	94	1675	515	27	0	86	1185	1346	602
V/C Ratio(X)	0.82	0.94	0.95	0.58	0.51	0.90	0.83	0.00	0.64	0.95	0.11	0.89
Avail Cap(c_a), veh/h	216	767	771	161	1809	556	99	0	540	1335	2300	1029
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	32.2	32.3	52.4	29.5	34.9	53.6	0.0	50.8	34.9	21.9	31.6
Incr Delay (d2), s/veh	8.9	17.9	18.7	2.1	0.1	16.6	20.8	0.0	2.9	13.5	0.0	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	22.1	22.5	0.8	6.9	15.7	0.8	0.0	1.7	18.8	1.5	15.3
LnGrp Delay(d),s/veh	58.2	50.1	50.9	54.5	29.6	51.5	74.4	0.0	53.7	48.4	21.9	34.1
LnGrp LOS	E	D	D	D	C	D	E		D	D	C	C
Approach Vol, veh/h		1422			1378			77			1814	
Approach Delay, s/veh		51.1			38.0			59.6			42.0	
Approach LOS		D			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	40.8	7.1	46.6	8.1	47.3	43.0	10.7
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	13.3	* 39	6.1	* 71	* 5.1	* 47	42.3	* 35
Max Q Clear Time (g_c+I1), s	9.3	33.0	3.3	36.3	3.7	40.8	36.9	5.5
Green Ext Time (p_c), s	0.0	1.4	0.0	0.5	0.0	1.6	0.6	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	43.9
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	1170	657	170	514	184	384	950	160	475	2173	210
Future Volume (veh/h)	160	1170	657	170	514	184	384	950	160	475	2173	210
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	174	1272	714	185	559	200	417	1033	174	516	2362	228
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	220	1447	451	154	1351	421	344	1702	523	558	2019	629
Arrive On Green	0.06	0.28	0.28	0.04	0.27	0.27	0.10	0.33	0.33	0.16	0.40	0.40
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1563	3442	5085	1583
Grp Volume(v), veh/h	174	1272	714	185	559	200	417	1033	174	516	2362	228
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1563	1721	1695	1583
Q Serve(g_s), s	7.2	34.6	41.3	6.5	13.2	15.4	14.5	24.6	12.1	21.4	57.6	14.7
Cycle Q Clear(g_c), s	7.2	34.6	41.3	6.5	13.2	15.4	14.5	24.6	12.1	21.4	57.6	14.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	220	1447	451	154	1351	421	344	1702	523	558	2019	629
V/C Ratio(X)	0.79	0.88	1.58	1.20	0.41	0.48	1.21	0.61	0.33	0.92	1.17	0.36
Avail Cap(c_a), veh/h	296	1447	451	154	1351	421	344	1702	523	600	2019	629
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.0	49.5	51.9	69.3	44.0	44.8	65.3	40.3	36.1	59.9	43.8	30.8
Incr Delay (d2), s/veh	7.0	6.3	273.4	136.2	0.1	0.3	119.5	0.5	0.1	18.8	82.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	17.1	52.2	6.0	6.2	6.8	12.6	11.5	5.2	11.6	42.3	6.5
LnGrp Delay(d),s/veh	74.0	55.8	325.3	205.5	44.0	45.1	184.8	40.8	36.3	78.7	126.0	31.0
LnGrp LOS	E	E	F	F	D	D	F	D	D	E	F	C
Approach Vol, veh/h		2160			944			1624			3106	
Approach Delay, s/veh		146.3			75.9			77.3			111.1	
Approach LOS		F			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	39.0	56.0	12.0	48.1	20.0	65.0	14.8	45.3
Change Period (Y+Rc), s	5.5	* 7.4	5.5	* 6.8	5.5	* 7.4	5.5	6.8
Max Green Setting (Gmax), s	25.3	* 47	6.5	* 41	14.5	* 58	12.5	35.2
Max Q Clear Time (g_c+I1), s	23.4	26.6	8.5	43.3	16.5	59.6	9.2	17.4
Green Ext Time (p_c), s	0.1	2.2	0.0	0.0	0.0	0.0	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	109.6
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	870	350	400	690	70	360	334	710	70	126	20
Future Volume (veh/h)	80	870	350	400	690	70	360	334	710	70	126	20
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.98	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	87	946	0	435	750	76	382	563	572	76	137	22
Adj No. of Lanes	1	2	1	2	2	0	1	1	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	111	1059	474	180	929	94	476	500	418	144	274	45
Arrive On Green	0.06	0.30	0.00	0.05	0.29	0.29	0.27	0.27	0.27	0.13	0.13	0.13
Sat Flow, veh/h	1774	3539	1583	3442	3230	327	1774	1863	1559	1113	2123	351
Grp Volume(v), veh/h	87	946	0	435	411	415	382	563	572	123	0	112
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1787	1774	1863	1559	1807	0	1779
Q Serve(g_s), s	4.0	21.0	0.0	4.3	17.7	17.7	16.5	22.0	22.0	5.2	0.0	4.8
Cycle Q Clear(g_c), s	4.0	21.0	0.0	4.3	17.7	17.7	16.5	22.0	22.0	5.2	0.0	4.8
Prop In Lane	1.00		1.00	1.00		0.18	1.00		1.00	0.62		0.20
Lane Grp Cap(c), veh/h	111	1059	474	180	509	514	476	500	418	233	0	229
V/C Ratio(X)	0.78	0.89	0.00	2.41	0.81	0.81	0.80	1.13	1.37	0.53	0.00	0.49
Avail Cap(c_a), veh/h	145	1170	523	180	533	538	476	500	418	573	0	564
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.9	27.5	0.0	38.9	27.1	27.1	28.0	30.0	30.0	33.4	0.0	33.2
Incr Delay (d2), s/veh	13.5	7.9	0.0	651.3	7.8	7.8	8.9	79.8	180.3	0.7	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	11.4	0.0	18.4	9.7	9.8	9.2	22.3	30.3	2.7	0.0	2.4
LnGrp Delay(d),s/veh	51.4	35.4	0.0	690.1	34.9	34.9	36.9	109.8	210.3	34.1	0.0	33.8
LnGrp LOS	D	D		F	C	C	D	F	F	C		C
Approach Vol, veh/h		1033			1261			1517			235	
Approach Delay, s/veh		36.8			261.0			129.3			33.9	
Approach LOS		D			F			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.4	28.3		27.2	9.5	29.2		16.1
Change Period (Y+Rc), s	* 5.3	* 4.7		* 5.2	* 5.2	* 4.7		5.5
Max Green Setting (Gmax), s	* 6.7	* 25		* 22	* 4.3	* 27		26.0
Max Q Clear Time (g_c+I1), s	10.0	19.7		24.0	6.3	23.0		7.2
Green Ext Time (p_c), s	0.0	0.8		0.0	0.0	1.0		0.2

Intersection Summary		
HCM 2010 Ctrl Delay	141.2	
HCM 2010 LOS	F	

Notes

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations															
Traffic Volume (veh/h)	10	440	900	533	30	320	920	220	10	238	596	170	90	1239	330
Future Volume (veh/h)	10	440	900	533	30	320	920	220	10	238	596	170	90	1239	330
Number		3	8	18		7	4	14		1	6	16	5	2	12
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.99		1.00		0.98		1.00		1.00	1.00		0.99
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1900		1863	1863	1863		1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h		478	978	579		348	1000	239		259	648	185	98	1347	359
Adj No. of Lanes		2	3	0		2	3	1		2	3	1	2	3	0
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2	2	2	2
Cap, veh/h		524	1023	471		392	1341	411		307	1944	604	143	1335	355
Arrive On Green		0.15	0.30	0.30		0.11	0.26	0.26		0.09	0.38	0.38	0.04	0.33	0.33
Sat Flow, veh/h		3442	3390	1560		3442	5085	1558		3442	5085	1580	3442	3989	1060
Grp Volume(v), veh/h		478	978	579		348	1000	239		259	648	185	98	1144	562
Grp Sat Flow(s),veh/h/ln		1721	1695	1560		1721	1695	1558		1721	1695	1580	1721	1695	1659
Q Serve(g_s), s		19.1	39.6	42.2		13.9	25.2	18.7		10.4	12.6	11.5	3.9	46.8	46.8
Cycle Q Clear(g_c), s		19.1	39.6	42.2		13.9	25.2	18.7		10.4	12.6	11.5	3.9	46.8	46.8
Prop In Lane		1.00		1.00		1.00		1.00		1.00		1.00	1.00		0.64
Lane Grp Cap(c), veh/h		524	1023	471		392	1341	411		307	1944	604	143	1135	555
V/C Ratio(X)		0.91	0.96	1.23		0.89	0.75	0.58		0.84	0.33	0.31	0.69	1.01	1.01
Avail Cap(c_a), veh/h		613	1023	471		396	1341	411		431	2015	626	219	1135	555
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		58.3	47.9	48.8		61.0	47.2	44.8		62.7	30.6	30.2	66.1	46.5	46.5
Incr Delay (d2), s/veh		15.3	18.2	120.7		20.0	2.1	1.4		7.7	0.0	0.1	2.2	28.8	41.1
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		10.2	21.1	33.8		7.7	12.0	8.2		5.3	5.9	5.0	1.9	26.3	27.6
LnGrp Delay(d),s/veh		73.6	66.1	169.5		81.0	49.2	46.2		70.4	30.6	30.3	68.2	75.2	87.6
LnGrp LOS		E	E	F		F	D	D		E	C	C	E	F	F
Approach Vol, veh/h			2035				1587				1092			1804	
Approach Delay, s/veh			97.3				55.8				40.0			78.7	
Approach LOS			F				E				D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	52.4	26.8	42.7	11.3	59.0	21.4	48.0
Change Period (Y+Rc), s	5.5	* 5.6	5.5	5.8	5.5	* 5.6	5.5	5.8
Max Green Setting (Gmax), s	12.5	* 47	24.9	33.4	8.9	* 55	16.1	42.2
Max Q Clear Time (g_c+I1), s	12.4	48.8	21.1	27.2	5.9	14.6	15.9	44.2
Green Ext Time (p_c), s	0.1	0.0	0.2	1.7	0.0	1.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	72.4
HCM 2010 LOS	E

Notes

Jaeger Ranch
19: Zinfandel Dr & US-50 EB Ramps & Gold Center Dr

Movement	EBL2	EBL	EBT	EBR	WBR	WBR2	NBT	NBR	NBR2	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	690	10	120	1136	910	140	1936	490	10	1283	170
Future Volume (vph)	690	10	120	1136	910	140	1936	490	10	1283	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8	6.8	6.8	4.5		4.6			4.6	4.0
Lane Util. Factor		0.91	0.86	0.91	0.88		0.86			0.91	1.00
Frpb, ped/bikes		1.00	0.99	0.98	1.00		1.00			1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt		1.00	0.88	0.85	0.85		0.97			1.00	0.85
Flt Protected		0.95	1.00	1.00	1.00		1.00			1.00	1.00
Satd. Flow (prot)		1610	2770	1415	2787		6180			5085	1545
Flt Permitted		0.95	1.00	1.00	1.00		1.00			1.00	1.00
Satd. Flow (perm)		1610	2770	1415	2787		6180			5085	1545
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	750	11	130	1235	989	152	2104	533	11	1395	185
RTOR Reduction (vph)	0	0	31	38	59	0	1	0	0	0	0
Lane Group Flow (vph)	0	751	727	579	1082	0	2647	0	0	1395	185
Confl. Peds. (#/hr)	6	6		6	3	3		3	3		6
Confl. Bikes (#/hr)								2	2		3
Turn Type	Split	Split	NA	Perm	Prot		NA			NA	Free
Protected Phases	4	4	4		5		6			2	
Permitted Phases				4							Free
Actuated Green, G (s)		37.2	37.2	37.2	26.5		40.4			71.4	120.0
Effective Green, g (s)		37.2	37.2	37.2	26.5		40.4			71.4	120.0
Actuated g/C Ratio		0.31	0.31	0.31	0.22		0.34			0.60	1.00
Clearance Time (s)		6.8	6.8	6.8	4.5		4.6			4.6	
Vehicle Extension (s)		1.0	1.0	1.0	3.0		1.0			1.0	
Lane Grp Cap (vph)		499	858	438	615		2080			3025	1545
v/s Ratio Prot		c0.47	0.26		c0.39		c0.43			0.27	
v/s Ratio Perm				0.41							0.12
v/c Ratio		1.51	1.31dr	1.32	1.76		1.27			0.46	0.12
Uniform Delay, d1		41.4	38.7	41.4	46.8		39.8			13.6	0.0
Progression Factor		1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		237.5	7.5	160.2	348.2		126.7			0.0	0.2
Delay (s)		278.9	46.2	201.6	395.0		166.5			13.6	0.2
Level of Service		F	D	F	F		F			B	A
Approach Delay (s)			173.5				166.5			12.0	
Approach LOS			F				F			B	

Intersection Summary			
HCM 2000 Control Delay	170.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.9
Intersection Capacity Utilization	115.4%	ICU Level of Service	H
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations																
Traffic Volume (veh/h)	40	530	1340	430	10	350	690	40	70	462	1110	340	40	220	1455	170
Future Volume (veh/h)	40	530	1340	430	10	350	690	40	70	462	1110	340	40	220	1455	170
Number		3	8	18		7	4	14		1	6	16		5	2	12
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.98		1.00		1.00		1.00		0.99		1.00		0.98
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1676	1676	1676		1676	1676	1676		1676	1676	1676		1676	1676	1676
Adj Flow Rate, veh/h		576	1457	467		380	750	43		502	1207	370		239	1582	185
Adj No. of Lanes		2	2	1		2	3	1		2	3	1		2	3	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2		2	2	2
Cap, veh/h		613	1098	484		267	1067	331		374	1472	452		279	1332	408
Arrive On Green		0.20	0.34	0.34		0.09	0.23	0.23		0.12	0.32	0.32		0.09	0.29	0.29
Sat Flow, veh/h		3097	3185	1403		3097	4577	1420		3097	4577	1404		3097	4577	1401
Grp Volume(v), veh/h		576	1457	467		380	750	43		502	1207	370		239	1582	185
Grp Sat Flow(s),veh/h/ln		1549	1593	1403		1549	1526	1420		1549	1526	1404		1549	1526	1401
Q Serve(g_s), s		26.6	50.0	47.4		12.5	21.8	3.5		17.5	35.2	35.2		11.0	42.2	15.6
Cycle Q Clear(g_c), s		26.6	50.0	47.4		12.5	21.8	3.5		17.5	35.2	35.2		11.0	42.2	15.6
Prop In Lane		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h		613	1098	484		267	1067	331		374	1472	452		279	1332	408
V/C Ratio(X)		0.94	1.33	0.97		1.42	0.70	0.13		1.34	0.82	0.82		0.86	1.19	0.45
Avail Cap(c_a), veh/h		641	1098	484		267	1067	331		374	1472	452		303	1332	408
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		57.3	47.5	46.7		66.3	51.0	44.0		63.7	45.3	45.3		65.1	51.4	42.0
Incr Delay (d2), s/veh		21.1	153.3	32.4		210.9	3.3	0.6		171.3	4.2	12.5		18.3	92.3	1.6
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		13.2	45.4	22.6		13.2	9.5	1.4		16.4	15.4	15.2		5.4	29.1	6.2
LnGrp Delay(d),s/veh		78.4	200.8	79.1		277.1	54.3	44.6		235.0	49.5	57.8		83.4	143.7	43.6
LnGrp LOS		E	F	E		F	D	D		F	D	E		F	F	D
Approach Vol, veh/h			2500				1173				2079				2006	
Approach Delay, s/veh			149.9				126.1				95.8				127.3	
Approach LOS			F				F				F				F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	48.0	34.2	39.8	18.6	52.4	18.0	56.0
Change Period (Y+Rc), s	5.5	* 5.8	5.5	6.0	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	17.5	* 42	30.0	32.5	14.2	* 46	12.5	50.0
Max Q Clear Time (g_c+I1), s	19.5	44.2	28.6	23.8	13.0	37.2	14.5	52.0
Green Ext Time (p_c), s	0.0	0.0	0.1	5.4	0.0	7.1	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	125.9
HCM 2010 LOS	F

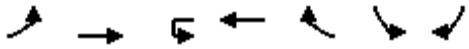
Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (veh/h)	130	40	316	60	20	60	30	364	2638	20	60	2526	120
Future Volume (veh/h)	130	40	316	60	20	60	30	364	2638	20	60	2526	120
Number	7	4	14	3	8	18		1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00		1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1900		1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	141	162	264	65	22	65		396	2867	22	65	2746	130
Adj No. of Lanes	0	1	1	1	1	0		2	3	0	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2	2
Cap, veh/h	164	188	304	132	31	91		308	2595	20	83	2306	699
Arrive On Green	0.19	0.19	0.19	0.07	0.07	0.07		0.09	0.50	0.50	0.05	0.45	0.45
Sat Flow, veh/h	847	973	1573	1774	415	1226		3442	5206	40	1774	5085	1542
Grp Volume(v), veh/h	303	0	264	65	0	87		396	1865	1024	65	2746	130
Grp Sat Flow(s),veh/h/ln	1820	0	1573	1774	0	1641		1721	1695	1856	1774	1695	1542
Q Serve(g_s), s	17.8	0.0	18.0	3.9	0.0	5.7		9.9	55.2	55.2	4.0	50.2	5.6
Cycle Q Clear(g_c), s	17.8	0.0	18.0	3.9	0.0	5.7		9.9	55.2	55.2	4.0	50.2	5.6
Prop In Lane	0.47		1.00	1.00		0.75		1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	352	0	304	132	0	122		308	1690	925	83	2306	699
V/C Ratio(X)	0.86	0.00	0.87	0.49	0.00	0.71		1.29	1.10	1.11	0.78	1.19	0.19
Avail Cap(c_a), veh/h	526	0	455	513	0	474		308	1690	925	179	2306	699
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	0.0	43.3	49.2	0.0	50.1		50.4	27.8	27.8	52.2	30.3	18.1
Incr Delay (d2), s/veh	6.4	0.0	7.9	1.1	0.0	2.9		151.4	55.9	63.5	5.8	90.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	0.0	8.5	2.0	0.0	2.7		11.1	38.7	44.3	2.1	42.6	2.4
LnGrp Delay(d),s/veh	49.6	0.0	51.2	50.3	0.0	53.0		201.8	83.6	91.3	58.0	120.8	18.1
LnGrp LOS	D		D	D		D		F	F	F	E	F	B
Approach Vol, veh/h		567			152				3285			2941	
Approach Delay, s/veh		50.3			51.8				100.3			114.8	
Approach LOS		D			D				F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.0	55.1		26.9	10.0	60.1		13.7
Change Period (Y+Rc), s	* 5.1	* 4.9		5.5	* 4.8	* 4.9		5.5
Max Green Setting (Gmax), s	* 9.9	* 50		32.0	* 11	* 49		32.0
Max Q Clear Time (g_c+I1), s	11.9	52.2		20.0	6.0	57.2		7.7
Green Ext Time (p_c), s	0.0	0.0		0.7	0.0	0.0		0.2

Intersection Summary		
HCM 2010 Ctrl Delay		101.3
HCM 2010 LOS		F

Notes



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	896	1464	0	1043	120	50	786
Future Volume (veh/h)	896	1464	0	1043	120	50	786
Number	1	6		2	12	3	18
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863		1863	1863	1863	1863
Adj Flow Rate, veh/h	974	1591		1134	130	54	854
Adj No. of Lanes	2	2		2	1	1	1
Peak Hour Factor	0.92	0.92		0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2		2	2	2	2
Cap, veh/h	1036	2314		1041	466	370	330
Arrive On Green	0.30	0.65		0.29	0.29	0.21	0.21
Sat Flow, veh/h	3442	3632		3632	1583	1774	1583
Grp Volume(v), veh/h	974	1591		1134	130	54	854
Grp Sat Flow(s),veh/h/ln	1721	1770		1770	1583	1774	1583
Q Serve(g_s), s	24.5	25.1		26.1	5.6	2.2	18.5
Cycle Q Clear(g_c), s	24.5	25.1		26.1	5.6	2.2	18.5
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1036	2314		1041	466	370	330
V/C Ratio(X)	0.94	0.69		1.09	0.28	0.15	2.59
Avail Cap(c_a), veh/h	1086	2314		1041	466	370	330
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.2	9.7		31.3	24.1	28.6	35.1
Incr Delay (d2), s/veh	14.4	0.7		55.3	0.1	0.1	722.4
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.7	12.2		20.6	2.5	1.1	74.4
LnGrp Delay(d),s/veh	44.6	10.4		86.6	24.2	28.7	757.5
LnGrp LOS	D	B		F	C	C	F
Approach Vol, veh/h		2565		1264		908	
Approach Delay, s/veh		23.4		80.2		714.2	
Approach LOS		C		F		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	31.9	32.8				64.7		24.0
Change Period (Y+Rc), s	* 5.2	* 6.7				* 6.7		5.5
Max Green Setting (Gmax), s	* 28	* 26				* 50		18.5
Max Q Clear Time (g_c+I1), s	26.5	28.1				27.1		20.5
Green Ext Time (p_c), s	0.2	0.0				3.8		0.0

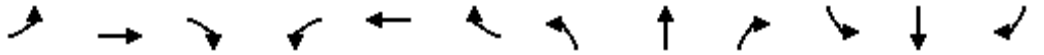
Intersection Summary	
HCM 2010 Ctrl Delay	171.0
HCM 2010 LOS	F

Notes

Kimley»Horn

Appendix C

Analysis Worksheets for Existing (2017) plus Proposed Project Mitigated Conditions



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	325	4	5	461	1	9	142	31	0	2	12
Future Volume (veh/h)	59	325	4	5	461	1	9	142	31	0	2	12
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	65	357	4	5	501	1	13	203	44	0	3	17
Adj No. of Lanes	1	1	0	1	1	0	0	1	1	0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.92	0.92	0.92	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	105	684	8	12	594	1	18	286	260	0	185	157
Arrive On Green	0.06	0.37	0.37	0.01	0.32	0.32	0.16	0.16	0.16	0.00	0.10	0.10
Sat Flow, veh/h	1774	1839	21	1774	1858	4	112	1745	1583	0	1863	1583
Grp Volume(v), veh/h	65	0	361	5	0	502	216	0	44	0	3	17
Grp Sat Flow(s),veh/h/ln	1774	0	1859	1774	0	1862	1857	0	1583	0	1863	1583
Q Serve(g_s), s	1.8	0.0	7.6	0.1	0.0	12.6	5.5	0.0	1.2	0.0	0.1	0.5
Cycle Q Clear(g_c), s	1.8	0.0	7.6	0.1	0.0	12.6	5.5	0.0	1.2	0.0	0.1	0.5
Prop In Lane	1.00		0.01	1.00		0.00	0.06		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	105	0	692	12	0	595	305	0	260	0	185	157
V/C Ratio(X)	0.62	0.00	0.52	0.42	0.00	0.84	0.71	0.00	0.17	0.00	0.02	0.11
Avail Cap(c_a), veh/h	176	0	776	176	0	777	664	0	567	0	666	567
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	23.1	0.0	12.3	24.9	0.0	15.9	19.9	0.0	18.1	0.0	20.4	20.6
Incr Delay (d2), s/veh	5.8	0.0	0.6	21.9	0.0	6.6	3.0	0.0	0.3	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	3.9	0.1	0.0	7.5	3.1	0.0	0.5	0.0	0.0	0.2
LnGrp Delay(d),s/veh	28.9	0.0	12.9	46.7	0.0	22.6	22.9	0.0	18.4	0.0	20.5	20.9
LnGrp LOS	C		B	D		C	C		B		C	C
Approach Vol, veh/h		426			507			260			20	
Approach Delay, s/veh		15.4			22.8			22.2			20.9	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.8	23.2		12.8	7.5	20.6		9.5
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.0	21.0		18.0	5.0	21.0		18.0
Max Q Clear Time (g_c+I1), s	2.1	9.6		7.5	3.8	14.6		2.5
Green Ext Time (p_c), s	0.0	1.4		0.9	0.0	1.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	20.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	695	403	8	0	320	8	7	33	5	3	9	351
Future Volume (veh/h)	695	403	8	0	320	8	7	33	5	3	9	351
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	709	411	0	0	438	11	7	34	5	0	0	430
Adj No. of Lanes	1	1	1	1	1	0	0	1	0	0	1	2
Peak Hour Factor	0.98	0.98	0.98	0.73	0.73	0.73	0.98	0.98	0.98	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	725	1300	1105	1	452	11	10	49	7	0	278	472
Arrive On Green	0.41	0.70	0.00	0.00	0.25	0.25	0.04	0.04	0.04	0.00	0.00	0.15
Sat Flow, veh/h	1774	1863	1583	1774	1809	45	275	1338	197	0	1863	3167
Grp Volume(v), veh/h	709	411	0	0	0	449	46	0	0	0	0	430
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1855	1810	0	0	0	1863	1583
Q Serve(g_s), s	54.4	11.8	0.0	0.0	0.0	33.1	3.5	0.0	0.0	0.0	0.0	18.5
Cycle Q Clear(g_c), s	54.4	11.8	0.0	0.0	0.0	33.1	3.5	0.0	0.0	0.0	0.0	18.5
Prop In Lane	1.00		1.00	1.00		0.02	0.15		0.11	0.00		1.00
Lane Grp Cap(c), veh/h	725	1300	1105	1	0	464	67	0	0	0	278	472
V/C Ratio(X)	0.98	0.32	0.00	0.00	0.00	0.97	0.69	0.00	0.00	0.00	0.00	0.91
Avail Cap(c_a), veh/h	726	1300	1105	51	0	464	67	0	0	0	302	514
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	40.2	8.1	0.0	0.0	0.0	51.2	65.7	0.0	0.0	0.0	0.0	57.8
Incr Delay (d2), s/veh	27.9	0.1	0.0	0.0	0.0	33.5	21.9	0.0	0.0	0.0	0.0	18.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	32.2	6.1	0.0	0.0	0.0	21.3	2.1	0.0	0.0	0.0	0.0	9.3
LnGrp Delay(d),s/veh	68.1	8.1	0.0	0.0	0.0	84.7	87.5	0.0	0.0	0.0	0.0	76.5
LnGrp LOS	E	A				F	F					E
Approach Vol, veh/h		1120			449			46			430	
Approach Delay, s/veh		46.1			84.7			87.5			76.5	
Approach LOS		D			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	61.9	40.5		26.2	0.0	102.4		9.5
Change Period (Y+Rc), s	5.5	6.0		* 5.6	5.5	* 6		4.4
Max Green Setting (Gmax), s	56.5	34.5		* 22	4.0	* 87		5.1
Max Q Clear Time (g_c+I1), s	56.4	35.1		20.5	0.0	13.8		5.5
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	0.6		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		61.9
HCM 2010 LOS		E

Notes

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (veh/h)	45	110	168	83	1	149	301	139	42	321	1449	111
Future Volume (veh/h)	45	110	168	83	1	149	301	139	42	321	1449	111
Number		3	8	18		7	4	14		1	6	16
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.98		1.00		0.99		1.00		0.99
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1676	1676	1676		1676	1676	1676		1676	1676	1676
Adj Flow Rate, veh/h		118	181	89		159	320	148		349	1575	121
Adj No. of Lanes		2	2	1		2	3	1		2	3	1
Peak Hour Factor		0.93	0.93	0.93		0.94	0.94	0.94		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2
Cap, veh/h		167	488	214		211	765	237		400	2223	683
Arrive On Green		0.05	0.15	0.15		0.07	0.17	0.17		0.13	0.49	0.49
Sat Flow, veh/h		3097	3185	1396		3097	4577	1417		3097	4577	1406
Grp Volume(v), veh/h		118	181	89		159	320	148		349	1575	121
Grp Sat Flow(s),veh/h/ln		1549	1593	1396		1549	1526	1417		1549	1526	1406
Q Serve(g_s), s		4.3	5.9	6.6		5.8	7.2	11.2		12.7	31.1	5.6
Cycle Q Clear(g_c), s		4.3	5.9	6.6		5.8	7.2	11.2		12.7	31.1	5.6
Prop In Lane		1.00		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h		167	488	214		211	765	237		400	2223	683
V/C Ratio(X)		0.71	0.37	0.42		0.75	0.42	0.62		0.87	0.71	0.18
Avail Cap(c_a), veh/h		524	1770	776		524	1351	418		524	2559	786
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		53.6	43.8	44.1		52.7	43.0	44.6		49.2	23.2	16.7
Incr Delay (d2), s/veh		2.0	1.0	2.6		2.1	1.3	8.9		10.1	1.1	0.3
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		1.9	2.7	2.7		2.6	3.1	5.0		6.0	13.2	2.2
LnGrp Delay(d),s/veh		55.6	44.7	46.7		54.8	44.2	53.5		59.3	24.3	16.9
LnGrp LOS		E	D	D		D	D	D		E	C	B
Approach Vol, veh/h			388				627				2045	
Approach Delay, s/veh			48.5				49.1				29.9	
Approach LOS			D				D				C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.4	57.8	11.7	25.2	16.5	61.7	13.3	23.6
Change Period (Y+Rc), s	5.5	* 5.8	5.5	6.0	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	19.5	* 64	19.5	34.0	19.5	* 64	19.5	64.0
Max Q Clear Time (g_c+I1), s	14.7	23.3	6.3	13.2	10.9	33.1	7.8	8.6
Green Ext Time (p_c), s	0.1	21.9	0.1	5.5	0.1	22.8	0.1	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	33.2
HCM 2010 LOS	C

Notes

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Volume (veh/h)	21	224	1021	326
Future Volume (veh/h)	21	224	1021	326
Number		5	2	12
Initial Q (Qb), veh		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.98
Parking Bus, Adj		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1676	1676	1676
Adj Flow Rate, veh/h		243	1110	354
Adj No. of Lanes		2	3	1
Peak Hour Factor		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2
Cap, veh/h		295	2068	634
Arrive On Green		0.10	0.45	0.45
Sat Flow, veh/h		3097	4577	1403
Grp Volume(v), veh/h		243	1110	354
Grp Sat Flow(s),veh/h/ln		1549	1526	1403
Q Serve(g_s), s		8.9	20.2	21.3
Cycle Q Clear(g_c), s		8.9	20.2	21.3
Prop In Lane		1.00		1.00
Lane Grp Cap(c), veh/h		295	2068	634
V/C Ratio(X)		0.82	0.54	0.56
Avail Cap(c_a), veh/h		524	2551	782
HCM Platoon Ratio		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00
Uniform Delay (d), s/veh		51.2	22.8	23.1
Incr Delay (d2), s/veh		2.2	0.4	1.6
Initial Q Delay(d3),s/veh		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		3.9	8.6	8.5
LnGrp Delay(d),s/veh		53.4	23.3	24.7
LnGrp LOS		D	C	C
Approach Vol, veh/h			1707	
Approach Delay, s/veh			27.9	
Approach LOS			C	
Timer				

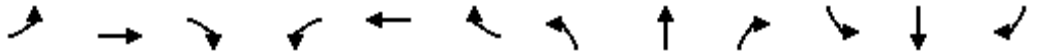
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	112	13	245	34	25	39	34	273	2450	20	36	3322
Future Volume (veh/h)	112	13	245	34	25	39	34	273	2450	20	36	3322
Number	7	4	14	3	8	18		1	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00		1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900		1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	129	15	282	43	32	49		281	2526	21	39	3572
Adj No. of Lanes	1	1	0	1	1	0		2	3	0	1	3
Peak Hour Factor	0.87	0.87	0.87	0.79	0.79	0.79		0.97	0.97	0.97	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2
Cap, veh/h	142	16	293	57	97	149		262	3445	29	49	3116
Arrive On Green	0.08	0.19	0.19	0.03	0.15	0.15		0.08	0.66	0.66	0.03	0.61
Sat Flow, veh/h	1774	80	1506	1774	664	1017		3442	5202	43	1774	5085
Grp Volume(v), veh/h	129	0	297	43	0	81		281	1645	902	39	3572
Grp Sat Flow(s),veh/h/ln	1774	0	1586	1774	0	1681		1721	1695	1855	1774	1695
Q Serve(g_s), s	17.9	0.0	46.1	6.0	0.0	10.7		18.9	78.9	79.3	5.4	152.0
Cycle Q Clear(g_c), s	17.9	0.0	46.1	6.0	0.0	10.7		18.9	78.9	79.3	5.4	152.0
Prop In Lane	1.00		0.95	1.00		0.60		1.00		0.02	1.00	
Lane Grp Cap(c), veh/h	142	0	308	57	0	246		262	2245	1229	49	3116
V/C Ratio(X)	0.91	0.00	0.96	0.75	0.00	0.33		1.07	0.73	0.73	0.79	1.15
Avail Cap(c_a), veh/h	187	0	317	62	0	246		262	2245	1229	86	3116
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	113.1	0.0	99.1	119.1	0.0	95.0		114.6	27.5	27.5	119.8	48.0
Incr Delay (d2), s/veh	30.2	0.0	40.0	32.5	0.0	0.3		75.8	1.1	2.0	9.8	70.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	0.0	23.6	3.5	0.0	5.0		11.8	37.1	41.3	2.8	91.2
LnGrp Delay(d),s/veh	143.4	0.0	139.1	151.5	0.0	95.3		190.4	28.6	29.6	129.7	118.1
LnGrp LOS	F		F	F		F		F	C	C	F	F
Approach Vol, veh/h		426			124				2828			3696
Approach Delay, s/veh		140.4			114.8				45.0			116.0
Approach LOS		F			F				D			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	156.9	13.5	53.7	11.7	169.2	25.4	41.7
Change Period (Y+Rc), s	* 5.1	* 4.9	5.5	5.5	* 4.8	* 4.9	5.5	5.5
Max Green Setting (Gmax), s	* 19	* 1.5E2	8.7	49.5	* 12	* 1.6E2	26.2	32.0
Max Q Clear Time (g_c+I1), s	20.9	154.0	8.0	48.1	7.4	81.3	19.9	12.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.1	0.0	8.4	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	89.0
HCM 2010 LOS	F

Notes

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	79
Future Volume (veh/h)	79
Number	12
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	0.98
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	85
Adj No. of Lanes	1
Peak Hour Factor	0.93
Percent Heavy Veh, %	2
Cap, veh/h	947
Arrive On Green	0.61
Sat Flow, veh/h	1545
Grp Volume(v), veh/h	85
Grp Sat Flow(s),veh/h/ln	1545
Q Serve(g_s), s	5.6
Cycle Q Clear(g_c), s	5.6
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	947
V/C Ratio(X)	0.09
Avail Cap(c_a), veh/h	947
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	19.7
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	2.4
LnGrp Delay(d),s/veh	19.7
LnGrp LOS	B
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	553	0	15	315	2	4	6	1	0	158	115
Future Volume (veh/h)	19	553	0	15	315	2	4	6	1	0	158	115
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	20	595	0	19	399	3	6	9	1	0	216	158
Adj No. of Lanes	1	1	0	1	1	0	0	1	1	0	1	1
Peak Hour Factor	0.93	0.93	0.93	0.79	0.79	0.79	0.70	0.70	0.70	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	43	730	0	42	722	5	15	22	32	0	331	282
Arrive On Green	0.02	0.39	0.00	0.02	0.39	0.39	0.02	0.02	0.02	0.00	0.18	0.18
Sat Flow, veh/h	1774	1863	0	1774	1846	14	730	1096	1583	0	1863	1583
Grp Volume(v), veh/h	20	595	0	19	0	402	15	0	1	0	216	158
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1774	0	1860	1826	0	1583	0	1863	1583
Q Serve(g_s), s	0.5	13.3	0.0	0.5	0.0	7.8	0.4	0.0	0.0	0.0	5.0	4.2
Cycle Q Clear(g_c), s	0.5	13.3	0.0	0.5	0.0	7.8	0.4	0.0	0.0	0.0	5.0	4.2
Prop In Lane	1.00		0.00	1.00		0.01	0.40		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	43	730	0	42	0	727	37	0	32	0	331	282
V/C Ratio(X)	0.46	0.82	0.00	0.46	0.00	0.55	0.41	0.00	0.03	0.00	0.65	0.56
Avail Cap(c_a), veh/h	191	1241	0	191	0	1239	706	0	612	0	721	612
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	22.4	12.6	0.0	22.4	0.0	11.0	22.5	0.0	22.4	0.0	17.8	17.5
Incr Delay (d2), s/veh	7.4	2.3	0.0	7.7	0.0	0.7	7.2	0.0	0.4	0.0	2.2	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	7.2	0.0	0.3	0.0	4.0	0.3	0.0	0.0	0.0	2.8	2.0
LnGrp Delay(d),s/veh	29.8	14.9	0.0	30.1	0.0	11.7	29.7	0.0	22.8	0.0	20.0	19.2
LnGrp LOS	C	B		C		B	C		C		B	B
Approach Vol, veh/h		615			421			16			374	
Approach Delay, s/veh		15.4			12.5			29.2			19.6	
Approach LOS		B			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.6	22.7		5.4	5.6	22.7		12.8
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.0	31.0		18.0	5.0	31.0		18.0
Max Q Clear Time (g_c+I1), s	2.5	15.3		2.4	2.5	9.8		7.0
Green Ext Time (p_c), s	0.0	3.0		0.0	0.0	2.0		1.3

Intersection Summary		
HCM 2010 Ctrl Delay		15.8
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	271	352	7	1	443	9	7	16	1	11	35	764
Future Volume (veh/h)	271	352	7	1	443	9	7	16	1	11	35	764
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	291	378	0	1	461	9	8	19	1	0	0	860
Adj No. of Lanes	1	1	1	1	1	0	0	1	0	0	1	2
Peak Hour Factor	0.93	0.93	0.93	0.96	0.96	0.96	0.85	0.85	0.85	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	312	838	712	2	500	10	20	49	3	0	464	1329
Arrive On Green	0.18	0.45	0.00	0.00	0.27	0.27	0.04	0.04	0.04	0.00	0.00	0.25
Sat Flow, veh/h	1774	1863	1583	1774	1820	36	521	1239	65	0	1863	3099
Grp Volume(v), veh/h	291	378	0	1	0	470	28	0	0	0	0	860
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1856	1825	0	0	0	1863	1549
Q Serve(g_s), s	13.3	11.5	0.0	0.0	0.0	20.3	1.2	0.0	0.0	0.0	0.0	18.2
Cycle Q Clear(g_c), s	13.3	11.5	0.0	0.0	0.0	20.3	1.2	0.0	0.0	0.0	0.0	18.2
Prop In Lane	1.00		1.00	1.00		0.02	0.29		0.04	0.00		1.00
Lane Grp Cap(c), veh/h	312	838	712	2	0	510	72	0	0	0	464	1329
V/C Ratio(X)	0.93	0.45	0.00	0.46	0.00	0.92	0.39	0.00	0.00	0.00	0.00	0.65
Avail Cap(c_a), veh/h	312	841	715	86	0	597	113	0	0	0	506	1400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	33.5	15.6	0.0	41.1	0.0	29.0	38.6	0.0	0.0	0.0	0.0	18.8
Incr Delay (d2), s/veh	33.2	0.1	0.0	48.3	0.0	17.1	1.3	0.0	0.0	0.0	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	5.9	0.0	0.1	0.0	12.7	0.6	0.0	0.0	0.0	0.0	7.8
LnGrp Delay(d),s/veh	66.6	15.8	0.0	89.4	0.0	46.2	39.9	0.0	0.0	0.0	0.0	19.6
LnGrp LOS	E	B		F		D	D					B
Approach Vol, veh/h		669			471			28			860	
Approach Delay, s/veh		37.9			46.2			39.9			19.6	
Approach LOS		D			D			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.0	28.6		26.1	5.6	43.1		7.6
Change Period (Y+Rc), s	5.5	6.0		* 5.6	5.5	* 6		4.4
Max Green Setting (Gmax), s	14.5	26.5		* 22	4.0	* 37		5.1
Max Q Clear Time (g_c+I1), s	15.3	22.3		20.2	2.0	13.5		3.2
Green Ext Time (p_c), s	0.0	0.4		0.3	0.0	0.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	32.1
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	305	457	139	107	104	182	849	112	246	2090	124
Future Volume (veh/h)	63	305	457	139	107	104	182	849	112	246	2090	124
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	66	318	476	170	130	127	200	933	123	270	2297	136
Adj No. of Lanes	2	3	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	0.96	0.96	0.96	0.82	0.82	0.82	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	106	1205	489	186	921	407	248	2185	672	319	2290	713
Arrive On Green	0.03	0.24	0.24	0.05	0.26	0.26	0.07	0.43	0.43	0.09	0.45	0.45
Sat Flow, veh/h	3442	5085	1583	3442	3539	1563	3442	5085	1564	3442	5085	1583
Grp Volume(v), veh/h	66	318	476	170	130	127	200	933	123	270	2297	136
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1770	1563	1721	1695	1564	1721	1695	1583
Q Serve(g_s), s	2.6	6.9	32.0	6.6	3.8	8.8	7.7	17.3	6.6	10.4	60.8	7.0
Cycle Q Clear(g_c), s	2.6	6.9	32.0	6.6	3.8	8.8	7.7	17.3	6.6	10.4	60.8	7.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	106	1205	489	186	921	407	248	2185	672	319	2290	713
V/C Ratio(X)	0.62	0.26	0.97	0.91	0.14	0.31	0.81	0.43	0.18	0.85	1.00	0.19
Avail Cap(c_a), veh/h	150	1205	489	186	921	407	250	2185	672	433	2290	713
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.6	41.9	46.1	63.5	38.4	40.2	61.7	26.9	23.8	60.3	37.1	22.3
Incr Delay (d2), s/veh	2.2	0.0	33.5	41.6	0.0	0.2	16.2	0.0	0.0	8.5	19.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	3.2	22.0	4.2	1.9	3.8	4.2	8.1	2.8	5.3	32.6	3.0
LnGrp Delay(d),s/veh	66.8	42.0	79.6	105.1	38.4	40.4	77.9	26.9	23.9	68.8	56.7	22.4
LnGrp LOS	E	D	E	F	D	D	E	C	C	E	F	C
Approach Vol, veh/h		860			427			1256			2703	
Approach Delay, s/veh		64.7			65.6			34.8			56.2	
Approach LOS		E			E			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	65.4	12.8	38.8	15.2	68.2	9.7	41.9
Change Period (Y+Rc), s	5.5	* 7.4	5.5	* 6.8	5.5	* 7.4	5.5	6.8
Max Green Setting (Gmax), s	17.0	* 54	7.3	* 32	9.8	* 61	5.9	33.3
Max Q Clear Time (g_c+I1), s	12.4	19.3	8.6	34.0	9.7	62.8	4.6	10.8
Green Ext Time (p_c), s	0.1	2.0	0.0	0.0	0.0	0.0	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	53.2
HCM 2010 LOS	D

Notes

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (veh/h)	35	251	565	258	11	248	297	213	71	226	1037	216
Future Volume (veh/h)	35	251	565	258	11	248	297	213	71	226	1037	216
Number		3	8	18		7	4	14		1	6	16
Initial Q (Qb), veh		0	0	0		0	0	0		0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.99		1.00		1.00		1.00		1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1676	1676	1676		1676	1676	1676		1676	1676	1676
Adj Flow Rate, veh/h		295	665	304		306	367	263		248	1140	237
Adj No. of Lanes		2	2	1		2	3	1		2	3	1
Peak Hour Factor		0.85	0.85	0.85		0.81	0.81	0.81		0.91	0.91	0.91
Percent Heavy Veh, %		2	2	2		2	2	2		2	2	2
Cap, veh/h		340	763	339		335	1089	338		295	1684	522
Arrive On Green		0.11	0.24	0.24		0.11	0.24	0.24		0.10	0.37	0.37
Sat Flow, veh/h		3097	3185	1414		3097	4577	1421		3097	4577	1418
Grp Volume(v), veh/h		295	665	304		306	367	263		248	1140	237
Grp Sat Flow(s),veh/h/ln		1549	1593	1414		1549	1526	1421		1549	1526	1418
Q Serve(g_s), s		11.5	24.7	25.6		12.0	8.2	21.3		9.7	25.8	15.6
Cycle Q Clear(g_c), s		11.5	24.7	25.6		12.0	8.2	21.3		9.7	25.8	15.6
Prop In Lane		1.00		1.00		1.00		1.00		1.00		1.00
Lane Grp Cap(c), veh/h		340	763	339		335	1089	338		295	1684	522
V/C Ratio(X)		0.87	0.87	0.90		0.91	0.34	0.78		0.84	0.68	0.45
Avail Cap(c_a), veh/h		340	781	347		335	1115	346		325	1684	522
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Uniform Delay (d), s/veh		53.9	45.0	45.3		54.3	38.9	43.9		54.8	32.8	29.5
Incr Delay (d2), s/veh		19.9	11.2	25.7		28.1	0.6	14.3		15.1	1.4	1.3
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		5.9	12.1	12.4		6.4	3.5	9.7		4.8	11.1	6.3
LnGrp Delay(d),s/veh		73.8	56.1	71.0		82.4	39.5	58.1		69.9	34.2	30.8
LnGrp LOS		E	E	E		F	D	E		E	C	C
Approach Vol, veh/h			1264				936				1625	
Approach Delay, s/veh			63.8				58.8				39.1	
Approach LOS			E				E				D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.2	51.6	19.0	35.3	17.7	51.1	18.8	35.5
Change Period (Y+Rc), s	5.5	* 5.8	5.5	6.0	5.5	* 5.8	5.5	6.0
Max Green Setting (Gmax), s	12.9	* 46	13.5	30.0	15.4	* 44	13.3	30.2
Max Q Clear Time (g_c+I1), s	11.7	47.6	13.5	23.3	12.2	27.8	14.0	27.6
Green Ext Time (p_c), s	0.0	0.0	0.0	3.4	0.1	11.1	0.0	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	54.3
HCM 2010 LOS	D

Notes

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Volume (veh/h)	36	226	1477	132
Future Volume (veh/h)	36	226	1477	132
Number		5	2	12
Initial Q (Qb), veh		0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00
Parking Bus, Adj		1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1676	1676	1676
Adj Flow Rate, veh/h		260	1698	152
Adj No. of Lanes		2	3	1
Peak Hour Factor		0.87	0.87	0.87
Percent Heavy Veh, %		2	2	2
Cap, veh/h		308	1703	528
Arrive On Green		0.10	0.37	0.37
Sat Flow, veh/h		3097	4577	1418
Grp Volume(v), veh/h		260	1698	152
Grp Sat Flow(s),veh/h/ln		1549	1526	1418
Q Serve(g_s), s		10.2	45.6	9.3
Cycle Q Clear(g_c), s		10.2	45.6	9.3
Prop In Lane		1.00		1.00
Lane Grp Cap(c), veh/h		308	1703	528
V/C Ratio(X)		0.85	1.00	0.29
Avail Cap(c_a), veh/h		387	1703	528
HCM Platoon Ratio		1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00
Uniform Delay (d), s/veh		54.5	38.6	27.2
Incr Delay (d2), s/veh		10.9	21.2	0.6
Initial Q Delay(d3),s/veh		0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		4.8	22.5	3.7
LnGrp Delay(d),s/veh		65.4	59.8	27.8
LnGrp LOS		E	E	C
Approach Vol, veh/h			2110	
Approach Delay, s/veh			58.2	
Approach LOS			E	
Timer				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	186	36	180	61	23	57	33	155	2687	23	2	62
Future Volume (veh/h)	186	36	180	61	23	57	33	155	2687	23	2	62
Number	7	4	14	3	8	18		1	6	16		5
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0		0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97		1.00		0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900		1863	1863	1900		1863
Adj Flow Rate, veh/h	224	43	217	79	30	74		167	2889	25		68
Adj No. of Lanes	1	1	0	1	1	0		2	3	0		1
Peak Hour Factor	0.83	0.83	0.83	0.77	0.77	0.77		0.93	0.93	0.93		0.91
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2		2
Cap, veh/h	164	49	249	102	70	173		212	2949	25		86
Arrive On Green	0.09	0.19	0.19	0.06	0.15	0.15		0.06	0.57	0.57		0.05
Sat Flow, veh/h	1774	266	1344	1774	467	1152		3442	5199	45		1774
Grp Volume(v), veh/h	224	0	260	79	0	104		167	1881	1033		68
Grp Sat Flow(s),veh/h/ln	1774	0	1610	1774	0	1619		1721	1695	1854		1774
Q Serve(g_s), s	13.5	0.0	22.9	6.4	0.0	8.5		7.0	78.9	79.7		5.5
Cycle Q Clear(g_c), s	13.5	0.0	22.9	6.4	0.0	8.5		7.0	78.9	79.7		5.5
Prop In Lane	1.00		0.83	1.00		0.71		1.00		0.02		1.00
Lane Grp Cap(c), veh/h	164	0	298	102	0	244		212	1923	1052		86
V/C Ratio(X)	1.37	0.00	0.87	0.77	0.00	0.43		0.79	0.98	0.98		0.79
Avail Cap(c_a), veh/h	164	0	391	121	0	354		233	1923	1052		379
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	66.4	0.0	57.9	68.0	0.0	56.4		67.7	30.8	30.9		68.8
Incr Delay (d2), s/veh	199.4	0.0	12.9	18.2	0.0	0.4		13.3	15.6	23.5		6.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
%ile BackOfQ(50%),veh/ln	15.7	0.0	11.3	3.7	0.0	3.8		3.7	40.7	47.3		2.9
LnGrp Delay(d),s/veh	265.7	0.0	70.8	86.2	0.0	56.8		81.0	46.3	54.4		74.8
LnGrp LOS	F		E	F		E		F	D	D		E
Approach Vol, veh/h		484			183				3081			
Approach Delay, s/veh		161.0			69.5				50.9			
Approach LOS		F			E				D			

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.1	85.6	13.9	32.6	11.9	87.8	19.0	27.5
Change Period (Y+Rc), s	* 5.1	* 4.9	5.5	5.5	* 4.8	* 4.9	5.5	5.5
Max Green Setting (Gmax), s	* 9.9	* 84	10.0	35.5	* 31	* 63	13.5	32.0
Max Q Clear Time (g_c+I1), s	9.0	75.0	8.4	24.9	7.5	81.7	15.5	10.5
Green Ext Time (p_c), s	0.0	5.7	0.0	0.5	0.0	0.0	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	54.5
HCM 2010 LOS	D

Notes

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	2440	96
Future Volume (veh/h)	2440	96
Number	2	12
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		0.99
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	2681	105
Adj No. of Lanes	3	1
Peak Hour Factor	0.91	0.91
Percent Heavy Veh, %	2	2
Cap, veh/h	2807	868
Arrive On Green	0.55	0.55
Sat Flow, veh/h	5085	1572
Grp Volume(v), veh/h	2681	105
Grp Sat Flow(s),veh/h/ln	1695	1572
Q Serve(g_s), s	73.0	4.7
Cycle Q Clear(g_c), s	73.0	4.7
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	2807	868
V/C Ratio(X)	0.96	0.12
Avail Cap(c_a), veh/h	2911	900
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	31.0	15.7
Incr Delay (d2), s/veh	8.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	36.2	2.0
LnGrp Delay(d),s/veh	39.3	15.7
LnGrp LOS	D	B
Approach Vol, veh/h	2854	
Approach Delay, s/veh	39.3	
Approach LOS	D	
Timer		

Kimley»Horn

Appendix D

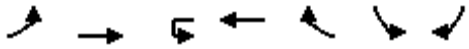
Analysis Worksheets for Cumulative (2040) plus Proposed Project Mitigated Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	490	624	30	30	1290	1092	80	130	50	287	10	90
Future Volume (veh/h)	490	624	30	30	1290	1092	80	130	50	287	10	90
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	533	678	33	33	1402	0	87	141	54	312	11	98
Adj No. of Lanes	1	2	0	2	3	1	1	1	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	460	1917	93	61	1591	495	110	167	64	320	568	254
Arrive On Green	0.26	0.56	0.56	0.02	0.31	0.00	0.06	0.13	0.13	0.09	0.16	0.16
Sat Flow, veh/h	1774	3436	167	3442	5085	1583	1774	1284	492	3442	3539	1583
Grp Volume(v), veh/h	533	349	362	33	1402	0	87	0	195	312	11	98
Grp Sat Flow(s),veh/h/ln	1774	1770	1833	1721	1695	1583	1774	0	1776	1721	1770	1583
Q Serve(g_s), s	26.5	11.1	11.1	1.0	26.8	0.0	4.9	0.0	11.0	9.2	0.3	5.7
Cycle Q Clear(g_c), s	26.5	11.1	11.1	1.0	26.8	0.0	4.9	0.0	11.0	9.2	0.3	5.7
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.28	1.00		1.00
Lane Grp Cap(c), veh/h	460	988	1023	61	1591	495	110	0	231	320	568	254
V/C Ratio(X)	1.16	0.35	0.35	0.54	0.88	0.00	0.79	0.00	0.85	0.98	0.02	0.39
Avail Cap(c_a), veh/h	460	1388	1437	168	2903	904	147	0	608	320	1235	553
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.9	12.4	12.4	49.8	33.3	0.0	47.3	0.0	43.5	46.3	36.2	38.4
Incr Delay (d2), s/veh	93.7	0.1	0.1	2.7	0.7	0.0	13.1	0.0	3.3	43.5	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.9	5.5	5.7	0.5	12.6	0.0	2.8	0.0	5.6	6.3	0.1	2.5
LnGrp Delay(d),s/veh	131.6	12.5	12.5	52.5	34.0	0.0	60.4	0.0	46.8	89.8	36.2	38.8
LnGrp LOS	F	B	B	D	C		E		D	F	D	D
Approach Vol, veh/h		1244			1435			282			421	
Approach Delay, s/veh		63.5			34.4			51.0			76.5	
Approach LOS		E			C			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	32.0	36.9	11.9	21.5	6.9	62.0	15.0	18.4
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	26.5	* 58	8.5	* 36	* 5	* 80	9.5	* 35
Max Q Clear Time (g_c+I1), s	28.5	28.8	6.9	7.7	3.0	13.1	11.2	13.0
Green Ext Time (p_c), s	0.0	3.3	0.0	0.1	0.0	1.0	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	51.7
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	874	1234	0	1318	110	50	619
Future Volume (veh/h)	874	1234	0	1318	110	50	619
Number	1	6		2	12	3	18
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863		1863	1863	1863	1863
Adj Flow Rate, veh/h	950	1341		1433	120	0	731
Adj No. of Lanes	2	2		2	1	1	2
Peak Hour Factor	0.92	0.92		0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2		2	2	2	2
Cap, veh/h	964	2600		1441	645	274	1376
Arrive On Green	0.28	0.73		0.41	0.41	0.00	0.15
Sat Flow, veh/h	3442	3632		3632	1583	1774	3167
Grp Volume(v), veh/h	950	1341		1433	120	0	731
Grp Sat Flow(s),veh/h/ln	1721	1770		1770	1583	1774	1583
Q Serve(g_s), s	30.2	17.8		44.4	5.3	0.0	17.0
Cycle Q Clear(g_c), s	30.2	17.8		44.4	5.3	0.0	17.0
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	964	2600		1441	645	274	1376
V/C Ratio(X)	0.99	0.52		0.99	0.19	0.00	0.53
Avail Cap(c_a), veh/h	964	2603		1441	645	274	1376
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00		1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.4	6.2		32.5	20.9	0.0	22.9
Incr Delay (d2), s/veh	25.4	0.1		22.2	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.8	8.6		25.9	2.3	0.0	8.2
LnGrp Delay(d),s/veh	64.8	6.3		54.7	21.0	0.0	23.1
LnGrp LOS	E	A		D	C		C
Approach Vol, veh/h		2291		1553		731	
Approach Delay, s/veh		30.6		52.1		23.1	
Approach LOS		C		D		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	36.0	51.5				87.5		22.5
Change Period (Y+Rc), s	* 5.2	* 6.7				* 6.7		5.5
Max Green Setting (Gmax), s	* 31	* 45				* 81		17.0
Max Q Clear Time (g_c+I1), s	32.2	46.4				19.8		19.0
Green Ext Time (p_c), s	0.0	0.0				3.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	36.7
HCM 2010 LOS	D

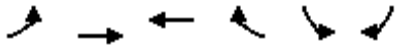
Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	1038	160	50	790	428	20	20	30	1039	140	490
Future Volume (veh/h)	110	1038	160	50	790	428	20	20	30	1039	140	490
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	120	1128	174	54	859	0	22	22	33	1129	152	533
Adj No. of Lanes	1	2	0	2	3	1	1	1	0	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	147	1195	184	94	1675	522	27	34	52	1185	1346	602
Arrive On Green	0.08	0.39	0.39	0.03	0.33	0.00	0.01	0.05	0.05	0.34	0.38	0.38
Sat Flow, veh/h	1774	3076	473	3442	5085	1583	1774	674	1011	3442	3539	1583
Grp Volume(v), veh/h	120	648	654	54	859	0	22	0	55	1129	152	533
Grp Sat Flow(s),veh/h/ln	1774	1770	1779	1721	1695	1583	1774	0	1684	1721	1770	1583
Q Serve(g_s), s	7.3	38.5	38.8	1.7	14.9	0.0	1.3	0.0	3.5	34.9	3.0	34.3
Cycle Q Clear(g_c), s	7.3	38.5	38.8	1.7	14.9	0.0	1.3	0.0	3.5	34.9	3.0	34.3
Prop In Lane	1.00		0.27	1.00		1.00	1.00		0.60	1.00		1.00
Lane Grp Cap(c), veh/h	147	688	691	94	1675	522	27	0	86	1185	1346	602
V/C Ratio(X)	0.82	0.94	0.95	0.58	0.51	0.00	0.83	0.00	0.64	0.95	0.11	0.89
Avail Cap(c_a), veh/h	216	767	771	161	1809	563	99	0	540	1335	2300	1029
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	32.2	32.3	52.4	29.5	0.0	53.6	0.0	50.8	34.9	21.9	31.6
Incr Delay (d2), s/veh	8.9	17.9	18.7	2.1	0.1	0.0	20.8	0.0	2.9	13.5	0.0	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	22.1	22.5	0.8	6.9	0.0	0.8	0.0	1.7	18.8	1.5	15.3
LnGrp Delay(d),s/veh	58.2	50.1	50.9	54.5	29.6	0.0	74.4	0.0	53.7	48.4	21.9	34.1
LnGrp LOS	E	D	D	D	C		E		D	D	C	C
Approach Vol, veh/h		1422			913			77			1814	
Approach Delay, s/veh		51.1			31.1			59.6			42.0	
Approach LOS		D			C			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	40.8	7.1	46.6	8.1	47.3	43.0	10.7
Change Period (Y+Rc), s	5.5	* 4.9	5.5	* 5.1	* 5.1	* 4.9	5.5	* 5.1
Max Green Setting (Gmax), s	13.3	* 39	6.1	* 71	* 5.1	* 47	42.3	* 35
Max Q Clear Time (g_c+I1), s	9.3	16.9	3.3	36.3	3.7	40.8	36.9	5.5
Green Ext Time (p_c), s	0.0	1.8	0.0	0.5	0.0	1.6	0.6	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	43.0
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	896	1464	1043	120	50	786
Future Volume (veh/h)	896	1464	1043	120	50	786
Number	1	6	2	12	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	974	1591	1134	130	0	912
Adj No. of Lanes	2	2	2	1	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1036	2374	1101	493	340	1560
Arrive On Green	0.30	0.67	0.31	0.31	0.00	0.19
Sat Flow, veh/h	3442	3632	3632	1583	1774	3167
Grp Volume(v), veh/h	974	1591	1134	130	0	912
Grp Sat Flow(s),veh/h/ln	1721	1770	1770	1583	1774	1583
Q Serve(g_s), s	24.5	23.8	27.6	5.5	0.0	17.0
Cycle Q Clear(g_c), s	24.5	23.8	27.6	5.5	0.0	17.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1036	2374	1101	493	340	1560
V/C Ratio(X)	0.94	0.67	1.03	0.26	0.00	0.58
Avail Cap(c_a), veh/h	1086	2430	1101	493	340	1560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.2	8.7	30.5	22.9	0.0	16.0
Incr Delay (d2), s/veh	14.4	0.6	35.0	0.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.7	11.7	18.7	2.4	0.0	7.9
LnGrp Delay(d),s/veh	44.6	9.3	65.5	23.0	0.0	16.4
LnGrp LOS	D	A	F	C		B
Approach Vol, veh/h		2565	1264		912	
Approach Delay, s/veh		22.7	61.2		16.4	
Approach LOS		C	E		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	11.9	34.3				66.2		22.5
Change Period (Y+Rc), s	* 5.2	* 6.7				* 6.7		5.5
Max Green Setting (Gmax), s	* 28	* 28				* 61		17.0
Max Q Clear Time (g_c+I1), s	26.5	29.6				25.8		19.0
Green Ext Time (p_c), s	0.2	0.0				3.9		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	31.8
HCM 2010 LOS	C

Notes

APPENDIX I.4

Memorandum RE: Jaeger Ranch Supplemental Traffic Analyses, Draft Trip Generation Memorandum

Kimley»Horn

Memorandum

To: Olga Sciorelli, P.E., QSD, QSP
Land Planning Manager
K. Hovnanian® Homes of California, Inc.

From: Chris Gregerson, P.E., T.E., PTP, PTOE

Re: Jaeger Ranch Supplemental Traffic Analyses
DRAFT *Trip Generation Memorandum*

Date: June 12, 2019

Per your request and authorization, we have prepared this trip generation memorandum for the above referenced project.

Project Understanding

This memorandum documents the results of a trip generation comparison completed for Jaeger Ranch (the "proposed project" or "project"). The vacant project site is located along Rancho Cordova Parkway/Jaeger Road, south of Douglas Road in Rancho Cordova, California. Kimley-Horn previously completed a traffic impact analysis[1] for the Jaeger Ranch project. Subsequently, Kimley-Horn also completed a supplemental traffic impact analysis for a new land use mix submitted by the applicant for the proposed project[2]. However, since the publication of these reports, the project applicant has further modified the land use mix of the proposed project. The purpose of this memorandum is to document the trip generation characteristics of the proposed project's published land use mix, the current land use mix, and a comparison between the two showing that the current land use mix does not result in more trips being generated compared to the published land use mix.

Project Trip Generation (Published)

As documented in the supplemental traffic impact analysis[2], the number of trips anticipated to be generated by the proposed project were approximated using data included in *Trip Generation, 9th Edition*, published by the Institute of Transportation Engineers (ITE). The land use considered for the supplemental analysis included 723 market rate single family detached units (SFR), 250 multi-family housing units, 743 Active Adult detached units (AAR), and 32,000 square-feet (s.f.) of commercial. Active Adult Residential (AAR) refers to detached age-restricted housing units. This land use type is understood to have trip characteristics that generate fewer daily trips when compared to non-age restrictive land use types. In fact, as described in Trip Generation, the daily trip rate for AAR is 61-percent less than the daily trip rate for SFR. The trip generation characteristics included in the Supplemental Analysis for the proposed project are presented in **Table 1**.

As shown in **Table 1**, the proposed project was estimated to generate approximately 11,606 new daily trips, with 843 and 1,102 trips occurring during the A.M. and P.M. peak-hours, respectively.

[1] *Transportation Impact Analysis, Jaeger Ranch,* Kimley-Horn and Associates, Inc., August 28,2018.
[2] *Jaeger Ranch Supplemental Traffic Analyses*, Kimley-Horn and Associates, Inc., December 3, 2018.

Kimley»Horn

Table 1 – Proposed Project Trip Generation Characteristics (Supplemental Analysis)

Land Use (ITE Code)	Size (DU/KSF)	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Single Family Detached Housing (210)	735	6,796	547	136	411	716	451	265
Apartment (220)	215	1,225	105	21	84	114	74	40
Senior Adult Housing - Detached (251)	737	2,519	158	55	103	181	110	71
Senior Adult Housing - Attached (252)	38	112	8	3	5	10	6	4
Shopping Center (820)	32.000	954	23	14	9	81	39	42

Project Trip Generation (Proposed)

The number of trips anticipated to be generated by the proposed project with the proposed land use mix were approximated using data included in ITE's Trip Generation Manual. The currently proposed land use mix includes 735 market rate single family detached units (SFR), 215 multi-family housing units (MFR), 737 Active Adult detached units (AAR), 38 Active Adult attached units (AAMFR), and 32,000 s.f. of commercial. The trip generation characteristics for the currently proposed land use mix for the proposed project are presented in Table 2. Consistent with all previously completed analyses, internal capture and pass-by reductions were applied as applicable.

Table 2 – Proposed Project Trip Generation Characteristics (Proposed Land Use Mix)

Land Use (ITE Code)	Size (DU/KSF)	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Single Family Detached Housing (210)	735	6,796	547	136	411	716	451	265
Apartment (220)	215	1,225	105	21	84	114	74	40
Senior Adult Housing - Detached (251)	737	2,519	158	55	103	181	110	71
Senior Adult Housing - Attached (252)	38	112	8	3	5	10	6	4
Shopping Center (820)	32.000	954	23	14	9	81	39	42
Total		**11,606**	**841**	**229**	**612**	**1,102**	**680**	**422**

As shown in Table 2, the proposed project is estimated to generate approximately 11,606 new daily trips, with 841 and 1,102 trips occurring during the A.M. and P.M. peak-hours, respectively. In comparison to the number of trips generated for the land use mix documented in the Supplemental Analysis, the proposed land use mix generates no additional daily or PM peak-hour trips, and generates 2 fewer AM peak-hour trips.

APPENDIX J

Utilities Appendices

CONTENTS

Appendix J.1: Drainage Study

Appendix J.2: Level 1 Sewer Study

Appendix J.3: Level 2 Sewer Study

Appendix J.4: Water Supply Assessment

APPENDIX J.1

Drainage Study

The Ranch

Master Drainage Study

Third Submittal

April 30, 2019

Prepared by:
Watermark Engineering, Inc.
3153 Jenna Way
Roseville, CA 95747
Ph: 916. 774. 1111
Email: pstiehr@wtrmark.com

TABLE OF CONTENTS

Introduction 1
Overview 1
Previous Studies 2
Definitions 2
Design Criteria 3
General Requirements 3
Water Quality 3
Hydromodification 3
High Flow Attenuation 4
Methodology 4
Existing Conditions 4
Developed Conditions 4
Hydrologic analysis 5
Land Use 5
Soils 5
Groundwater 5
Surface Water 6
Existing Conditions 6
Developed Conditions 6
Hydraulic Analysis 8
Overview 8
Modeling 8
Permanent Pool 9
Hydromodification and High Flow Attenuation 10
Discussion of Approach 11
Basin Details 11
Outfalls 16
Existing and Post-Project Flows 16
Attachments:
A. Soils Information
B. Hydrologic Information
C. Hydraulic Information
D. Hydromodification
E. Morrison Creek South Branch – Existing and Post-Project Information

INTRODUCTION

OVERVIEW

The Ranch development project is a proposed 1,300 senior residential development over 530 acres within the City of Rancho Cordova. The proposed project is defined on the Small Lot Tentative Subdivision Map, THE RANCH, prepared by Wood Rodgers, dated February 2018. See **Figure 1**.

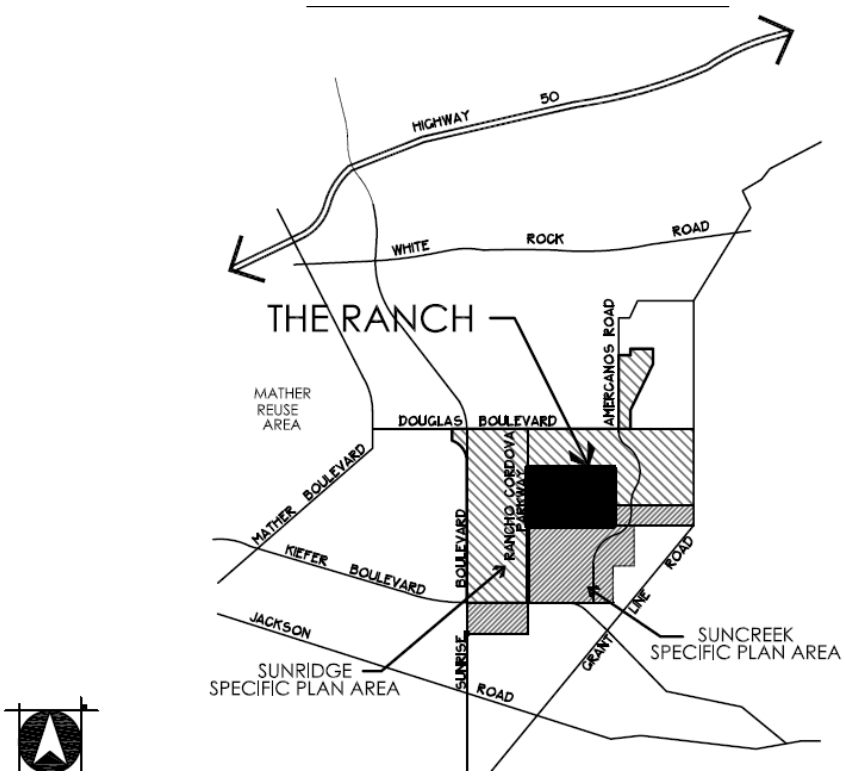


Figure 1. Vicinity Map

The project consists of two development areas at the northwest and southeast quadrants, with the remaining area as open space and an environmental corridor for the Lower Morrison Creek South. The northwest quadrant will drain to the Lower Morrison Creek South, and the southeast quadrant will drain to both the Lower Morrison Creek South and Kite Creek.

The open spaces will also include detention basins that will provide stormwater management. The management includes capture and treatment of summer irrigation flows, hydromodification of storm runoff, and attenuation of very large storms so that post-project flow rates are equal to or less than existing conditions. There will be three basins to manage runoff from the northwest quadrant development and two basins to manage the southeast quadrant stormwater runoff.

Current land use is cattle grazing. The topography is irregular and uneven, with gently rolling terraces, numerous hills, and depressions. The Lower Morrison Creek South meanders down the middle, generally from the northeast to southwest.

With the exception of a major road crossing (Crysanthy Boulevard) and four outflows from the respective detention basins, the South Branch of Morrison will remain as a meandering channel within an open space corridor. The outfall for the southern portion of the Southeast quadrant into Kite Creek is tentatively planned to be part of a larger outfall that will serve the proposed SunCreek Specific Plan.

PREVIOUS STUDIES

1. The "Drainage Study for The Preserve at Sunridge", County of Sacramento, March 2006, was prepared by Wood Rodgers. This study provided information for on-site and off-site drainage facilities for Ultimate Conditions and provided a solution for Interim Conditions. The development layout and environmental constraints have been significantly changed, and this study is no longer applicable.
2. The "Final Master Drainage Study, Sunrise-Douglas Community Plan Area, Sacramento, CA", dated October 16, 1998 by the Spink Corporation was available as a reference document for comparison of existing and developed conditions, flow volumes, and detention basin volumes.
3. The Montelena Drainage Study, including sections for Anatolia I and II, dated September 2007 by Wood Rodgers, is a compilation of drainage analyses prepared for several developments within the Sunrise-Douglas Community Plan. The studies focused on the Sunrise-Douglas Community Plan area but also included analyses of impacts to Laguna Creek.
4. The Master Drainage Study for Anatolia III, dated June 2004 by Wood Rodgers, provided the analysis and design information for the facilities to manage Anatolia III stormwater. The analysis and facilities information were used as presented for this study.
5. SunCreek Master Drainage Study, November 15, 2017, prepared by Watermark Engineering, Inc. for the SunCreek owners group. The study was for approximately 1,270 acres of mostly residential development east and mostly south of The Ranch property. The southeast quadrant of The Ranch drains to Kite Creek, which is also where most of the proposed SunCreek development drains.

This updated study relies on much of the basic data gathered and created by Wood Rodgers including land use information and topography mapping used for the cross-section data for the backwater analysis. It also relies on development information currently being prepared by CTA Engineering and Surveying.

DEFINITIONS

1. For this study, a shed or subshed, coupled with a number (#), is a portion of or an entire tributary area that drains to a specific location, either directly into a creek or into a basin (#).
2. A basin is the complete facility that will provide the stormwater management, including the permanent pool for water quality, storage for hydromodification and peak flow attenuation, and the outflow facilities.
3. Hydromodification is the change in watershed characteristics as a result of land use changes (development in this instance).
4. Lower Morrison Creek South Branch is identified as MCSB within this document.

DESIGN CRITERIA

GENERAL REQUIREMENTS

This study is prepared under the same criteria used for the SunCreek drainage study. Specifically, a drainage study must be submitted to the City to demonstrate that:

a. The proposed detention basins are appropriately sized in compliance with the SSQP's NPDES Permit and Hydromodification Management Plan to mimic existing conditions;
b. The stormwater basins will drain by gravity;
c. The basins can be designed to minimize long-term maintenance, especially the outlet structures.

Per additional city requirements:

d. The existing-conditions 100-year floodplain of Lower Morrison Creek South Branch has to be defined;
e. Developed flows leaving The Ranch shall not create significant impacts to downstream properties.

Topographic mapping and this analysis are based on the National Geodetic Vertical Datum of 1929 (NGVD29).

WATER QUALITY

Through coordination with City officials, the proposed water quality treatment will utilize both dry basins and wet basins that include a permanent pool. The basins will be designed per the "Stormwater Quality Design Manual for the Sacramento and South Placer Regions, July 2018, Water Quality Detention Basins".

Three basins are designed with a permanent pool located below the lowest elevation of the outfall facilities. This configuration and the design were based on Table DB-1 of the Stormwater Manual. The remaining two basins are designed as dry basins because of their relatively small size. It would be difficult to keep a small permanent pool healthy, and one of the dry basins is under PG & E power lines where water bodies are not allowed.

HYDROMODIFICATION

The hydromodification was completed using the SAHM (Sacramento Area Hydrology Model) dated December 2013, developed by Clear Creek Solutions, Inc. The computer program provides pre-project peak flows for 2- through 25-year recurrence intervals storms. The program then analyzes the proposes facilities and compares pre-project and post-development flows, ranging from 25 to 40% of the 2-year peak flow through the 10-year peak flow, to demonstrate that post-project flows are similar to pre-project flows.

HIGH FLOW ATTENUATION

There is a requirement to attenuate the 100-year storm to approximate pre-project conditions. The XP-SWMM software was used for that analysis as well as for the selected lesser storms as described later. Both the SAHM and XP SWMM software were used to size and configure the basin and corresponding outfall facilities.

METHODOLOGY

EXISTING CONDITIONS

The first major task was to select and analyze existing subsheds to determine runoff characteristics (hydrographs) and peak flows for the selected recurrence-intervals storms. SacCalc was used to generate the subshed hydrographs. The hydrographs were then added and routed using the XP-SWMM software. This software is approved by FEMA for Flood Insurance Studies and mapping revisions, so this information will also be used for the LOMR submittal.

DEVELOPED CONDITIONS

The Ranch was subdivided into five drainage areas and five corresponding basins based on topographic constraints and proximity to Lower Morrison Creek South and Kite Creek.

Where appropriate, existing conditions subsheds were used for developed conditions. However, the post-project subsheds are based on both development boundaries and topography. Development grading will redirect a small portion of the southeast quadrant development area to Kite Creek rather than to MCS, mainly due to grading constraints.

The southwest portion of The Ranch will remain as open space. This area currently drains to MCS but will be directed south to Kite Creek as part of the nearby SunCreek development. This specific area is not part of this drainage study.

The decision to convey this area to Kite Creek was made as part of Appendix D, Regional Master Drainage Study for SunCreek Specific Plan, prepared by Makay and Somps, dated August 22, 2011. An excerpt of page 24 of that document is show below.

The 102.3+/- acre Open Space Preserve (Sub-shed KCOS-05) located east of Rancho Cordova Parkway and north of the SunCreek Plan Area has been modeled in a similar fashion as the Morrison Spill. The storm related runoff from this sub-shed is from an undeveloped open space area and does not require water quality treatment or detention within the SunCreek Plan Area. The runoff from sub-shed KCOS-05 naturally drains towards the northeast corner of the Rancho Cordova Parkway-North Campus Drive intersection. An inlet structure will be constructed at this location and the storm runoff from sub-shed KCOS-05 is routed through a 48-inch diameter pipe located in Rancho Cordova Parkway. The 48-inch diameter pipeline is sized to convey the higher peak flow of 84 +/- cfs generated by the 100-year, 24-hour storm rather than the peak flow rate of 50 +/- cfs generated by the 100-year, 10-day storm. The 48-inch pipeline will follow Rancho Cordova Parkway to the south where it drops into a 72-inch diameter pipe. The drop into the 72-inch diameter pipeline will help to dissipate the velocity energy generated in the 48-inch pipeline before discharging into the preserve/open space area just upstream of the Rancho Cordova Parkway box culverts. Additional energy dissipation measures prior may be needed to discharge into the preserve/open space to prevent erosion of the streambed.

HYDROLOGIC ANALYSIS

LAND USE

The Ranch is undeveloped. The land may have been used for some dry farming in the past, but is currently used for cattle grazing.

SOILS

The soil classifications for this study were based on information available from Natural Resources Conservation Service (NRCS). The soils are mostly classified as Hydrologic Soils Group D with the remaining classified within Group C. Selected soils information is provided as **Attachment A**.

GROUNDWATER

Information from the nearby SunCreek Specific Plan Project DEIR/DEIS indicated that "groundwater is located from 20 to 100 feet below the ground surface depending on when and where the measurement was taken."

A preliminary geotechnical report prepared by WallaceKuhl entitled Jeager Ranch Property, dated Sept 26, 2016, stated that "groundwater is anticipated to vary between 150 and 240 feet below existing surface grades". As such, groundwater has not been considered in the analysis of the basins and drainage corridors.

There are two monitoring wells within The Ranch, but data collection and availability are not known at this time.

SURFACE WATER

The two sources of water that flow into the basins are rainfall runoff and runoff from excess landscaped irrigation. There are no other sources of surface water that could impact flows into and out of the proposed basins.

EXISTING CONDITIONS

MCSB generally flows from the northeast corner to the west central property boundary of The Ranch. The total tributary area of MCS entering The Ranch is 1,120 acres and the 100-year, 12-hour natural flow was estimated to be 678 cfs per Wood Rodgers (Reference 1). This hydrograph was used as model input at the northeast corner of the development site. Local inflow was added to the model at three locations along MCS as it meanders through The Ranch. Additional information of the flows along MCSB is provided later in this document.

DEVELOPED CONDITIONS

The Ranch was subdivided into five sheds: three sheds that represent the developed areas north of MCS; two development areas south of MCS; and the sixth shed representing the MCS corridor.
Drainage sheds were reconfigured based on land use, topography, and availability of suitable detention sites. The basins will be designed as wet basins except for the basins PG and SN. The permanent pool will be eight feet deep. The actual configuration of the basins has not been determined. Additional information about the basins is provided later in this document under Basin Details. The five sheds are shown on **Figure 2.**

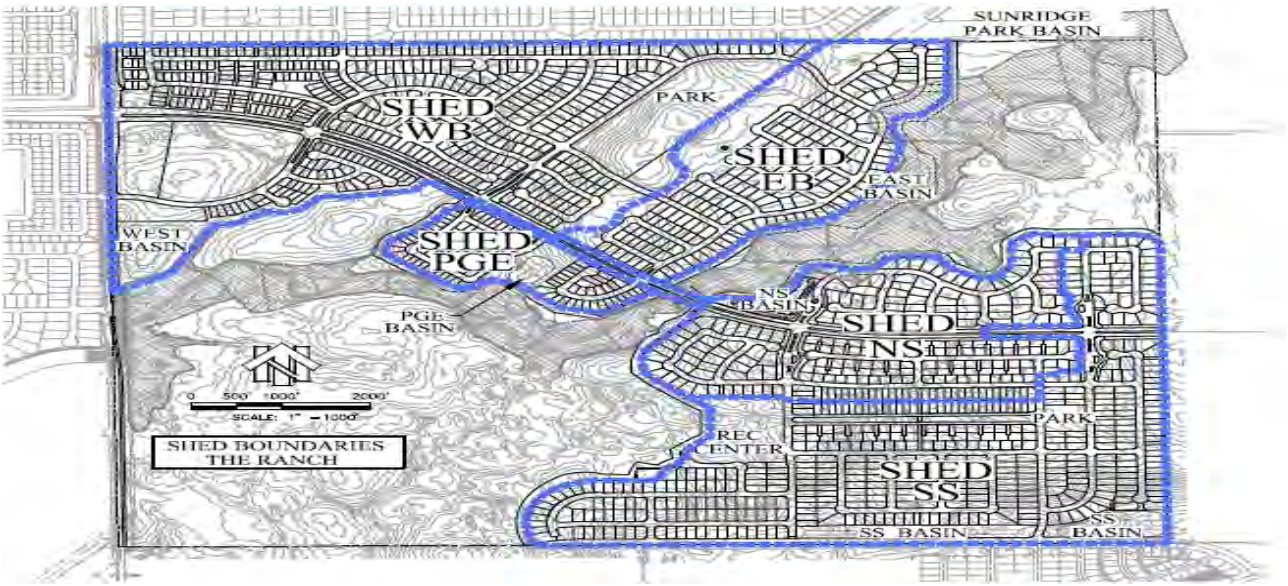


Figure 2. Sheds within The Ranch

A brief description of each shed and the corresponding detention basin facilities follows:

- **West Basin (WB):** The shed includes the northwest development area, and the basin is located just south of the tributary shed area and just east of Rancho Cordova Parkway. The outfall from this basin will enter MCS where it turns south and parallels the parkway in a man-made channel.

- **East Basin (EB)**: The EB shed includes the central and eastern portion of The Ranch development just north of MCS. The detention basin is adjacent to MCS near the middle of the development site. Outfall from this basin will be directly to MCS or conveyed south and discharged into the creek at the proposed Crysanthy Boulevard crossing.

- **PGE Basin (PGE):** This shed is located south of Crysanthy under the PG&E transmission lines. The shed area was minimized to comply with PG&E constraints for drainage facilities under their high-voltage power lines. The basin will be designed to create and maintain as much infiltration as can be reasonably achieved. An outflow will discharge south or west directly into MCS.

- **North South Basin (NS)** This shed is located along the left bank of MCS, generally along both sides of Crysanthy Boulevard east of the MCS crossing. The basin will be a dry-extended basin with an outflow to MCS upstream of the Crysanthy crossing. Note the modeling map shows SN rather than NS.

- **South-South Basin (SS):** All of the developed area south of MCS will drain to this linear basin that is located along the southern boundary of The Ranch. The permanent pool is at the southeast corner and will drain to Kite Creek. Its outfall will be part of a larger outfall that will also serve SunCreek and will become the new headwaters of Kite Creek.

  It is expected that the storm drains discharging into the wet basins will be below the water level of the permanent pool. This eliminates the need for access control at the outfalls. Manholes just upstream of the basin will include a slide gate so that the deep pipe can be isolated and cleaned as necessary.

Maps 1 and 2, folded in the back of this document, provide a detailed layout of the subshed areas, the proposed storm drain network, and the proposed detention basins. **Attachment B** provides a summary of imperviousness and peak flows for the 2-, 10-, and 100-year storms at the selected subsheds for post-project conditions. There is no comparative analysis for existing conditions because the subshed boundaries are not the same between existing and the post-project conditions.

HYDRAULIC ANALYSIS

OVERVIEW

The design of The Ranch of the three stormwater management wet basins can be described as three storage areas in a vertical stack. The lowest portion will be the permanent pool and will be below the lowest outfall. This permanent pool provides the water quality per the wet detention basin criteria.

The storage component to meet the hydromodification criteria is "stacked" in the middle and larger than the permanent pool. This hydromodification component also includes outflow facilities. For simplicity, the outflow facilities for each basin are designed to include a single orifice and a single weir.

The top area is the storage area needed to store and attenuate extreme storms up to the 100-year storm. The orifice and weir are designed to release flows to less than the pre-project flows. Trial and error model runs were used to determine the basin size, the size of the orifice, and the shape and size of the weir.

Each basin and corresponding outflow facility has to meet three distinct design criteria. The criteria were the size of a permanent pool for water quality, flow attenuation to meet the hydromodification protocol, and flow attenuation for extreme flows. To satisfy these criteria, a simple calculation and two computer models were used.

The basin under the PG&E transmission lines and the NS basin will be dry basins, designed to drain within 48 hours per water quality criteria. In addition, the basin bottom will be configured and constructed to improve and maintain infiltration. The design has not started, but concepts being considered to improve infiltration include pre-treatment areas, gravel beds, and excavation through the duripan layer, then backfilled with permeable material. Please note that infiltration has not been considered for sizing or flow control for these two dry basins. Rather, the design of the dry basins will include infiltration enhancements to reduce ponding time and reduce the chance of outflow from summer irrigation runoff.

MODELING

The computer model SAHM was used to determine the peak flows for the 2-, 5-, 10-, and 25-year events for each of the basins assuming existing conditions. These flows were used as "targets" within the XP-SWMM analysis. Peak 100-year target flows were available from the existing conditions subsheds but are not available because there are no "existing conditions" watershed parameters to use to compute flow. The developed conditions subshed boundaries are based on development boundaries, not watershed boundaries. As a result, basin parameters normally used to determine 100-year flows are not available.

A separate analysis was completed. The 100-year flows from the existing conditions subsheds were used to develop a regression equation to estimate 100-year flows from the man-made areas. The equation is:

$$Q_{100} = 3.06\ DA^{0.75},\ \text{where:}$$

Q_{100} = the 100-year flow in cubic feet per second (cfs), and
DA = drainage area in acres.

Table 1 provides a summary of the shed areas that includes estimates of natural flow from each shed. The flow estimates are used only as guides for the detention basin analyses.

Table 1. Summary of Existing Conditions Subsheds

Shed ID	Shed Area (ac)	100-yr Peak Flow (cfs)[a]
West	104.2	100
East	46.0	56
PGE	14.7	23
North-South	50.2	58
South-South	95.7	94
Remainder	218.7	na
Total	530	na

a: Estimated from regression equation developed for the SunCreek. See Modeling section for details.

The target flows were then used as a general guide to configure and evaluate various basin sizes and outfall facilities. They were used only as target flows and not specifically for design or compliance.

In addition to sizing the basin and outfall facilities, the upstream storm drain facilities were also modeled to provide preliminary pipe sizing based on containment of the 10-year flow. Note that the storm drain alignments are probably accurate but the pipe inverts and other design details are not yet available. As such, the hydraulic analysis of the pipe network is at the master drainage study level only. **Attachment C** provides additional information concerning design flows, preliminary pipe sizes, and information concerning basin and basin outfall parameters.

PERMANENT POOL

The permanent pool was sized based on the Sac County Water Quality manual (July 2018). While the actual design of the basins is not yet available, design guidelines and sizing information for each basin is provided later in this document. The wet basins are expected to be healthy, attractive, and maintain a fish population more than just mosquito fish.

All basins should be designed with side slopes of 4:1 or flatter. In addition, it is strongly recommended that soft curves be used for the shore line and basin perimeter. Clayey soils need to be stockpiled for the three wet ponds during excavation and nearby construction. Those soils will then be used to line the bottoms of the wet basins to minimize infiltration. The dry basins should not be lined.

The permanent pools will be eight feet deep or greater. The pan evaporation at the Folsom Lake weather station is about 52 inches for the months of May through October. Using a conversion

of 0.75, the loss during the summer would be about 39 inches. Assuming a full pool in late April, no summer inflow, and minimum infiltration, the pools should have about four feet of water remaining at the end of the summer. As a minimum, the pools are expected to have sufficient volume and depth to maintain suitable temperature and habitat for mosquito fish. Note that summer inflows would also help maintain minimum water levels during the summer. Also note that summer inflows are not expected to exceed evapotranspiration, causing spill during the summer.

HYDROMODIFICATION AND HIGH FLOW ATTENUATION

The following steps were used to size and configure the basins and outflow facilities. The SAHM model was set up, starting with the footprint of the permanent pool. A trial and error procedure was then used to determine a storage basin, a single orifice, and a rectangular notch that met the hydromodification criteria.

That proposed facilities information was then used as input for the XP-SWMM (XP) model. An outfall to Kite Creek was added to the facilities to evaluate backwater conditions into the analysis. Note that the SAHM model is not dynamic, so backwater cannot be evaluated within that model.

Trial and error was again used to confirm and/or modify the proposed storage capacity and outflow facilities to meet the 100-year attenuation criteria. After the outflow requirements were met within the XP model, the revised facilities were then reloaded into the SAHM model to ensure that the hydromodification criteria were met.

The basin and outfall features were then reloaded into the SAHM model using the SSD Table option. If the hydromodification criteria were not met, then the XP model was reworked. This whole process was required to be able to include the outflow rating using different weir configurations, to be able to account for backwater, and accurately represent a basin that has varied side slopes. Typically, the generic basin has mild side slopes above the permanent pool that rapidly increase storage, then steeper slopes near the top. The SAHM is not designed for complex basin configurations.

The results of the SAHM analyses for the five basins are provided in **Attachment D**. Please note that the SAHM analysis focuses on flows from 25% of the 2-year storm through the 10-year storm and does not analyze storms smaller or larger than this range. Therefore, the permanent pool information and the upper portions of the storage and outfall facilities are not needed and have generally not been included in the data input. As such, the basin stage-area-storage information and outfall information do not represent the complete facility. Please refer to the Basin Details section for complete information.

The existing tributary area of Shed SS is less than the post-project area. The SAHM models for Shed SS reflect this relatively small increase and the capacity and outfall facilities for Basin SS reflect these differences. Also note that the SAHM analysis showed failure between 40 and 43 cfs but passed above and below this relatively small range.

DISCUSSION OF APPROACH

There were several reasons for the trial and error approach. Both models were needed to meet the design criteria, but either model could control the basin size and shape and the outflow facilities.

Also, the criteria could have been easily met without the trial and error effort if the modeler did not consider basin size to be an important consideration. As an example, when backwater was considered in the XP model, the outflow was less compared to the SAHM model. In other words, the SAHM model overestimated the outflow. The backwater-controlled outflow was actually less which meant more storage (land) was needed if only the SAHM data were used. Hence the need to recycle the SAHM model with the XP data to gain a more efficient facility.

Another reason for the trial-and-error approach is the versatility of the XP-SWMM model. Any basin shape and configuration and a variety of outfall facilities can be quickly evaluated for compliance. In addition, the 100-year storm cannot be modeled within the SAHM model.

BASIN DETAILS

The stage-storage of each basin and the corresponding outfall facilities have been coordinated to meet water quality and hydromodification criteria as well as attenuation requirements along the creeks and downstream of the confluence of MCSB and Kite Creek.

Please note that the actual configuration can be modified without further analysis as long as the stage-storage-discharge relation remains similar to what is shown. If significant changes are proposed, then additional modeling may be needed to evaluate basin performance and downstream impacts. The entire basin may also be moved vertically, dependent on grading.

A basin might be reconfigured when the land use plan shows a larger footprint. That would accommodate a shallower basin with a larger, more freeform footprint. Conversely, a deeper basin may be desired. Either change could affect the size of the orifice, as well as the configuration and elevation of the weir. Any revised configuration or footprint would be addressed when there is more detailed development information.

Table 3 provides key parameters of each basin. The basins typically have an eight-foot depth for the permanent pool and an operating depth of 4 to 5 feet above the permanent pool. The top elevations of the basins are generally 1+ foot above the 100-year water surface elevation. An access road around each basin has not been included as part of the determination of needed basin area because there are too many unknowns at this time. However, the basin design will include access that is acceptable to the city. The additional area needed for a perimeter road would be in the range of up to one-half acre in addition to the basin areas shown in the summary table.

Detention/WQ basins and open channels shall be designed per Section I.8.5 of the SunCreek Specific Plan and per Section 7.4 and Section 8 of the City of Rancho Cordova Open Space Guidelines, dated December 2, 2013. Per the Open Space guidelines, consideration shall be given to designing detention basins to look natural with natural landscaping, to have gentle side-

slopes, and to have terraced areas with a variety of plants and trees. Where feasible, basin perimeters shall incorporate trails and bike paths. These natural features shall not interfere with normal function and maintenance.

Table 3. Basin Parameters and Hydraulic Information

Parameter	Basin ID				
	West	East	PG	NS	SS
Tributary Area (ac)	104.2	46.0	14.7	50.2	95.7
Land Use Percent Imperv (%)	52.9	42.4	53.9	54.6	50.3
Basin Surface Area (ac)	4.4	3.1	0.8	2.0	5.6
Req WQ Vol (Fig E-3) 48h(in)	0.38	0.32	0.39	0.40	0.37
Reg WQ Vol (af)	3.3	1.2	na	na	3.0
PP Surface area (ac)	1.4	1.5	na	na	1.0
Perm Pool (PP) Vol (af)	8.0	8.4	na	na	5.0
SAHM Trib Area (ac)	104.2	46.0	14.7	50.2	78.2
Top Elevation	175	188	183	187	180
Permanent Pool Elev (ft)	168	184	Dry	Dry	170
Bottom Elev. (ft)	160	176	176	181	162
Q2 In (cfs)	67	30	12	34	47
Q2 Out (cfs)	17	6	1.2	10	5
Q2 WSE (ft)	170.7	185.5	178.7	183.5	173.3
Q10 In (cfs)	116	61	24	70	82
Q10 Out (cfs)	54	26	1.6	27	18
Q10 WSE (ft)	172.7	185.9	180.0	184.4	174.5
Q100 In (cfs)	157	77	34	87	118
Q100 Out (cfs)	105	47	2.1	58	50
Q100 WSE (ft)	173.6	186.5	181.8	185.3	175.7
2-yr Storm WSE (ft) @ 24 hrs	170.2	185	177.4	182.0	172.8
Q100 WSE (ft) after 2yr, 24-hr	173.6	186.5	181.8	185.3	175.9

The proposed drainage facilities are shown on folded **Maps 1 and 2**. Hydraulic information and basin stage-area-volume information, taken from the XP model output, is provided in **Attachment C.** Copies of the SAHM output are provided at **Attachment D**.

The outflow facilities for the West, NS, and SS basins consisted of one orifice and one weir. The outflow for the PG&E basin is a single orifice. The outflow facility for the East Basin is a compound weir. **Table 4** provides a summary of the outfall facilities at each of the basins.

Table 4. Description of Basin Outfall Facilities

Basin ID	Orifice (in)	Flowline Elev (ft)[a]	Description of Weir	Flowline of Weir (ft)[b]	Comments
West	Rect-0.5'h x 1.7'w	168	One foot wide at base (elev 170) and 6 ft wide at top at elev 175.	170	The weir is also considered the emergency spillway.
East	na	na	Compound weir, 0.6' BW @ elev 184, then 1.5' wide @elev 185.0, then 2.5'w @elev 185.01, and then sloping to 6' wide @ elev 188 (top).	184	The weir is also considered the emergency spillway.
PGE	6-in round	176	4' standpipe that will act as emergency weir. Open top will have Cooley type access cover.	182	Outfall pipe to be 12-in dia. Orifice connected to 4' standpipe.
NS	12" round	181	Weir: 1' w at base (elev 182.5), then 5.5' w at top at elev 187.	181	The weir is also the emergency spillway.
SS	12" round	170	Weir: 1' w at base (elev 172.5), then 4.0' w at top at elev 176.5.	172.5	The weir is also the emergency spillway.

a: All orifices assumed to be set 8 feet above basin bottom.

b: All weirs assumed to be set 10 feet above basin bottom unless otherwise noted.

Figures 2 and 3 provide a conceptual view of the basin configuration and proposed outfall facilities. These were taken from the SunCreek Drainage Study but are representative of the facilities planned for The Ranch.

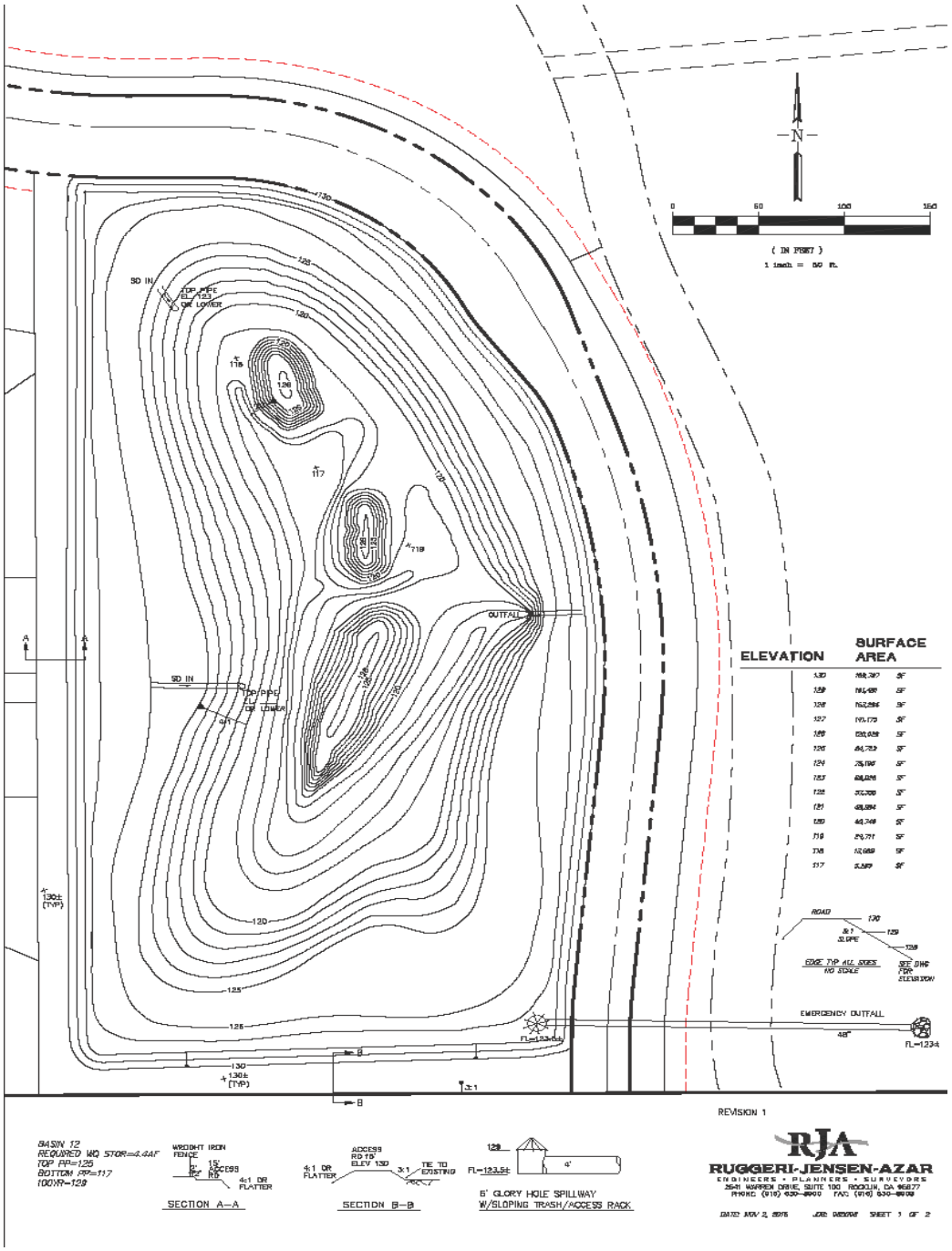


Figure 2. Preliminary Layout of Basin 9

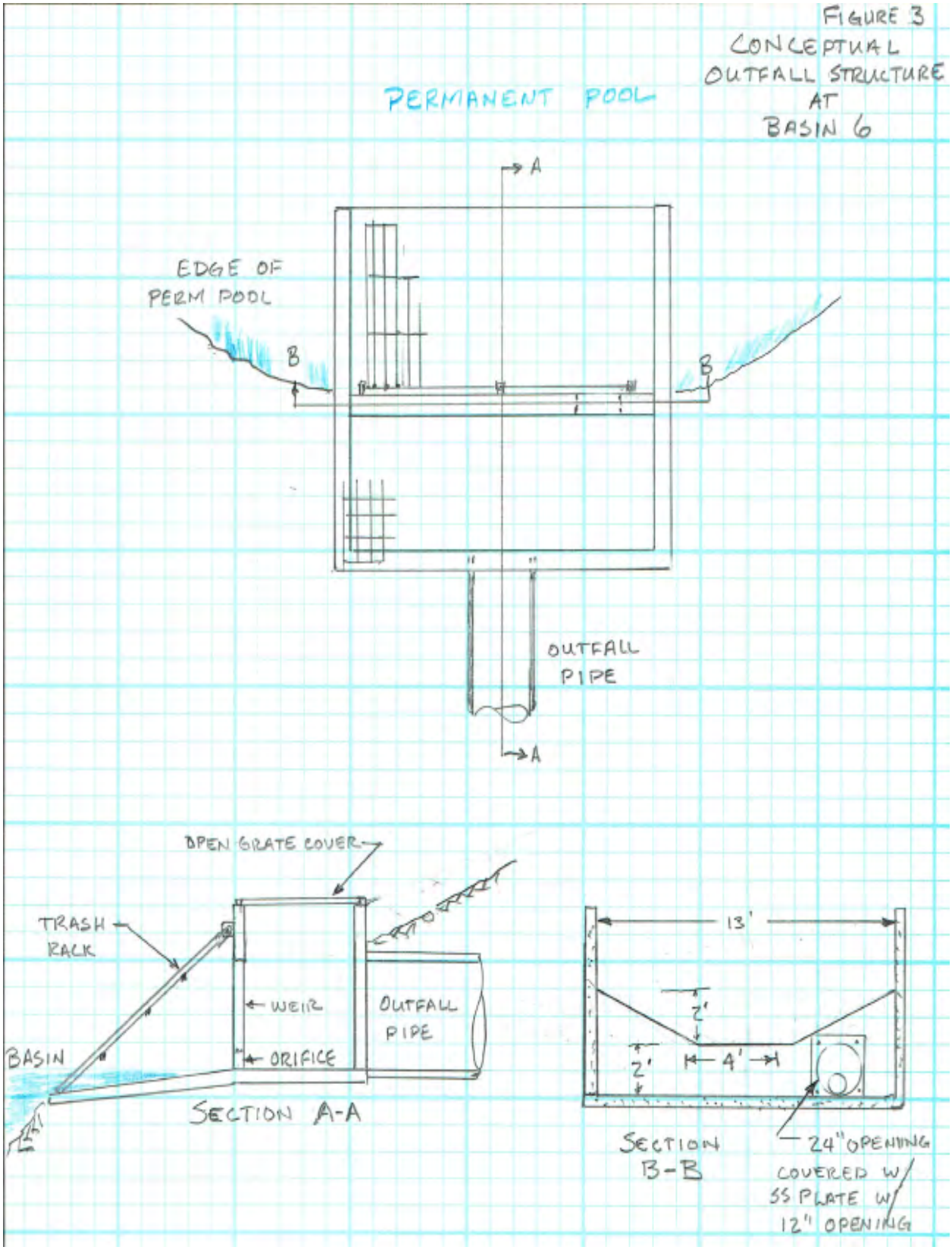


Figure 3. Preliminary Outfall from Basin 4, Typical of All Outfalls

OUTFALLS

The basins are sited up to several hundred feet from the channel with varied topography between the basin and the channel flow line. Releasing the basin outflow at the edge of the environmental corridor would generate erosion as a new channel would be cut into the native soils. This erosion is contrary to the purpose of attenuating peak flows.

For this study, it is recommended that an outfall pipe or armored channel be constructed so that runoff from the basins is released into or very near the stream flowline or thalweg. In addition, erosion protection at the outfalls is also recommended.

To minimize the disturbances within the preservation area, outfalls will be constructed as part of crossings where possible. **Table 5** provides a summary of existing and design flows and provides a preliminary description of the proposed outfalls.

Table 5. Locations of Basin Outfalls

Basin ID	Location and Description of Outfall
East	Outfall piped from the basin along Rancho Cordova Parkway right-of way and discharged into MCS at the constructed channel east of the parkway.
West	Discharged directly into MCS or piped southwest and discharged into MCS at the Chrysanthy Boulevard crossing.
PG	Discharged directly into MCS. Preliminary location west of Basin.
NS	Discharged to MCS upstream of Chrysanthy crossing
SS	Outfall piped to Kite Creek at the same location of the SunCreek Basin 2 outfall. The two or combined structure will become the headwaters of Kite Creek when that area of SunCreek is developed.

EXISTING AND POST-PROJECT FLOWS

Overview

A review comment from the first submittal was to include an analysis of potential impacts to upstream, adjacent, and downstream properties.

An XP model was used to evaluate the potential impacts along Morrison Creek South Branch (MCSB). To set up the analysis, the following steps were completed for the "existing conditions" model:

- Recreated the numerical hydrograph shown on Figure 4 provided by the Wood Rogers report entitled *Drainage Study for The Preserve at Sunridge*. The hydrograph with a peak flow of 678 cfs for the 100-year flow was applied at cross-section 96+00 near the upstream boundary of The Ranch.

- Forty cross-sections of the South Branch Morrison Creek were taken from available topographic information.
- Three existing sheds within The Ranch corridor and tributary to MCSB were then added to the existing conditions model.

The Post-Project (PP) information was then added to the model as a Scenario. Key components of the PP scenario were as follows:

- The inflow hydrograph at the upstream end of MCSB was not changed.
- The natural tributary subsheds along MCSB were turned off.
- The four tributary sheds (WB, PG, EB, and NS) that represent The Ranch development were added.
- The local remaining natural subsheds along MCSB were added at five locations.
- Encroachment along the MCSB cross-sections was added per the proposed development.
- The proposed Contech arch at the Crysanthy Boulevard crossing was added.

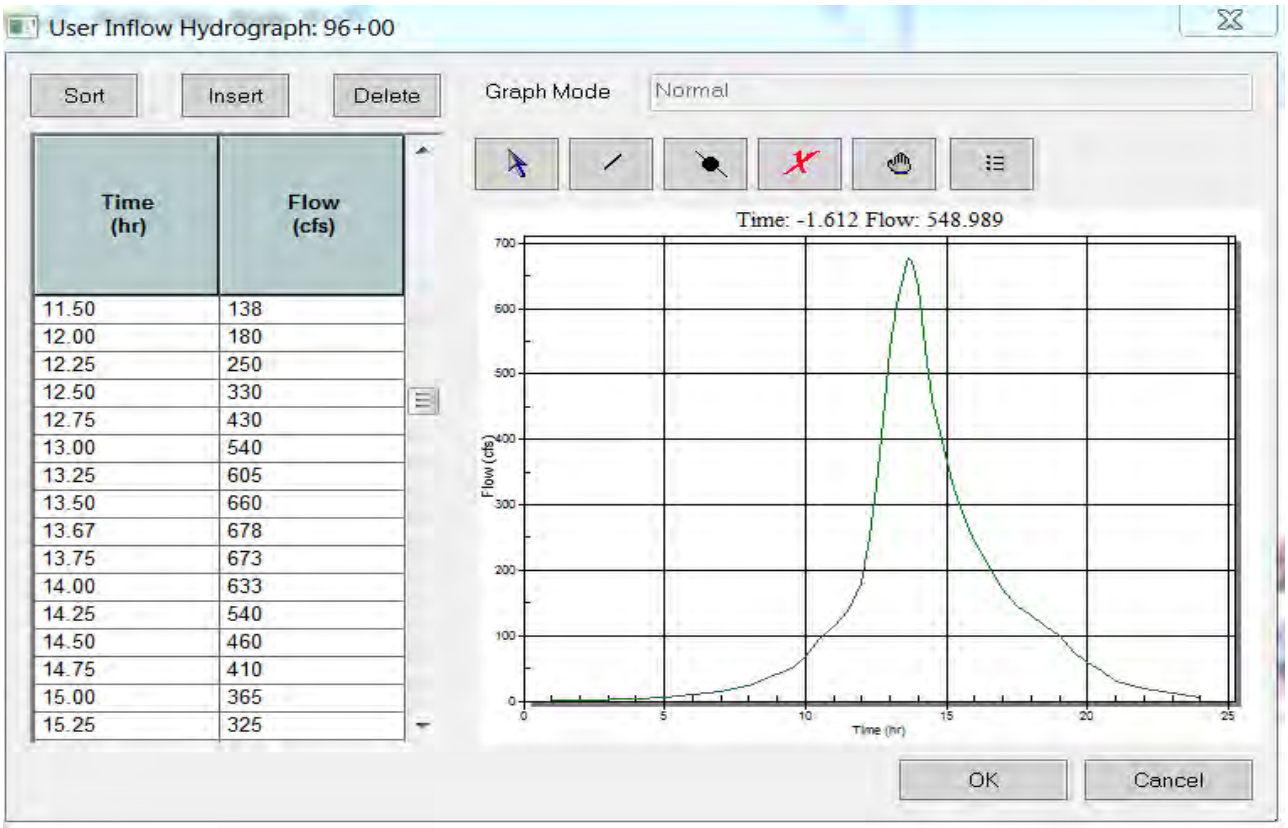


Figure 4. Inflow Hydrograph of Morrison Creek South Branch into The Ranch

Upstream Impacts

There is encroachment that will raise the water level within The Ranch property. However, the backwater effect is insignificant (0.02 ft) at Section 96+00 which is near the upstream property line. The impact is less at the property line.

Adjacent Property Impacts

Both the flow and water level along MCSB varied because of the changed conditions and the slight changes where local flows were added to the model. There are impacts along MCS where there will be encroachment from development. The maximum changes were + 15 cfs and -18 cfs. Maximum water elevation changes were +0.03 and -0.48 feet. The Ranch development is on both sides of the South Branch of Morrison Creek, so no other properties are affected. It is the responsibility of developers to protect their own property and is part of the design considerations.

Downstream Impacts

At the downstream end, downstream of Rancho Cordova Parkway, the model results indicate a slight decrease in flow (15 cfs) and a slight decrease of the water level (-0.06 ft) for post-project conditions compared to existing conditions. **Figures 5** and **6** show the flows and water surface elevations just downstream of Rancho Cordova Parkway. **Attachment E** provides additional modeling details for the comparative analysis. The cross-section locations are shown on **Maps 1** and **2**. **Attachment E** provides more detailed information from the comparative analysis.

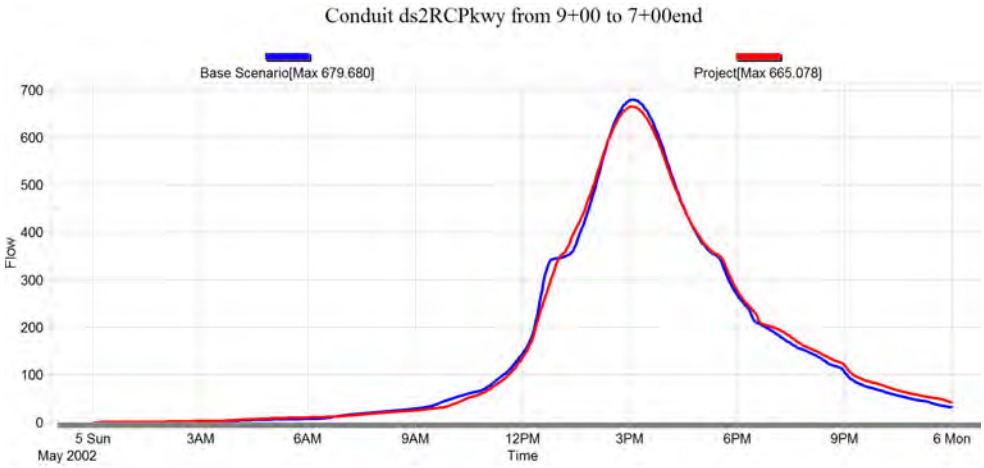


Figure 5. Existing and Post-project 100-yr Flows DS of Rancho Cordova Parkway

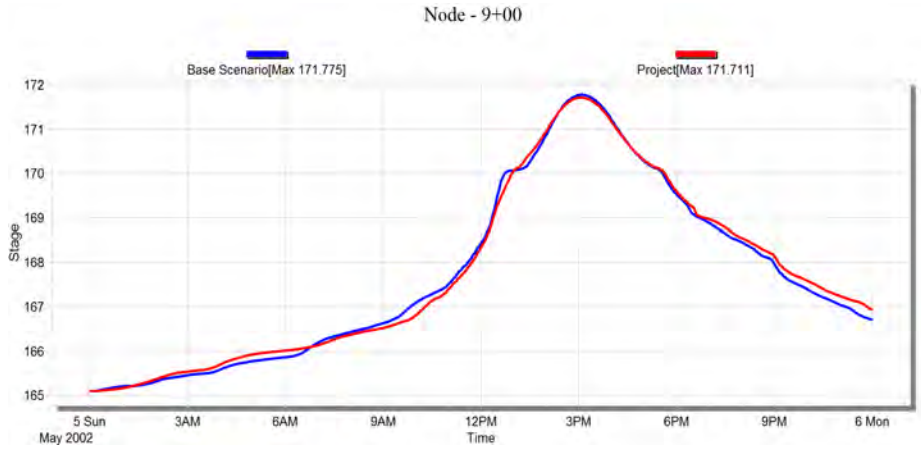


Figure 5. Existing and Post-project 100-yr Water Levels DS of Rancho Cordova Parkway

PDF of appendices has been requested from project applicant to include with drainage study

APPENDIX J.2

Level 1 Sewer Study

THE RANCH
LEVEL 1 SEWER STUDY

1st Submittal: September 2018

Prepared Under The Direction Of:

DRAFT

TABLE OF CONTENTS

EXECUTIVE SUMMARY 1

INTRODUCTION 1

VICINITY MAP

DESIGN 1

SEWER FLOW INFORMATION 2

SEWER ALIGNMENTS AND FACILITIES 2

CONCLUSIONS 2

APPENDIX A
- TABLE A-1 SEWER DESIGN SUMMARY SPREADSHEET

ATTACHMENTS
- LOCATION MAP
- LOCATION MAP WITH TOPOGRAPHY
- SITE PLAN – THE RANCH
- SMALL LOT TENTATIVE MAP – THE RANCH
- SEWER SHED MAP –THE RANCH
- SRCSD SERVICE AREA
- SASD SERVICE AREA
- AJ SUNRISE DOUGLAS TRUNK SHED
- FIGURE 6-1 - TRUNK SHEDS MAP - 2010 SASD SYSTEM CAPACITY PLAN
- BR EAST RANCH TRUNK SHED – 2015 AMENDMENT

EXECUTIVE SUMMARY

The purpose of this Level 1 Sewer Study is to identify trunk main sewer facilities for proposed The Ranch Special Planning Area project. This study will demonstrate the ability of the proposed gravity sewers to serve The Ranch and offsite areas from the east.

The Ranch SPA encompasses 530.06 acres in the City of Rancho Cordova. The project is situated at eastern terminus of Chrysanthy Boulevard on the easterly side of Rancho Cordova Parkway, and approximately one half mile to the south of Douglas Boulevard. The proposed SPA development consists of mixed land uses and densities. There are proposed lots of low and medium density residential, private and public parks, private recreation center, private and public landscape lots, open spaces, public protected areas, commercial, and water quality/detention basins. Protected areas and a portion of roadway adjacent to protected areas, not subject to future development, account for 227.21 acres of the gross project area. The net developable area is 302.85 acres. The project is planned to be constructed in several phases.

Proposed sewer system improvements will serve The Ranch project needs, as well as the proposed Arista Del Sol to the east. Development of The Ranch will result in 1817 ESDs resulting in PWWF of 1.35 mgd. The upstream project to the east, Arista Del Sol, is 243.7 acres. ADS will result in 1462 ESD's and 1.14 mgd. Therefore, the total ESD's and PWWF are 3279 ESD's and 2.49 mgd exiting the site at Ranch Cordova Parkway.

The proposed trunk main will exit into existing 24" sewer line stubbed at the intersection of Rancho Cordova Parkway and Chrysanthy Boulevard. The existing 24" sewer line discharges into Aerojet Interceptor 1B (36" trunk main) flowing westerly into SASD facility S-132 lift station. The SASD system capacity plan shows The Ranch will sewer to the west.

Interim facilities or pump station are not expected to be required for The Ranch SPA.

INTRODUCTION

Level of Study - The Ranch sewer study is a Level 1 report which focuses on the design of Major Trunk and sewer facilities serving The Ranch SPA and potential upstream sewer sheds.

Location - The Ranch is located in Rancho Cordova, east of Rancho Cordova Parkway, between Douglas Blvd, Kiefer Road, and Grant Line Road. See the Vicinity Map, Figure 1.

Topography – Lower Morrison Creek South traverses The Ranch, generally along a southwesterly flow path, joined by lesser tributary channels entering the site on the northern and eastern boundaries. Existing site topography is undulating, ranging from approximately 168.5 feet to 200 feet in elevation (NGVD 1929). Adjacent property to north and west are developed residential while the properties to the south and east are similar rolling agricultural land uses. Adjacent offsite area may drain into the natural channel network.

Project Description - The Ranch is a residential subdivision consisting of 1374 single family lots, neighborhood park sites, and open space lots. Proposed site grading enables gravity sewer service throughout the project. The proposed in-tract collection system will discharge at a single point into off-site sewer in Rancho Cordova Parkway at the location shown on the Sewer Study Map.

Land Use and Zoning – The current land use is vacant, agricultural grazing land. The existing zoning is AG-80. Proposed zoning is Special Planning Area Current zoning consisting of General Plan uses (LDR, MDR, RMU, CMU, P/QP, P/OS, NR). The gross project area is 530.06 acres; protected areas/adjacent roadway comprises of 227.21 acres.

DESIGN

Assumptions – The Ranch sewer study is premised upon the following assumptions:

- There will be no future connections into the proposed on-site sewer system. Property east of the project will sewer to the west through future Chrysanthy. Property south of the project will swer to the south. Adjacent parcels north and west of The Ranch are already sewered or will remain as open space.
- There is adequate capacity in existing, downstream sewer facilities. (Please see attached email from SASD regarding downstream Aerojet 2 Interceptor has capacity without surcharge conditions as verified by SASD and SCRSD. (This section is being verified by SASD at time of draft report)
- Groundwater will be confirmed through future Geotechnical studies for the project. Recent information from monitoring wells in the area suggests groundwater is 140 below ground surface.

Approach – Design of the proposed The Ranch sewer system followed the sequence described as follows.

- Sewer sheds reflect project layout shown on the accompanying Sewer Shed Map.
- Design flows, summarized in Table A-1, Appendix A, adhere to SASD Design Standards, dated July 24, 2013.
- Pipe sizes and slopes meet applicable design criteria.

Design Criteria - Design of the proposed The Ranch sewer system is based on the following criteria.

- Sewer flow is calculated on the basis of 6 ESD (Equivalent Single-Family Dwelling) per acre, or the actual count within a shed, whichever is greater.
- Park areas use a design flow of 6 ESD per acre.
- Design flows are computed using formulas from Section 201.2.2 of SASD standards and specifications:
    - PWWF (mgd) = ADWF *PF +I/I
    - ADWF (mgd) = (310 GPD/ESD)*(ESD/ac)*(ac)/1,000,000
    - PF = 3.5 - 1.8*Q^0.05, where Q=ADWF, PF= 1.2 minimum
    - I/I = 1,400 gpd/ac (new pipeline)
- Design of gravity sewers adheres to the following, from Section 203 of SASD standards and specifications:
    - The minimum pipe size (diameter) is 8 inches.
    - The minimum velocity is 2 fps when the pipe is ½ full or full.
    - The ‘n’ value is 0.013.
    - The minimum slope for a collector serving fewer than 6 ESDs is 0.007.
    - The minimum slope for an 8” sewer is 0.0035.

SEWER FLOW INFORMATION

On-site flow from The Ranch SPA totals 1817 ESDs, resulting in PWWF of 1.35 mgd. There would be off-site contribution from proposed Arista Del Sol project of approximately 1462 ESD’s and 1.14mgd.

SEWER ALIGNMENT & FACILITIES

- No interim facilities are required for The Ranch project. All pipes are sized for ultimate PWWF.
- Ultimate facilities consist of the following:
    - 8-inch in-tract gravity sewer pipe
    - 15-inch to 21-inch truck main sewer pipe in Chrysanthy Blvd
    - 24-inch offsite gravity sewer located in Rancho Cordova Parkway, west from the project entry to the existing manhole in Rancho Cordova Parkway as shown.

CONCLUSIONS

The Level 1 Sewer Study for The Ranch demonstrates the ability of the proposed gravity system to serve the project. System components are sized for ultimate conditions. According to SASD staff, there is adequate capacity in existing downstream sewer facilities to serve project needs.

APPENDIX A

TABLE A-1 SEWER DESIGN SUMMARY SPREADSHEET

THE RANCH SEWER DESIGN SUMMARY

START NODE	STOP NODE	LAND USE					TOTALS		I/I[1/] (mgd)	ADWF[2/] (mgd)	PF[3/]	PDWF[4/] (mgd)	PWWF[5/] (mgd)	PWWF[5/] (cfs)	PIPE DATA				US MAN HOLE DEPTH (FT)	V @ PWWF[6/] (fps)
		LAND USE	AREA (AC)	ESDs @ 6 ESD/AC	ACTUAL ESDs	MAX ESDs	AREA (AC)	CUM ESDs							DIA (in)	S (ft/ft)	Capacity @ S (cfs)	Capacity @ S (mgd)		
ADS1	A	R	243.7	1462	1462	1462	243.7	1462	0.3412	0.4532	1.77	0.8021	1.1433	1.7690	15	0.0018	2.74	1.77	29	2.38
A	B	R	44	264	215	264	287.7	1726	0.4028	0.5351	1.76	0.9393	1.3420	2.0764	15	0.0018	2.74	1.77	29	2.46
B	C	R	100.18	601	473	601	387.88	2327	0.5430	0.7214	1.73	1.2474	1.7904	2.7701	18	0.0014	3.93	2.54	32	2.41
C	D	R	39.72	238	205	238	427.6	2565	0.5986	0.7952	1.72	1.3681	1.9667	3.0429	18	0.0014	3.93	2.54	40	2.46
D	E	R	43.94	264	134	264	471.54	2829	0.6602	0.8770	1.71	1.5012	2.1614	3.3441	18	0.0014	3.93	2.54	38	2.49
E	F	R	72.79	437	347	437	544.33	3266	0.7621	1.0125	1.70	1.7201	2.4821	3.8404	21	0.0012	5.49	3.55	33.5	2.47
F	POC	R	2.22	13	0	13	546.55	3279	0.7652	1.0165	1.70	1.7265	2.4917	3.8552	24					
			546.55	3279	2836	3266	546.55		0.7652											

[1/] 1400 gpd/ac

[2/] 310 gpd/ESD * ESD/ac * A

[3/] 3.5-1.8*(Q^0.05) where Q is ADWF

[4/] ADWF * PF

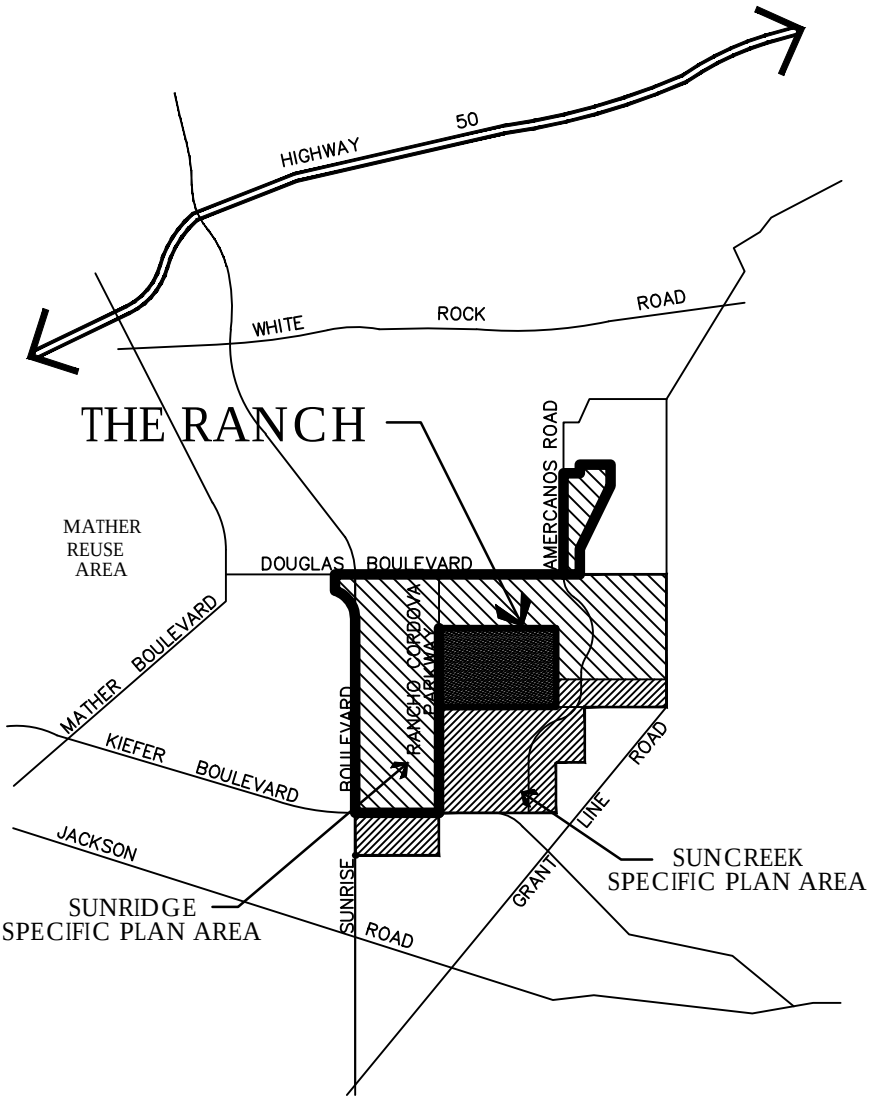
[5/] ADWF * PF + I/I

[6/] see Flowmaster computations

ATTACHMENTS

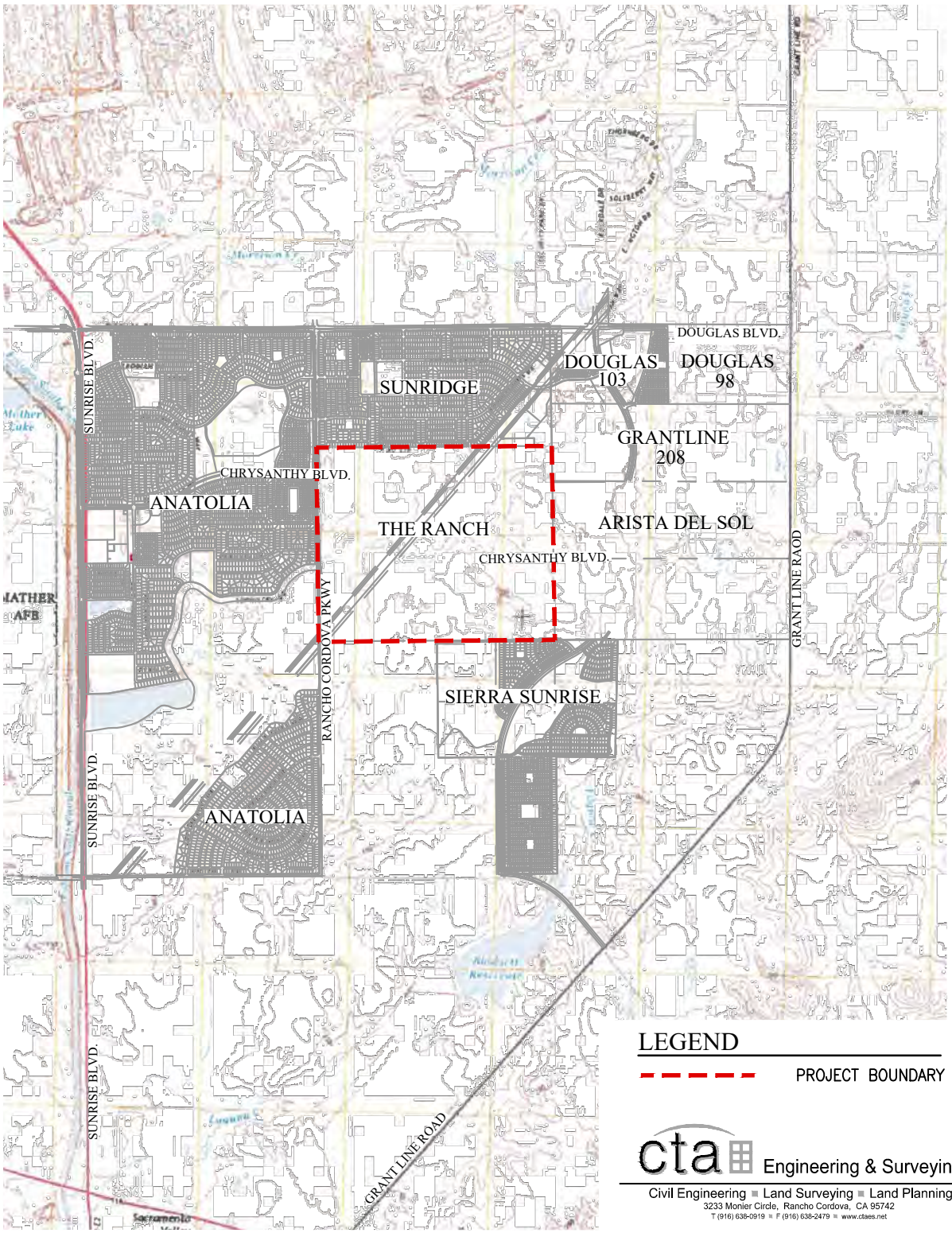
LOCATION MAP
LOCATION MAP WITH TOPOGRAPHY
SITE PLAN – THE RANCH
SMALL LOT TENTATIVE MAP – THE RANCH
PRELIMINARY GRADING AND DRAINAGE PLAN – THE RANCH
SEWER SHED MAP –THE RANCH
SRCSD SERVICE AREA
SASD SERVICE AREA
AJ SUNRISE DOUGLAS TRUNK SHED
FIGURE 6-1 - TRUNK SHEDS MAP - 2010 SASD SYSTEM CAPACITY PLAN
BR EAST RANCH TRUNK SHED – 2015 AMENDMENT

LOCATION MAP



THE RANCH
LOCATION MAP

RANCHO CORDOVA, CALIFORNIA
NOT TO SCALE AUGUST, 2018



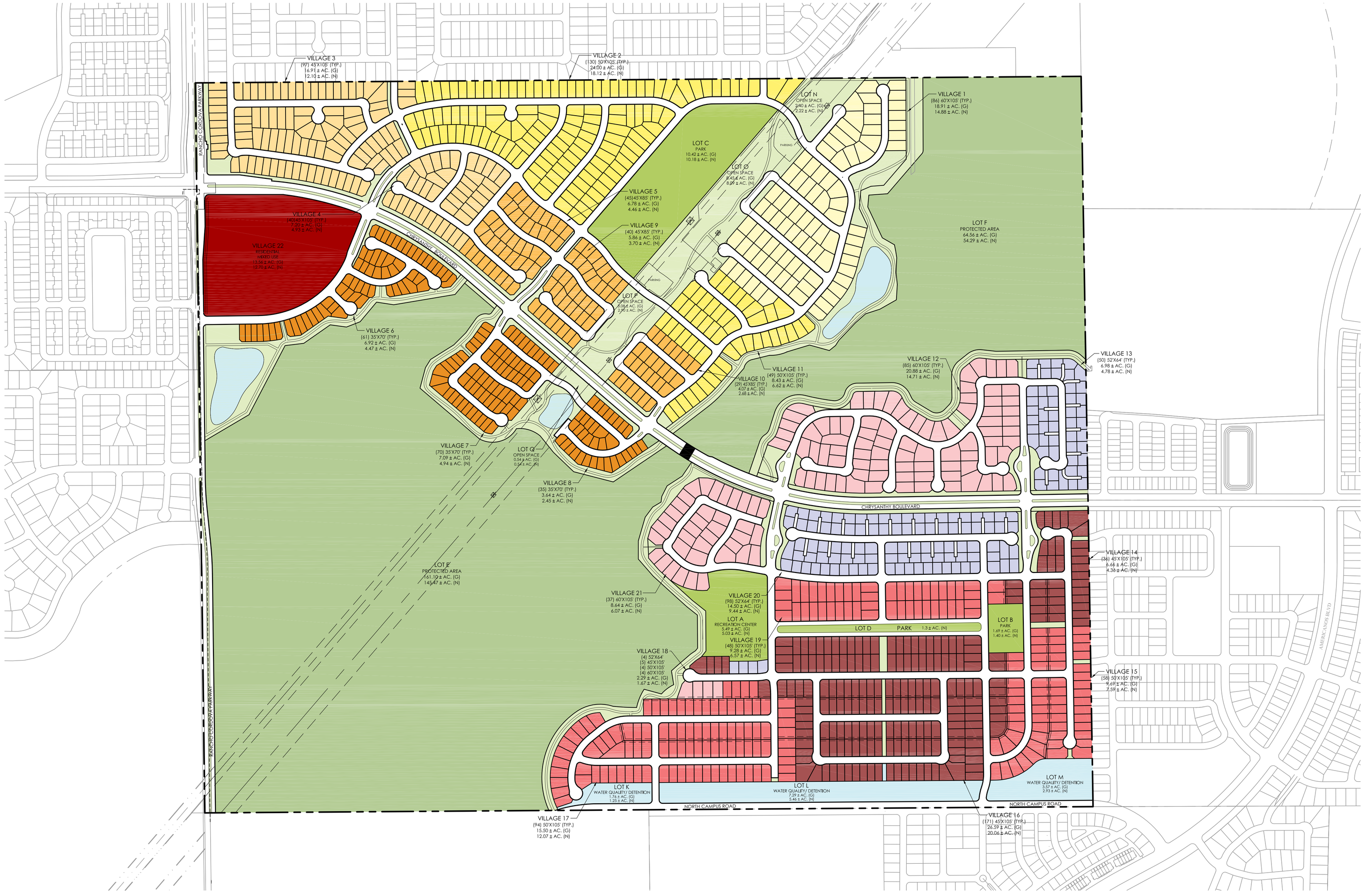
cta Engineering & Surveying
Civil Engineering ■ Land Surveying ■ Land Planning
3233 Monier Circle, Rancho Cordova, CA 95742
T (916) 638-0919 ■ F (916) 638-2479 ■ www.ctaes.net

SITE PLAN

THE RANCH

CITY OF RANCHO CORDOVA, CALIFORNIA

JULY 24, 2018



LAND USE SUMMARY

LAND USE	DWELLING UNITS
MARKET RATE	
60' x 105' (TYP.)	86
50' x 105' (TYP.)	179
45' x 105' (TYP.)	137
45' x 85' (TYP.)	114
36' x 70' (TYP.)	166
SUBTOTAL	682
ACTIVE ADULT	
60' x 105' (TYP.)	127
50' x 105' (TYP.)	203
45' x 105' (TYP.)	212
WINTER (4-PACK)	152
SUBTOTAL	694
TOTAL	1,376

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS
3301 C St, Bldg. 100-B Tel 916.341.7760
Sacramento, CA 95816 Fax 916.341.7767

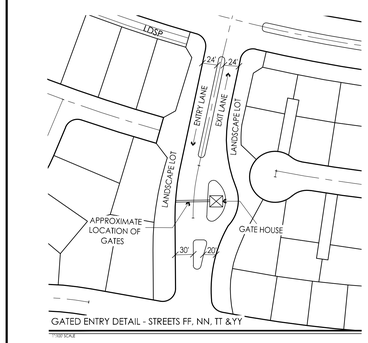
J:\1000-s\1277_TheRanch\TheRanch-DA\Planning\Exhibits\Tentative Map - PD\SitePlan-TheRanch.dwg 7/24/2018 9:27 AM Katie Caradec

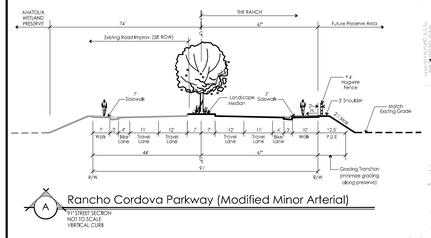
SMALL LOT TENTATIVE SUBDIVISION MAP

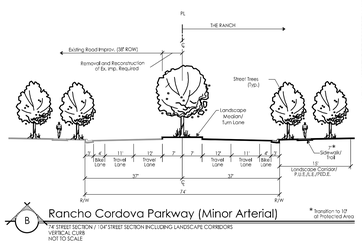
THE RANCH

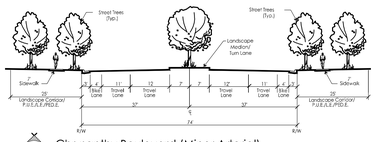
CITY OF RANCHO CORDOVA, CALIFORNIA

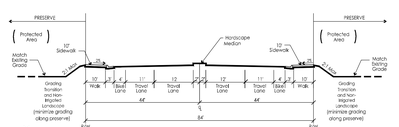
JUNE 2018
(REVISED: JULY 2018)

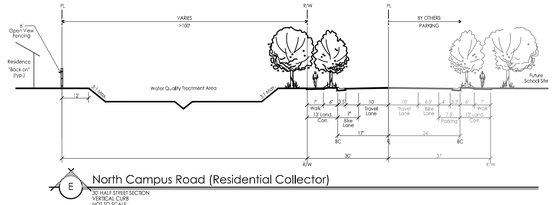


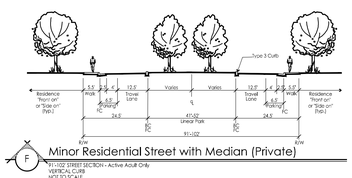


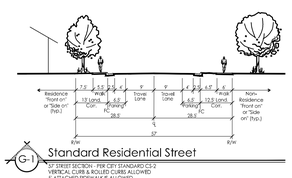


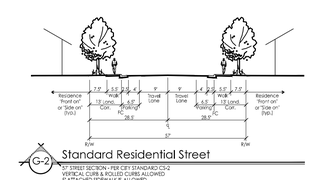


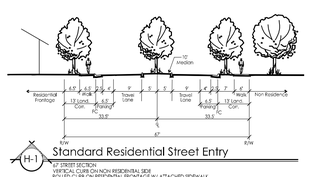


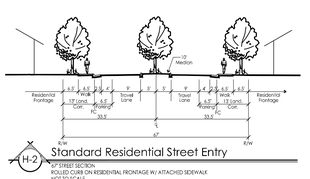


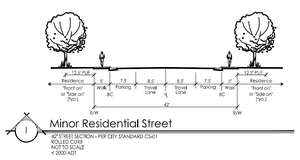


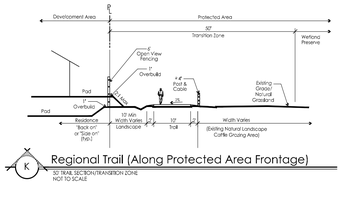


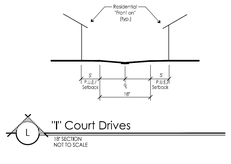


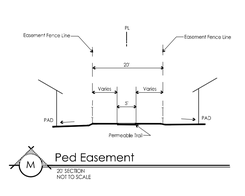


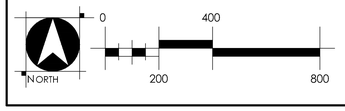




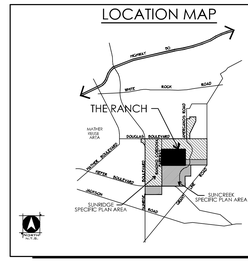








LOCATION MAP



PROJECT NOTES

OWNER/APPLICANT
K. HOVNANIAN HOMES, NORTHERN INC.
3721 DOUGLAS BOULEVARD, SUITE 150
ROSEVILLE, CA 95661
CONTACT: OLGA SCIORELLI
PHONE: (916) 945-5362

PLANNER
WOOD RODGERS INC.
3301 "C" STREET, BLDG. 100-B
SACRAMENTO, CA 95816
CONTACT: PAUL MEUSER
PHONE: (916) 341-7760

ENGINEER/SURVEYOR
CTA ENGINEERING AND SURVEYING
3233 MONIER CIRCLE
RANCHO CORDOVA, CA 95742
CONTACT: TOM CASSERA
PHONE: (916) 638-0919

ASSESSORS PARCEL NUMBERS
067-0040-008

AREA
530.1± ACRES GROSS

NUMBER OF LOTS/PARCELS
1,377 SINGLE FAMILY LOTS
1 RESIDENTIAL MIXED USE LOT
1 RECREATION CENTER LOT
3 PARK LOTS
2 PROTECTED AREA LOTS
5 PROTECTED AREA/ LANDSCAPE LOTS
3 WATER QUALITY/ DETENTION BASIN LOTS
5 OPEN SPACE LOTS
33 PUBLIC LANDSCAPE LOTS
21 PRIVATE LANDSCAPE LOTS
26 PRIVATE DRIVE LOTS

EXISTING USE
VACANT

EXISTING GENERAL PLAN
URBAN DEVELOPMENT AREA

PROPOSED GENERAL PLAN
LDR, MDR, RMU, CMU, P/QP, P/OS, NR

EXISTING ZONING
AG-80

PROPOSED ZONING
SPECIAL PLANNING AREA

PUBLIC SERVICES & FACILITY PROVIDERS

IMPROVEMENTS:	CITY OF RANCHO CORDOVA
WATER:	SACRAMENTO COUNTY WATER
SEWER:	SACRAMENTO AREA SEWER DISTRICT
DRAINAGE:	CITY OF RANCHO CORDOVA
ELECTRICITY:	S.M.U.D.
GAS:	PACIFIC GAS & ELECTRIC
TELEPHONE:	AT&T
SCHOOL DISTRICT:	ELK GROVE UNIFIED SCHOOL DISTRICT
FIRE DISTRICT:	SACRAMENTO METRO FIRE DISTRICT
PARK DISTRICT:	CORDOVA RECREATION & PARK DISTRICT

NOTES:
1. SUBDIVIDER(S) RESERVES THE RIGHT TO FILE MULTIPLE MAPS PURSUANT TO SECTION 66456.1 OF THE SUBDIVISION MAP ACT.
2. THIS IS AN APPLICATION FOR A DEVELOPMENT PERMIT.
3. A 12.5 FOOT PUBLIC UTILITY EASEMENT WILL BE LOCATED ADJACENT TO ALL RIGHTS OF WAY EXCEPT AS APPROVED BY THE CITY ENGINEER. THIS APPLICATION REQUESTS A 5' P.U.E./SETBACK FOR 'T' COURT PRODUCT (PARCEL T).
4. PARCEL (LARGE LOT) NUMBERING IS FOR IDENTIFICATION PURPOSES ONLY AND DOES NOT INDICATE PHASING ORDER OF DEVELOPMENT. ULTIMATE DEVELOPMENT PHASING SHALL BE ORDERLY AND WILL BE DETERMINED AT FINAL MAP AND/OR IMPROVEMENT PLAN STAGE.
5. THIS APPLICATION ALSO SEEKS A GENERAL PLAN AMENDMENT, REZONE, AND SPECIAL DEVELOPMENT PERMIT.
6. ALL EXISTING STRUCTURES TO BE REMOVED AND ALL EXISTING WELLS TO BE ABANDONED, ADJUSTED(BY OTHERS) AND/OR RELOCATED.
7. THE AERIAL TOPOGRAPHY SHOWN HEREON WAS FLOWN IN NOVEMBER 2003.
8. THIS EXHIBIT IS FOR TENTATIVE MAP PURPOSES ONLY. ALL SITE AREAS TO BE VERIFIED PRIOR TO FINAL MAP.
9. PARK FEES FOR ALL RMU LOTS WILL BE DEFERRED UNTIL ACTUAL SITE DEVELOPMENT PERMIT.
10. NON-STANDARD ELBOW. NO ON-STREET PARKING ALLOWED ON KNUCKLE.

LAND USE SUMMARY

PARCEL/ LOT NUMBER	GENERAL PLAN DESIGNATION	LAND USE (LOT SIZE)	GROSS ACRES	NET ACRES	DWELLING UNITS	GROSS DENSITY
TRADITIONAL SINGLE-FAMILY RESIDENTIAL						
VILLAGE 1	LDR (2.1-6.0 DU/AC)	TRADITIONAL S.F. RESIDENTIAL (60X105)	19.59	14.1	86	4.4
VILLAGE 2	LDR (2.1-6.0 DU/AC)	TRADITIONAL S.F. RESIDENTIAL (50X105)	23.48	18.25	130	5.5
VILLAGE 3	LDR (2.1-6.0 DU/AC)	TRADITIONAL S.F. RESIDENTIAL (45X105)	16.95	12.14	97	5.7
VILLAGE 4	LDR (2.1-6.0 DU/AC)	TRADITIONAL S.F. RESIDENTIAL (45X105)	7.26	5.11	41	5.6
VILLAGE 5	MDR (6.1-18.0 DU/AC)	TRADITIONAL S.F. RESIDENTIAL (45X85)	6.66	4.51	45	6.8
VILLAGE 6	MDR (6.1-18.0 DU/AC)	TRADITIONAL S.F. RESIDENTIAL (35X70)	6.96	4.68	61	8.8
VILLAGE 7	MDR (6.1-18.0 DU/AC)	TRADITIONAL S.F. RESIDENTIAL (35X70)	7.09	4.94	70	9.9
VILLAGE 8	MDR (6.1-18.0 DU/AC)	TRADITIONAL S.F. RESIDENTIAL (35X70)	3.64	2.45	35	9.6
VILLAGE 9	MDR (6.1-18.0 DU/AC)	TRADITIONAL S.F. RESIDENTIAL (45X85)	5.85	3.81	40	6.8
VILLAGE 10	MDR (6.1-18.0 DU/AC)	TRADITIONAL S.F. RESIDENTIAL (45X85)	4.07	2.68	29	7.1
VILLAGE 11	LDR (2.1-6.0 DU/AC)	TRADITIONAL S.F. RESIDENTIAL (50X105)	8.60	6.62	49	5.7
SUB-TOTAL			**110.15**	**79.29**	**683**	
ACTIVE ADULT SINGLE-FAMILY RESIDENTIAL						
VILLAGE 12	LDR (2.1-6.0 DU/AC)	ACTIVE ADULT S.F. RESIDENTIAL (60X105)	20.88	14.47	85	4.1
VILLAGE 13	MDR (6.1-18.0 DU/AC)	ACTIVE ADULT S.F. RESIDENTIAL (52X64)	6.98	4.78	50	7.2
VILLAGE 14	LDR (2.1-6.0 DU/AC)	ACTIVE ADULT S.F. RESIDENTIAL (45X105)	6.66	4.36	36	5.4
VILLAGE 15	LDR (6.1-18.0 DU/AC)	ACTIVE ADULT S.F. RESIDENTIAL (45X105)	9.69	7.59	58	6.0
VILLAGE 16	MDR (6.1-18.0 DU/AC)	ACTIVE ADULT S.F. RESIDENTIAL (45X105)	26.59	20.1	171	6.4
VILLAGE 17	MDR (6.1-18.0 DU/AC)	ACTIVE ADULT S.F. RESIDENTIAL (50X105)	15.50	12.07	94	6.1
VILLAGE 18	LDR (2.1-6.0 DU/AC)	ACTIVE ADULT S.F. RESIDENTIAL (VARY)	2.86	2.2	17	5.9
VILLAGE 19	LDR (2.1-6.0 DU/AC)	ACTIVE ADULT S.F. RESIDENTIAL (50X105)	9.28	6.65	48	5.2
VILLAGE 20	MDR (6.1-18.0 DU/AC)	ACTIVE ADULT S.F. RESIDENTIAL (52X64)	14.50	9.44	98	6.8
VILLAGE 21	LDR (2.1-6.0 DU/AC)	ACTIVE ADULT S.F. RESIDENTIAL (60X105)	8.64	6.07	37	4.3
SUB-TOTAL			**121.58**	**87.73**	**694**	
VILLAGE 22	RMU	RESIDENTIAL MIXED USE	**13.77**	**12.90**	-	-
SUB-TOTAL			**13.77**	**12.90**	**-**	**-**
LOT A	P/OS	RECREATION CENTER (PRIVATE)	**4.93**	**4.67**	-	-
LOT B	P/OS	PARK (PRIVATE)	**1.69**	**1.40**	-	-
LOT C	P/OS	PARK (PRIVATE)	**10.96**	**10.78**	-	-
LOT D	P/OS	PARK (PUBLIC)	**1.30**		-	-
LOT E	NR	PROTECTED AREA (PUBLIC)	**160.86**	**145.47**	-	-
LOT F	NR	PROTECTED AREA (PUBLIC)	**64.14**	**54.84**	-	-
LOT G-K	NR	PROTECTED AREA/ LANDSCAPE LOT		**23.90**	-	-
LOT L-N	P/OS	WATER QUALITY/DETENTION	**12.62**	**9.66**	-	-
LOT O-R	P/OS	OPEN SPACE	**14.02**	**13.45**		
S	LDR	OPEN SPACE	-	**1.21**		
LOT T-ZZ	LDR/MDR	PUBLIC LANDSCAPE LOT	-	**6.91**		
LOT AAA-UUU	LDR/MDR	PRIVATE LANDSCAPE LOT	-	**3.46**	-	-
LOT 1-26	MDR	PRIVATE DRIVE	-	**1.01**		
LOT 27 & 28	LDR/MDR & P/OS	PRIVATE RIGHT-OF-WAY	-	**30.70**		
MINOR RIGHT-OF-WAY	LDR/MDR & P/OS	PUBLIC RIGHT-OF-WAY	-	**27.36**	-	-
MAJOR RIGHT-OF-WAY	-	-	**14.04**	**15.34**	-	-
SUB-TOTAL			**284.56**	**350.14**	-	-
TOTAL			**530.06**	**530.06**	**1,377**	**-**

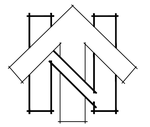
NOTE:
GROSS ACREAGE EXCLUDES RANCHO CORDOVA PARKWAY & CHRYSANTHY BOULEVARD ONLY.
VILLAGE NET ACREAGE EXCLUDES PROTECTED AREA/ LANDSCAPE LOTS, PRIVATE & PUBLIC LANDSCAPE LOTS, PRIVATE DRIVES AND PRIVATE & PUBLIC RIGHT-OF-WAYS.

K Hovnanian

WOOD RODGERS
ENGINEERING • MAPPING • PLANNING • SURVEYING
3301 C St, Bldg. 100-B Tel 916.341.7760
Sacramento, CA 95816 Fax 916.341.7767

THE RANCH
SEWER SHED MAP
CITY OF RANCHO CORDOVA, CALIFORNIA

SCALE: 1"=250' AUGUST, 2018

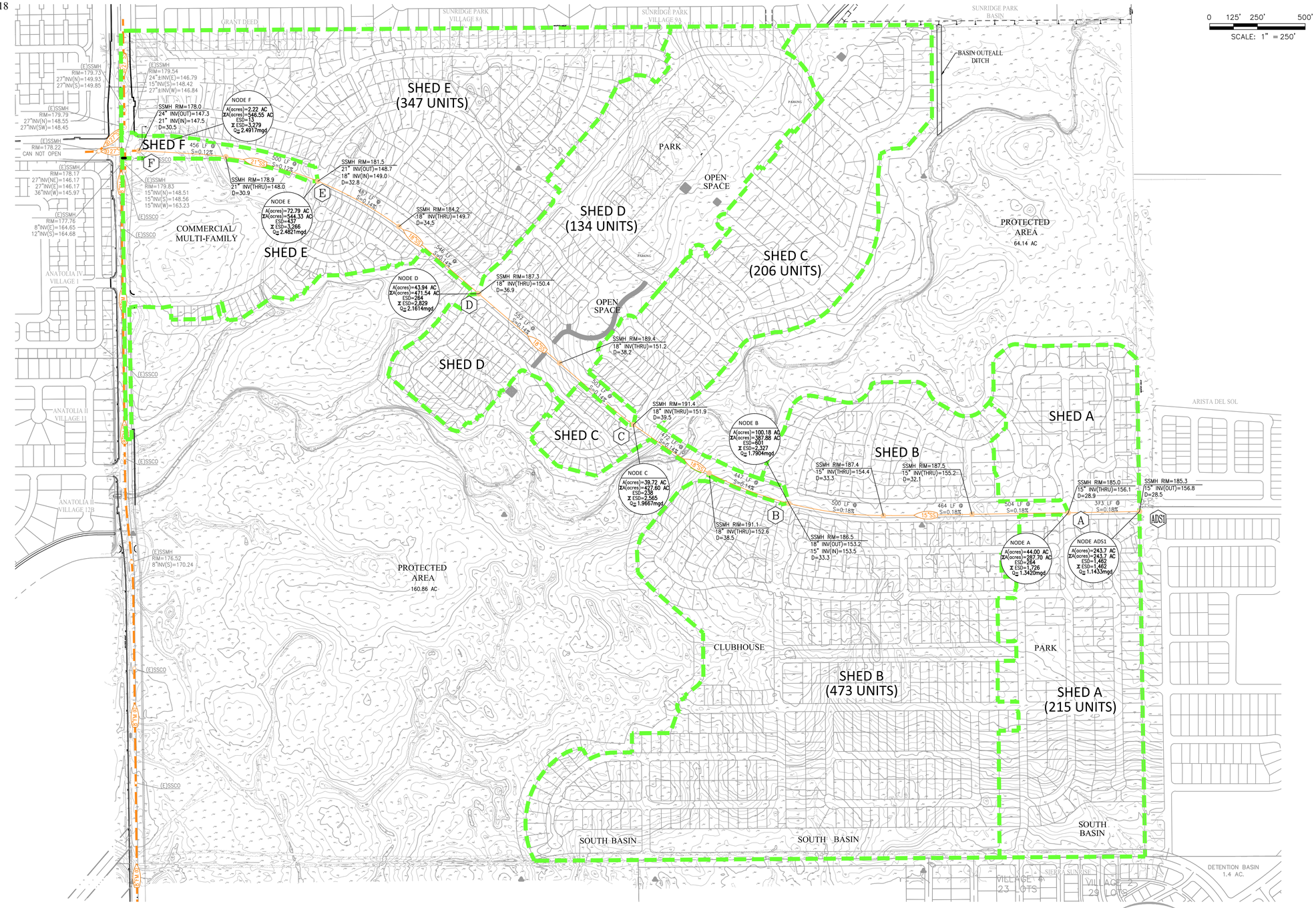


0 125' 250' 500'
SCALE: 1" = 250'

LEGEND

- EXISTING SEWER (10.27"SS)
- PROPOSED SEWER (24"SS)
- SEWER SHED BOUNDARY
- NODE POINT (X)
- BOUNDARY LINE
- PROPERTY LINE

SHED TABLE		
NODE	ACREAGE	UNITS
ADS1	243.70	1462
A	44.00	215
B	100.18	473
C	39.72	206
D	43.94	134
E	72.79	347
F	2.22	0
TOTAL	546.55	2,836



cta Engineering & Surveying
Civil Engineering ■ Land Surveying ■ Land Planning
3233 Monier Circle, Rancho Cordova, CA 95742
T (916) 638-0919 ■ F (916) 638-2479 ■ www.ctaes.net

PRELIMINARY GRADING AND DRAINAGE PLAN
THE RANCH

CITY OF RANCHO CORDOVA | SEPTEMBER, 2018 | STATE OF CALIFORNIA

cta Engineering & Surveying
Civil Engineering ≈ Land Surveying ≈ Land Planning
3233 Monier Circle, Rancho Cordova, CA 95742
T (916) 638-0150 ≈ F (916) 638-2479 ≈ www.ctaeng.net

EARTHWORK

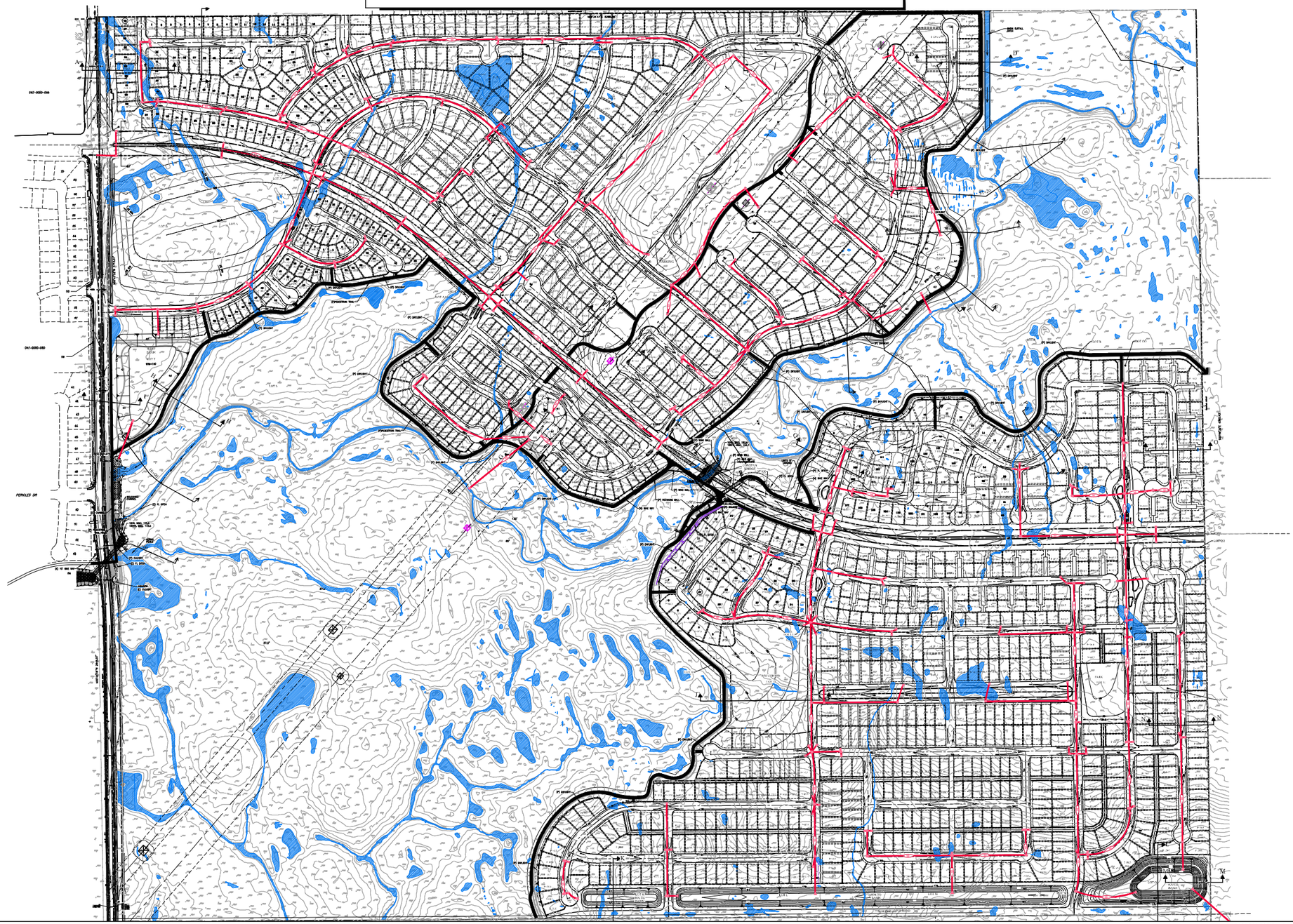
CUT	956,378 CY
FILL	825,899 CY
TOTAL	130,479 CY

LEGEND

- PROPOSED CONTOUR
- EXISTING CONTOUR
- P=1022.0 PROPOSED PAD ELEVATION
- PROPOSED RETAINING WALL (H=12' MAX WALL HEIGHT)
- PROPOSED SLOPE BANK (2:1 UNLESS OTHERWISE NOTED)
- PROPOSED DRAINAGE SYSTEM (OUTFALL, RSP)
- WETLAND
- 100 YR. WATER SURFACE ELEVATION
- PROPOSED DAYLIGHT LINE
- PROPOSED PEDESTRIAN TRAIL

N

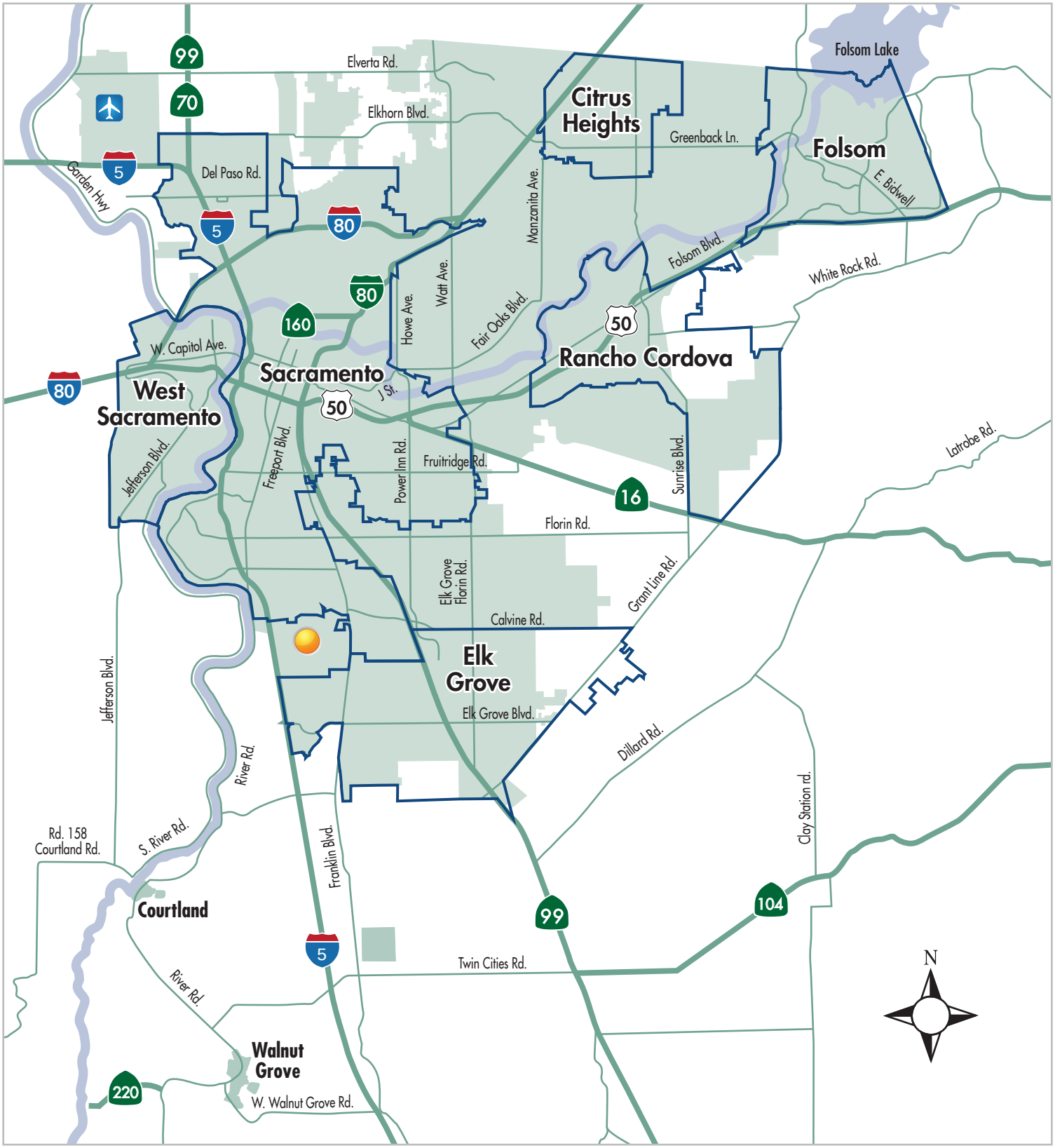
0 75' 150' 300'
SCALE 1" = 150'



GRADING PLAN TENTATIVE SUBDIVISION MAP

SRCSD SERVICE AREA

ATTACHMENT 4



LEGEND

- SRCSD Service Area
- City Boundaries
- Rivers
- Sacramento Regional Wastewater Treatment Plant
- Highways
- Main Roads

Exhibit G

SASD SERVICE AREA

ATTACHMENT 4

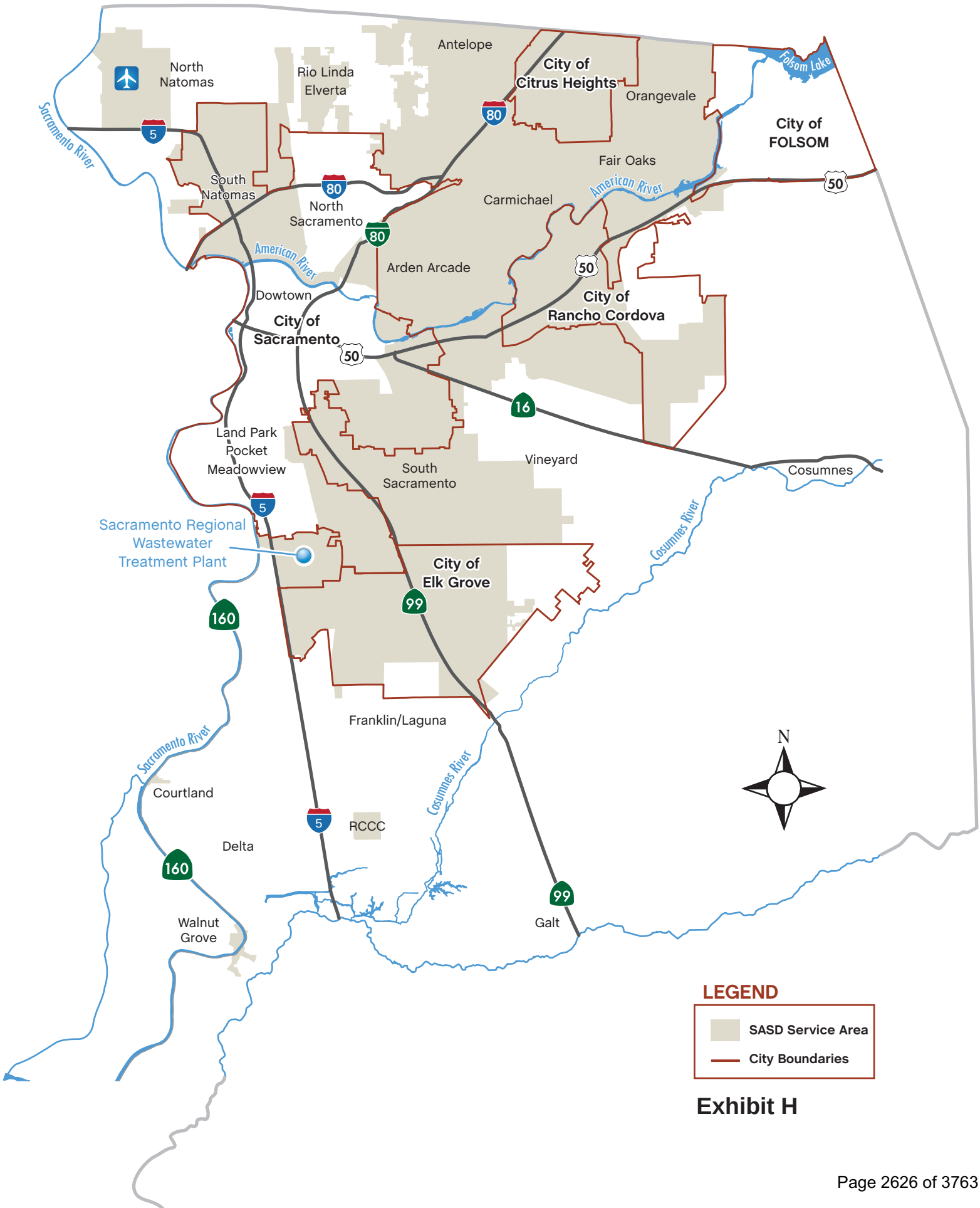
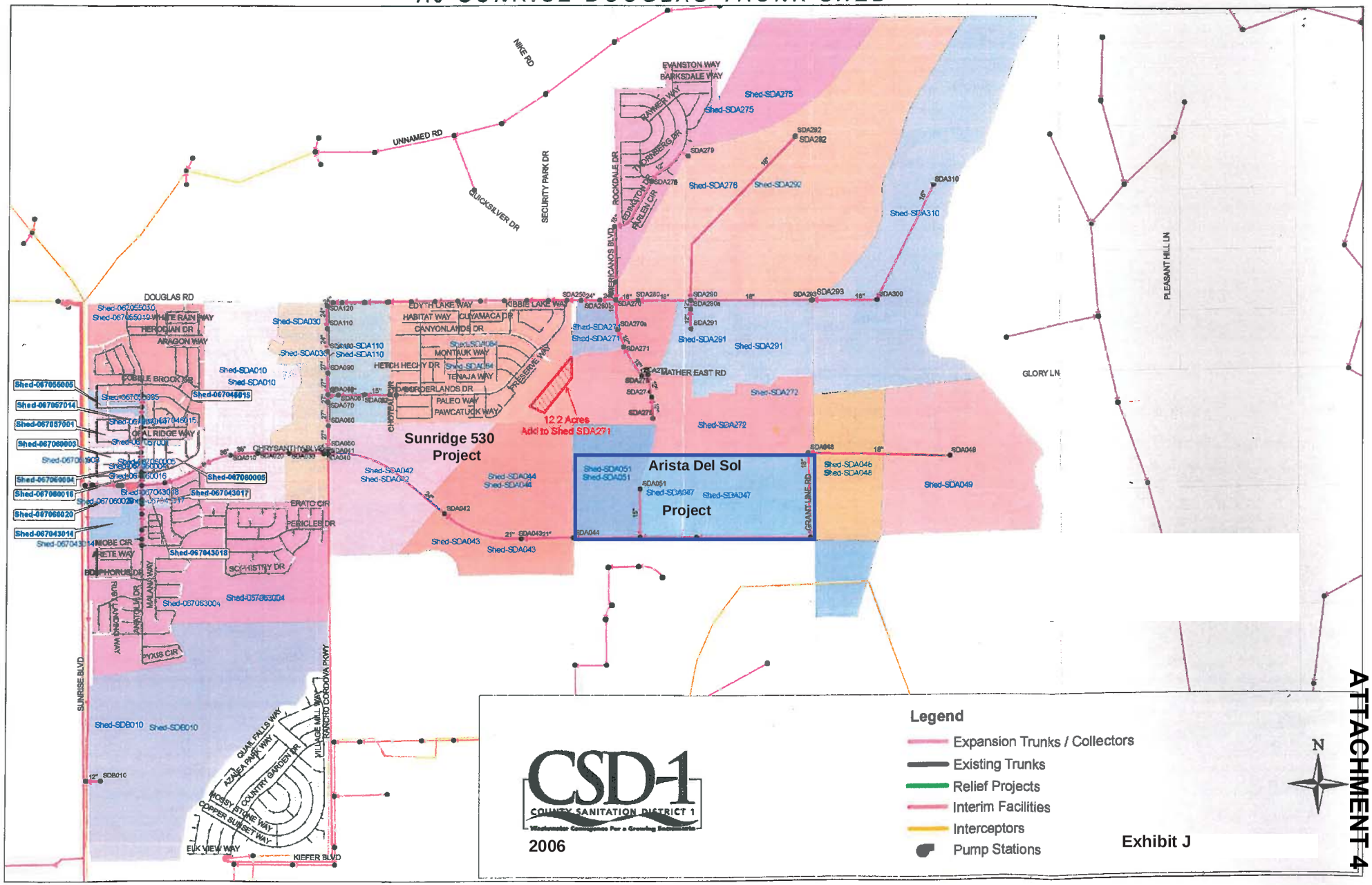
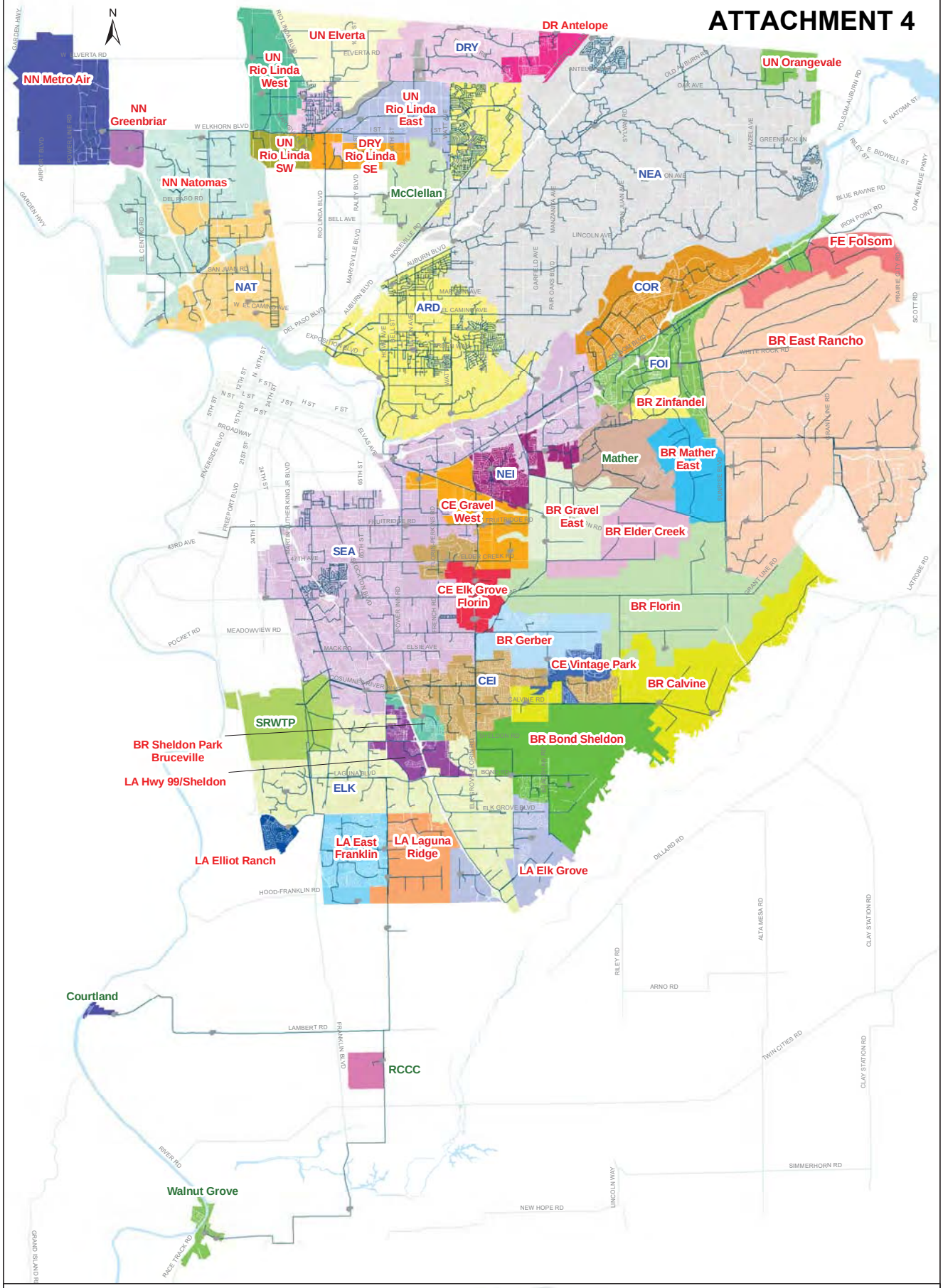


Exhibit H

AJ SUNRISE DOUGLAS TRUNK SHED



ATTACHMENT 4



Legend

Blue Label: Relief Area Shed
Red Label: Expansion Area Shed
Green Label: To be Determined

SACRAMENTO AREA SEWER DISTRICT

2010 SASD SYSTEM CAPACITY PLAN

Trunk Sheds Map

FIGURE 6-1

Date last revised: 6/2011

SASD 2010 SYSTEM CAPACITY PLAN EXPANSION TRUNK SHEDS

BR EAST RANCHO TRUNK SHED – *2015 AMENDMENT*

Introduction

This amendment summarizes the new BR East Rancho near-term and buildout expansion trunk shed plans. Due to recent development activity, SASD has proceeded with an update to the BR East Rancho Expansion Trunk Shed Plan, ahead of the scheduled 2020 System Capacity Plan (SCP) update.

The information in the 2010 SCP BR East Rancho Expansion Trunk Shed Plan was used as a starting reference for this 2015 update. The latest approved sewer study information was included in the update, along with the most recent land use information from the City of Rancho Cordova and Sacramento County. Significant changes to the 2010 SCP were made in areas that were previously planned to be served by future interceptors.

Area Description

The BR East Rancho Trunk Shed encompasses a large area located in the eastern part of Sacramento County, south of Folsom Boulevard. The western half of the shed lies in the City of Rancho Cordova, east of Sunrise Boulevard. The shed extends east to the Urban Services Boundary. The southern boundary includes Grant Line Road and the Urban Services Boundary.

Trunk System Facilities

The BR East Rancho **buildout** expansion trunks are planned to drain to either of two locations which are referred to as Location #1 Outfall and Location #2 Outfall. Location #1 Outfall is located at the S132 Chrysanthy Pump Station (PS), and it will serve the developments in the southern portion of the BR East Rancho shed. Location #2 Outfall is located adjacent to White Rock Road, approximately one-half mile east of Sunrise Boulevard, and it will serve the developments in the northern portion of the BR East Rancho shed. Flows at the two outfall locations are planned to be conveyed by future Regional interceptor facilities.

For the **near-term** conditions, initial flows from the developments in the northern portion of BR East Rancho (Rio Del Oro and Westborough) will drain to the S070 Sunrise White Rock PS system on the interim basis. Ultimately these developments will discharge to Location #2 Outfall. Flows from the developments in the southern portion of BR East Rancho (Anatolia, Arista Del Sol, Cordova Hills, Montelena, North Douglas, Sunridge Lot J, Sunridge Park, and SunCreek) will be conveyed to the S132 Chrysanthy PS.

The BR East Rancho Trunk Shed near-term expansion trunk facilities will be presented first, followed by the buildout summary. The planning trunk facilities are summarized for each of the development areas. The development areas are defined by the sewer studies names, and the areas without sewer studies have been given a name in most cases.

Please refer to the **BR East Rancho Planned Development Areas** map (**Figure A.3-1)** when reviewing the trunk shed plan descriptions below.

A. BR East Rancho Near-Term Expansion Trunk Facilities (Figure A.3-2)

Anatolia, Montelena, Sunridge Lot J, Sunridge Park, and North Douglas – These sheds discharge to the existing trunk system. Their flows are conveyed to S132 PS.

Arista Del Sol – The shed is served by an interim PS. The interim force main will convey flow northward and connect to the existing Douglas Trunk.

Cordova Hills – Phase 1 development will be served by a new permanent PS. Its force main will convey flow northward and connect to the existing Douglas Trunk on an interim basis. The upstream portion of the force main between the PS wet well and Chrysanthy Boulevard will be permanent. The downstream portion of the force main from Chrysanthy Boulevard to the existing Douglas Trunk will be interim until the permanent force main is extended west along Chrysanthy Boulevard and discharges to the Location #1 Outfall.

SunCreek – The Phase 1 development will be served by a new permanent PS. Its force main will convey flow northward and connect to the existing Aerojet Interceptor 1 on Chrysanthy Boulevard.

Rio Del Oro – The Phase 1 development will discharge to existing collectors on White Rock Road, and its flow will be conveyed to S070.

Westborough – The Phase 1 development will be served by an interim pump station. The interim force main will convey flow west along White Rock Road and discharge into the existing 10-inch S070 force main.

B. BR East Rancho Buildout Expansion Trunk Facilities (Figure A.3-3)

Aerojet Lands – This area currently does not have an approved sewer study. The proposed sewer system of the northern portion of this area has been redirected to drain to the Folsom East Interceptor; therefore, it is no longer a part of the BR East Rancho Trunk Shed. The southern portion of the Aerojet Lands area is planned to be served by a trunk that discharges to the Location #2 Outfall.

Anatolia – The trunk system that serves this area has been constructed, and no new trunks are required.

Arboretum – This area is planned to be served by a pump station and two trunk branches. The pump station will be located near the intersection of Jackson Highway and Sunrise Boulevard. The force main will convey flow to the north along Sunrise Boulevard and discharge to the Location #1 Outfall.

Arista Del Sol – Arista Del Sol is planned to be served by a trunk that will be constructed across The Ranch development. The connection point to this future trunk is located in the southwest corner of the development, near the shared boundary with The Ranch development.

Cordova Hills – Cordova Hills will be served by two trunk pump stations situated near each other in the southwest portion of the development. The north pump station will have two contributing trunks while the south pump station will have one contributing trunk. The south pump station will also serve significant areas that lie outside of the Cordova Hills development, known as South Cordova Hills. The pump station force mains convey flow northward to Chrysanthy Boulevard where they follow the right of way west and discharge to the Location #1 Outfall.

Douglas 98 – This area will drain to a future trunk extension of the existing Douglas Trunk.

Douglas 103 – This area requires no additional trunk facilities. Local collectors will discharge to the existing Douglas Trunk.

Grantline 208 – This area requires no additional trunk facilities. Local collectors will discharge to the existing Douglas Trunk.

Montelena – The trunk system that serves this development has been constructed. No additional trunk facilities are required.

North Cordova Hills – North Cordova Hills and the area located to the west currently have no sewer studies. The North Cordova Hills area is proposed to be served by two trunk pump stations located on Glory Lane. Both pump stations' force mains convey flow west along Glory Lane and Douglas Road to the Location #1 Outfall. Each pump station is served by a primary trunk and its minor trunk branches. The area to the immediate west of North Cordova Hills will be served by a trunk that discharges to the extension of the existing Douglas Trunk. The area to the northwest of North Cordova Hills and east of Rio Del Oro will be served by a trunk system that conveys flow to the west along White Rock Road and drains to the Location #2 Outfall.

North Douglas – The sewer system that serves this area has been constructed, and no new trunks are required.

Rio Del Oro – Rio Del Oro will be served by several trunks and a pump station. The proposed pump station located in the southwest corner of the development will serve the southern portion of the development. The pump station force main conveys flow south, adjacent to Sunrise Boulevard, to the Location #1 Outfall. The trunks serving the northern portion of Rio Del Oro will drain to the Location #2 Outfall.

South Cordova Hills – This area is located south of the Cordova Hills development, and it does not have a sewer study. This area is planned to be served by one of the Cordova Hills pump stations.

SunCreek – SunCreek will be served by two trunk pump stations. One proposed pump station is located approximately in the center of the development and will capture flow from the northern portions of the shed area via two trunks. Its force main will convey flow to the north along Rancho Cordova Parkway and discharge to the existing Aerojet Interceptor 1B located in Chrysanthy Boulevard. The second proposed pump station is located in the southwest corner of the development, and it serves the remainder of the shed. This pump station will also provide service to the Anatolia 3 development, which currently is draining to an interim pump station. The ultimate buildout force main of the second proposed pump station will convey flow to the north, along Sunrise Boulevard, and discharge to the Location #1 Outfall.

Sunridge Lot J – The trunk system that serves this development has been constructed. No additional trunk facilities are required.

Sunridge Park – The trunk system that serves this development has been constructed. No additional trunk facilities are required.

The Ranch – The Ranch development is planned to be served by a future trunk that connects to the Aerojet Interceptor 1B located in Chrysanthy Boulevard.

Westborough – The Westborough development will be served by a trunk that discharges to the Location #2 Outfall.

Attribute data and model results for the BR East Rancho **buildout** expansion trunks are presented in the table below. The BR East Rancho Trunk Shed is subdivided into five smaller sub areas as shown in **Figure A.3-4**. **Figures A.3-5** through **A.3-9** display the details of each sub area which include the proposed trunk sewers, modeled manholes, and the contributing area to each manhole.

ATTACHMENT 4

BR East Rancho
Trunk Sewer Data and Model Results
Buildout 10-Year Design Storm

US Manhole	DS Manhole	Link Type	Diameter (in)	Length (ft)	US Rim Elev. (ft)	US Invert Elev. (ft)	DS Rim Elev. (ft)	DS Invert Elev. (ft)	Slope (%)	Full Capacity (mgd)	Peak Flow (mgd)	% Full Capacity	d/D
2879-EN02	2879-EN01	Pump									6.7		
2207-EN03	2207-EN02	Gravity Main	15	475	139.0	117.4	138.0	108.9	1.800	5.6	0.9	16	0.8
2123-EN01	2207-EN02	Gravity Main	21	1965	140.5	111.7	138.0	108.9	0.140	3.9	1.0	25	0.5
2207-EN01	2291-EN01	Gravity Main	24	1285	139.0	107.9	134.5	106.1	0.140	5.5	2.6	47	0.5
2207-EN02	2207-EN01	Gravity Main	24	805	138.0	108.9	139.0	107.9	0.120	5.1	2.2	44	0.5
2291-EN01	2375-EN01	Gravity Main	27	2380	134.5	106.1	139.5	103.2	0.120	7.0	3.0	43	0.5
2375-EN01	2376-EN05	Gravity Main	27	740	139.5	103.2	136.5	102.3	0.120	7.0	3.7	53	0.5
2376-EN05	2376-EN03	Gravity Main	27	585	136.5	102.3	134.0	101.4	0.160	8.1	3.9	48	0.6
2376-EN01	2460-EN01	Gravity Main	30	935	130.5	99.9	128.5	98.7	0.120	9.2	4.9	53	0.5
2376-EN02	2376-EN01	Gravity Main	30	795	132.5	100.8	130.5	99.9	0.120	9.2	4.7	51	0.5
2376-EN03	2376-EN02	Gravity Main	30	455	134.0	101.4	132.5	100.8	0.120	9.2	4.6	50	0.5
2460-EN01	2460-EN02	Gravity Main	30	185	128.5	98.7	124.0	98.5	0.120	9.4	5.1	54	0.5
2460-EN02	2460-INT01	Gravity Main	30	311	124.0	98.5	124.7	98.2	0.100	8.4	5.1	60	0.5
2285-EN02	2285-EN01	Gravity Main	10	2269	275.6	261.0	258.0	240.0	0.920	1.4	1.3	93	0.8
2288-EN01	2373-EN01	Gravity Main	15	3313	194.7	173.1	191.1	167.1	0.180	1.8	1.1	62	0.6
2285-EN01	2286-EN01	Gravity Main	15	2961	258.0	233.2	229.7	212.0	0.720	3.5	2.3	64	0.8
2286-EN01	2287-EN01	Gravity Main	15	2884	229.7	212.0	201.7	186.3	0.890	4.0	3.5	89	0.7
2375-EN03	2375-EN02	Gravity Main	18	687	170.6	151.3	138.0	125.6	3.740	13.2	8.5	64	0.6
2287-EN01	2372-EN01	Gravity Main	27	2704	201.7	185.3	193.4	182.6	0.100	6.3	4.7	74	0.6
2372-EN01	2373-EN01	Gravity Main	27	2661	193.4	172.2	191.1	169.6	0.100	6.3	5.3	83	0.7
2375-EN02	2460-INT01	Gravity Main	27	2935	138.0	124.8	124.7	118.0	0.230	9.7	8.7	90	0.8
2373-EN01	2374-EN01	Gravity Main	30	2653	191.1	157.2	180.9	154.5	0.100	8.4	7.4	88	0.8
2374-EN01	2375-EN03	Gravity Main	30	3264	180.9	154.5	170.6	151.3	0.100	8.4	8.1	97	0.8
2452-EN01	2453-EN02	Gravity Main	10	1334	280.0	267.9	273.1	256.8	0.830	1.3	1.0	79	0.7
2453-EN01	2454-EN02	Gravity Main	12	2208	267.1	253.8	232.0	217.8	1.630	2.9	2.1	72	0.7
2537-EN01	2454-EN02	Gravity Main	12	2398	259.9	241.1	232.0	225.0	0.670	1.9	1.7	89	0.7
2453-EN02	2453-EN01	Gravity Main	15	1476	273.1	256.4	267.1	253.8	0.180	1.8	1.5	86	0.7
2537-EN02	2537-EN01	Gravity Main	15	1439	266.0	245.3	259.9	241.1	0.300	2.3	1.4	61	0.6
2454-EN01	2455-EN01	Gravity Main	18	2610	253.3	210.0	204.1	191.9	0.690	5.7	5.0	89	0.7
2454-EN02	2454-EN01	Gravity Main	18	1590	232.0	217.0	253.3	210.0	0.440	4.5	4.5	99	0.9
2623-EN01	2539-EN01	Gravity Main	10	2308	218.0	212.0	192.0	187.4	1.070	1.5	1.0	70	0.6
2539-EN01	2455-EN01	Gravity Main	15	2336	192.0	187.0	204.1	182.8	0.180	1.8	1.4	81	0.7
2374-EN02	2459-EN01	Gravity Main	21	2964	180.9	162.4	142.6	129.9	1.100	10.7	7.3	68	0.6
2459-EN01	2460-INT01	Gravity Main	24	3146	142.6	129.7	124.7	115.0	0.470	10.0	7.3	73	0.6
2371-EN01	2371-EN02	Gravity Main	30	638	240.0	179.8	191.4	179.2	0.100	8.4	7.4	88	0.7
2372-EN02	2373-EN02	Gravity Main	30	2751	190.1	168.0	180.2	165.3	0.100	8.4	7.4	88	0.7
2373-EN02	2374-EN02	Gravity Main	30	2825	180.2	165.3	180.9	162.4	0.100	8.4	7.3	87	0.7
2371-EN02	2372-EN02	Gravity Main	30	2683	191.4	179.2	190.1	176.5	0.100	8.4	7.4	88	0.7
2455-EN01	2371-EN01	Gravity Main	30	1719	204.1	181.5	240.0	179.8	0.100	8.4	6.9	83	0.8
2618-EN02	2618-EN01	Gravity Main	12	1316	222.1	204.5	202.0	193.0	0.870	2.2	1.2	54	0.5
2618-EN03	2618-EN02	Gravity Main	12	476	227.7	208.6	222.1	204.5	0.870	2.2	1.2	54	0.5
2618-EN01	2702-EN01	Gravity Main	18	1362	202.0	187.0	198.0	183.5	0.260	3.5	3.1	88	0.8
2786-EN01	2870-EN01	Gravity Main	18	2264	208.9	178.5	180.4	169.9	0.380	4.2	3.7	87	0.7
2702-EN01	2786-EN01	Gravity Main	18	1303	198.0	183.5	208.9	178.5	0.380	4.2	3.7	87	0.7
2870-EN01	2954-EN02	Gravity Main	21	2418	180.4	160.0	192.3	152.0	0.330	5.9	4.6	78	0.7
2954-EN02	2954-EN03	Gravity Main	24	535	192.3	152.0	158.0	150.4	0.310	8.1	5.4	66	0.6
2618-EN05	2618-EN04	Gravity Main	12	1437	224.3	213.0	206.0	193.0	1.390	2.7	1.0	36	0.4
2619-EN01	2618-EN05	Gravity Main	12	2104	254.4	240.8	224.3	213.0	1.320	2.7	1.0	37	0.4
2618-EN04	2618-EN01	Gravity Main	15	1300	206.0	192.6	202.0	187.2	0.410	2.7	1.7	62	0.7
3460-EN05	3460-EN06	Pump									6.8		

ATTACHMENT 4

BR East Rancho
Trunk Sewer Data and Model Results
Buildout 10-Year Design Storm

US Manhole	DS Manhole	Link Type	Diameter (in)	Length (ft)	US Rim Elev. (ft)	US Invert Elev. (ft)	DS Rim Elev. (ft)	DS Invert Elev. (ft)	Slope (%)	Full Capacity (mgd)	Peak Flow (mgd)	% Full Capacity	d/D
2787-EN02	2787-EN01	Gravity Main	12	1391	224.3	207.0	211.8	200.0	0.500	1.6	1.3	80	0.7
2787-EN01	2872-EN02	Gravity Main	15	1142	211.8	200.0	203.3	190.0	0.880	3.9	1.7	44	0.7
2872-EN02	2872-EN01	Gravity Main	15	1347	203.3	190.0	193.9	180.7	0.690	3.5	2.4	68	0.6
2872-EN01	2956-EN01	Gravity Main	18	687	193.9	180.5	188.1	177.0	0.500	4.8	3.5	73	0.6
2956-EN01	2955-EN02	Gravity Main	27	1171	188.1	171.2	184.0	170.0	0.100	6.3	4.5	72	0.6
2789-EN01	2873-EN02	Gravity Main	15	1479	257.3	231.9	256.0	229.3	0.180	1.8	1.3	76	0.8
2873-EN02	2873-EN01	Gravity Main	15	1263	256.0	229.3	248.0	227.0	0.180	1.8	1.6	90	0.7
2874-EN01	2874-EN02	Gravity Main	18	3042	247.8	220.2	215.4	191.0	0.960	6.7	2.4	37	0.6
2874-EN02	2875-EN02	Gravity Main	18	339	215.4	191.0	210.7	189.2	0.510	4.9	3.1	63	0.6
2875-EN01	326-227-1011	Gravity Main	18	349	208.6	187.5	206.3	185.3	0.630	5.4	3.1	57	0.7
2875-EN02	2875-EN01	Gravity Main	18	311	210.7	189.2	208.6	187.6	0.520	4.9	3.1	62	0.6
2873-EN01	2874-EN01	Gravity Main	21	202	248.0	220.5	247.8	220.2	0.120	3.6	2.4	69	0.6
2708-EN01	2709-EN02	Gravity Main	12	1480	198.3	171.4	172.0	162.0	0.630	1.8	1.2	64	0.6
2709-EN01	2710-EN01	Gravity Main	18	1402	173.7	150.0	164.1	147.4	0.190	2.9	2.2	75	0.9
2709-EN02	2709-EN01	Gravity Main	18	2589	172.0	156.5	173.7	150.3	0.240	3.3	1.8	53	0.5
2710-EN01	2794-EN01	Gravity Main	18	1820	164.1	147.7	150.0	142.3	0.300	3.7	2.9	79	0.7
2794-EN01	2795-EN03	Gravity Main	21	1945	150.0	142.0	152.0	139.7	0.120	3.6	3.2	90	0.7
2795-EN03	2879-EN03	Gravity Main	24	2195	152.0	136.1	146.0	133.7	0.110	4.9	3.8	78	0.7
2879-EN03	2879-EN02	Gravity Main	30	59	146.0	118.5	146.0	118.5	0.100	8.4	6.7	80	0.5
3460-EN03	3460-EN01	Pump									4.2		
2795-EN02	2795-EN01	Gravity Main	12	1788	164.8	128.4	148.0	122.7	0.320	1.3	1.1	86	0.7
2795-EN01	2879-EN03	Gravity Main	18	1904	148.0	122.2	146.0	119.5	0.140	2.5	1.8	70	0.6
2954-EN03	2954-EN01	Pump									5.4		
3205-EN01	3205-EN04	Gravity Main	15	625	155.0	125.9	147.0	124.5	0.230	2.0	1.4	70	0.7
3205-EN02	3205-EN01	Gravity Main	15	757	158.0	133.0	155.0	130.7	0.300	2.3	1.4	61	0.6
3290-EN01	3374-EN01	Gravity Main	15	1398	141.7	120.3	141.0	117.7	0.180	1.8	1.7	97	0.8
3290-EN02	3290-EN01	Gravity Main	15	566	151.6	121.3	141.7	120.3	0.180	1.8	1.7	93	0.8
3205-EN04	3206-EN02	Gravity Main	15	894	147.0	124.5	145.2	122.9	0.180	1.8	1.5	83	0.8
3206-EN02	3290-EN02	Gravity Main	15	892	145.2	122.9	151.6	121.3	0.180	1.8	1.7	93	0.8
3374-EN01	3458-EN01	Gravity Main	18	1743	141.0	117.5	142.1	114.8	0.150	2.7	1.8	68	0.7
3458-EN01	3459-EN03	Gravity Main	18	1743	142.1	114.8	136.0	112.4	0.140	2.5	1.9	74	0.6
3459-EN02	3543-EN01	Gravity Main	21	2126	138.0	110.9	142.7	108.3	0.120	3.6	2.9	81	0.8
3459-EN03	3459-EN02	Gravity Main	21	1051	136.0	112.1	138.0	110.9	0.120	3.6	2.6	72	0.7
3543-EN01	3627-EN01	Gravity Main	21	1861	142.7	108.3	132.1	106.1	0.120	3.6	3.2	90	0.7
3460-EN02	3460-EN03	Gravity Main	24	22	124.0	100.8	124.0	100.7	0.110	4.9	4.2	87	0.5
3627-EN01	3628-EN01	Gravity Main	24	1326	132.1	105.8	135.6	104.4	0.110	4.9	3.8	77	0.7
3628-EN01	3460-EN02	Gravity Main	24	3280	135.6	104.4	124.0	100.8	0.110	4.9	3.9	81	0.7
3123-EN04	3123-EN03	Gravity Main	12	735	185.0	177.6	187.0	175.2	0.330	1.3	0.9	70	0.6
3123-EN03	3207-EN07	Gravity Main	15	650	187.0	175.2	181.0	172.9	0.350	2.5	1.1	44	0.6
3207-EN06	3207-EN05	Gravity Main	15	784	182.0	170.0	177.0	167.5	0.320	2.4	1.5	62	0.6
3207-EN07	3207-EN06	Gravity Main	15	878	181.0	172.9	182.0	170.0	0.330	2.4	1.4	56	0.6
3291-EN05	3291-EN03	Gravity Main	18	567	164.4	154.4	166.5	153.6	0.140	2.6	2.1	81	0.8
3291-EN06	3291-EN07	Gravity Main	18	486	169.0	160.9	165.0	154.8	1.260	7.6	2.0	26	0.7
3291-EN07	3291-EN05	Gravity Main	18	291	165.0	154.8	164.4	154.4	0.140	2.5	2.0	80	0.7
3291-EN09	3291-EN06	Gravity Main	18	1182	172.0	165.0	169.0	160.9	0.350	4.0	1.9	48	0.5
3207-EN05	3291-EN09	Gravity Main	18	633	177.0	167.5	172.0	165.0	0.400	4.3	1.6	37	0.5
2955-EN02	2955-EN01	Pump									4.5		
3207-EN03	3207-EN02	Gravity Main	12	362	176.0	166.4	166.0	163.7	0.750	2.0	1.0	49	0.5
3207-EN01	3291-En04	Gravity Main	15	1385	170.1	159.6	173.8	156.2	0.250	2.1	1.1	53	0.6
3207-EN02	3207-EN01	Gravity Main	15	547	166.0	163.4	170.1	159.6	0.700	3.5	1.1	31	0.5

ATTACHMENT 4

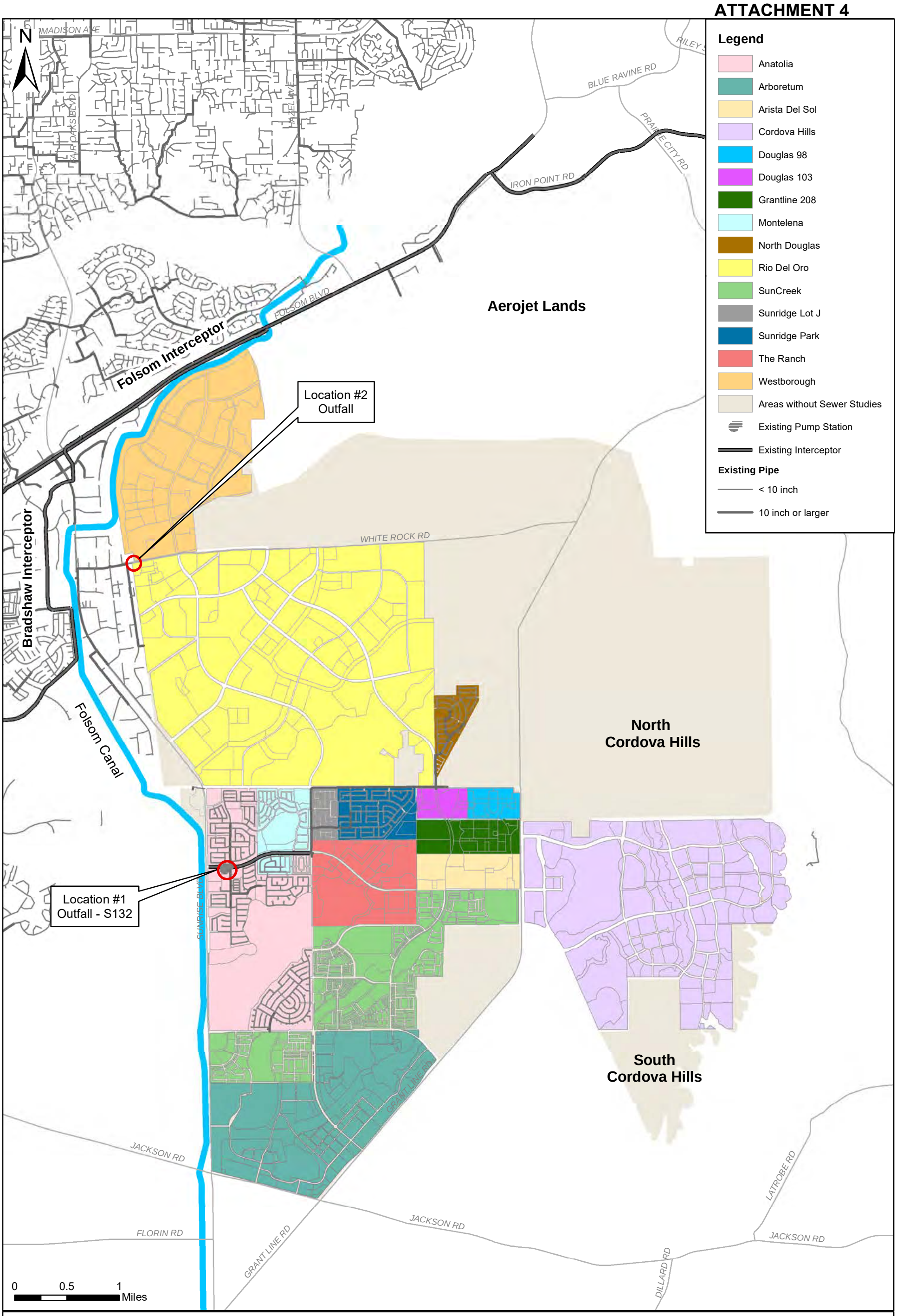
BR East Rancho
Trunk Sewer Data and Model Results
Buildout 10-Year Design Storm

US Manhole	DS Manhole	Link Type	Diameter (in)	Length (ft)	US Rim Elev. (ft)	US Invert Elev. (ft)	DS Rim Elev. (ft)	DS Invert Elev. (ft)	Slope (%)	Full Capacity (mgd)	Peak Flow (mgd)	% Full Capacity	d/D
3291-EN04	3291-EN03	Gravity Main	18	936	173.8	156.2	166.5	153.6	0.280	3.6	1.7	48	0.8
3291-EN01	3376-EN03	Gravity Main	24	2503	161.8	148.0	148.0	134.0	0.560	11.0	4.1	37	0.4
3291-EN02	3291-EN01	Gravity Main	24	590	170.0	153.0	161.8	148.1	0.830	13.3	4.0	30	0.4
3376-EN01	3460-EN04	Gravity Main	24	180	142.0	124.2	132.0	120.9	1.840	19.8	4.5	23	0.6
3376-EN02	3376-EN01	Gravity Main	24	1123	138.0	129.0	142.0	124.3	0.420	9.5	4.5	48	0.5
3376-EN03	3376-EN02	Gravity Main	24	918	148.0	133.9	138.0	129.1	0.520	10.6	4.5	42	0.5
3291-EN03	3291-EN02	Gravity Main	24	386	166.5	153.6	170.0	153.0	0.160	5.8	3.9	67	0.6
3460-EN04	3460-EN05	Gravity Main	27	43	132.0	120.9	132.0	120.9	0.100	6.3	6.8	107	0.6
3293-EN01	3460-EN04	Gravity Main	10	4219	237.0	200.0	132.0	122.3	1.840	1.9	1.7	86	0.7
3209-EN01	3293-EN01	Gravity Main	12	899	237.0	206.9	237.0	200.0	0.770	2.0	1.4	69	0.6
3209-EN02	3209-EN01	Gravity Main	12	796	236.0	212.6	237.0	207.0	0.700	1.9	1.3	65	0.6
3209-EN03	3209-EN02	Gravity Main	12	957	238.0	217.4	236.0	212.7	0.490	1.6	0.9	55	0.5
3719-EN03	3719-EN02	Pump									3.7		
3213-EN01	3296-EN01	Gravity Main	15	859	169.0	154.5	162.5	153.0	0.180	1.8	1.0	58	0.6
3296-EN01	3296-EN02	Gravity Main	15	491	162.5	146.2	161.8	145.6	0.130	1.5	1.3	89	0.7
3211-EN01	3211-EN02	Gravity Main	15	373	181.0	168.6	180.0	168.0	0.160	1.7	0.9	54	0.5
3211-EN02	3212-EN03	Gravity Main	15	1287	180.0	168.0	173.4	165.7	0.180	1.8	0.9	50	0.5
3212-EN01	3213-EN01	Gravity Main	15	1694	172.0	161.7	169.0	158.6	0.180	1.8	1.0	55	0.5
3212-EN02	3212-EN01	Gravity Main	15	1024	170.8	163.6	172.0	161.7	0.180	1.8	1.0	53	0.5
3212-EN03	3212-EN02	Gravity Main	15	1142	173.4	165.7	170.8	163.6	0.180	1.8	0.9	52	0.5
3296-EN02	3296-EN10	Gravity Main	18	727	161.8	143.9	158.0	142.9	0.140	2.6	1.6	64	0.6
3296-EN10	3296-EN03	Gravity Main	24	62	158.0	142.4	158.0	142.3	0.110	4.9	4.4	91	0.5
3295-EN01	3296-EN07	Gravity Main	18	1591	172.0	155.9	162.1	153.7	0.140	2.5	2.0	78	0.7
3296-EN05	3296-EN10	Gravity Main	18	582	159.0	145.7	158.0	144.5	0.190	3.0	2.8	93	0.8
3296-EN06	3296-EN05	Gravity Main	18	719	164.0	148.0	159.0	147.0	0.140	2.5	2.0	78	0.7
3296-EN07	3296-EN06	Gravity Main	18	461	162.1	153.7	164.0	153.0	0.140	2.5	2.0	78	0.7
3551-EN02	3551-EN01	Pump									2.1		
3296-EN03	3296-EN04	Pump									4.4		
3466-EN01	3550-EN02	Gravity Main	18	2852	141.0	116.7	137.0	112.6	0.140	2.6	1.4	53	0.5
312-218-1016	3466-EN01	Gravity Main	18	809	132.0	117.8	141.0	116.7	0.140	2.5	1.4	54	0.5
3550-EN02	3551-EN02	Gravity Main	21	1998	137.0	110.6	131.0	107.7	0.140	3.9	2.1	53	0.5
3549-EN01	3550-EN01	Gravity Main	15	734	151.9	124.9	133.0	116.9	1.090	4.4	1.0	24	0.6
3550-EN01	3634-EN01	Gravity Main	15	724	133.0	116.9	142.2	115.6	0.180	1.8	1.1	63	0.6
3634-EN01	3718-EN04	Gravity Main	15	1967	142.2	115.6	128.1	112.1	0.180	1.8	1.2	67	0.6
3718-EN04	3718_EN03	Gravity Main	15	645	128.1	112.1	127.0	96.9	2.350	6.4	1.3	20	0.6
3718_EN03	3718-EN02	Gravity Main	18	341	127.0	96.6	127.0	96.2	0.140	2.5	1.9	76	0.6
3632-EN01	3717-EN04	Gravity Main	15	436	143.0	122.0	143.0	121.1	0.200	1.9	1.1	56	0.5
3717-EN04	3717-EN03	Gravity Main	15	1197	143.0	121.1	142.0	115.1	0.500	3.0	1.1	37	0.6
3717-EN02	3717-EN01	Gravity Main	18	1006	145.0	113.1	140.0	111.7	0.140	2.6	1.5	59	0.6
3717-EN03	3717-EN02	Gravity Main	18	1049	142.0	115.1	145.0	113.3	0.170	2.8	1.4	52	0.5
3717-EN01	3718-EN06	Gravity Main	18	669	140.0	111.7	140.0	110.5	0.170	2.8	1.6	55	0.6
3718-EN05	3718-EN02	Gravity Main	18	826	138.0	109.6	127.0	96.2	1.620	8.7	1.7	20	0.6
3718-EN06	3718-EN05	Gravity Main	18	865	140.0	110.5	138.0	109.6	0.110	2.3	1.6	69	0.6
3718-EN01	3719-EN01	Gravity Main	24	2006	129.9	94.9	118.0	93.1	0.090	4.4	3.7	86	0.7
3718-EN02	3718-EN01	Gravity Main	24	694	127.0	95.7	129.9	94.9	0.120	5.0	3.7	74	0.7
3719-EN01	3719-EN03	Gravity Main	24	35	118.0	93.1	122.0	92.8	0.780	12.9	3.7	29	0.4
3128-EN01	3045-EN01	Gravity Main	15	1136	189.2	154.8	184.0	152.8	0.180	1.8	1.5	82	0.7
3128-EN02	3128-EN01	Gravity Main	15	1303	193.4	157.2	189.2	154.8	0.180	1.8	1.5	82	0.7
3045-EN01	322-221-1009	Gravity Main	18	1715	184.0	152.5	179.7	150.1	0.140	2.5	1.8	70	0.6
2540-EN01	2541-EN02	Gravity Main	15	2147	175.2	159.4	172.0	155.6	0.180	1.8	1.2	69	0.6

ATTACHMENT 4

BR East Rancho
Trunk Sewer Data and Model Results
Buildout 10-Year Design Storm

US Manhole	DS Manhole	Link Type	Diameter (in)	Length (ft)	US Rim Elev. (ft)	US Invert Elev. (ft)	DS Rim Elev. (ft)	DS Invert Elev. (ft)	Slope (%)	Full Capacity (mgd)	Peak Flow (mgd)	% Full Capacity	d/D
2458-EN01	2543-EN01	Gravity Main	18	1431	179.6	148.0	164.6	139.3	0.610	5.3	4.0	76	0.7
2544-EN02	2544-EN01	Gravity Main	18	813	158.2	135.4	136.0	130.0	0.660	5.5	5.4	97	0.8
2541-EN01	2542-EN01	Gravity Main	21	1682	173.8	152.7	173.4	150.7	0.120	3.5	3.3	94	0.9
2541-EN02	2541-EN01	Gravity Main	21	1330	172.0	155.1	173.8	153.5	0.120	3.6	2.7	76	0.7
2542-EN01	2458-EN01	Gravity Main	21	2211	173.4	150.5	179.6	147.9	0.120	3.6	3.7	105	1.0
2460-EN03	2460-INT01	Gravity Main	27	299	124.0	110.1	124.7	109.8	0.100	6.3	5.7	90	0.6
2543-EN01	2544-EN02	Gravity Main	27	3236	164.6	138.6	158.2	135.4	0.100	6.3	5.0	79	0.7
2544-EN01	2460-EN03	Gravity Main	27	2373	136.0	112.4	124.0	110.1	0.100	6.3	5.7	90	0.7
2954-EN03	3131-EN01	Force Main	15	31664	158.0	151.0	168.0	160.0			5.4		1.0
2955-EN02	3131-EN01	Force Main	15	26476	182.4	169.0	168.0	160.0			4.5		1.0
3460-EN03	3131-EN01	Force Main	12	25920	124.0	98.4	168.0	160.0			4.2		1.0
3460-EN05	3131-EN01	Force Main	15	24480	138.0	120.9	168.0	160.0			6.8		1.0
3296-EN03	N47-MH0108A	Force Main	12	8567	158.0	142.6	177.4	167.0			4.4		1.0
2879-EN02	3131-EN01	Force Main	14	6004	146.0	118.0	168.0	160.0			6.7		1.0
3719-EN03	3131-EN01	Force Main	12	16654	116.2	92.8	168.0	160.0			3.7		1.0
3551-EN02	3131-EN01	Force Main	12	11852	131.0	107.7	168.0	160.0			2.1		1.0



SACRAMENTO AREA SEWER DISTRICT

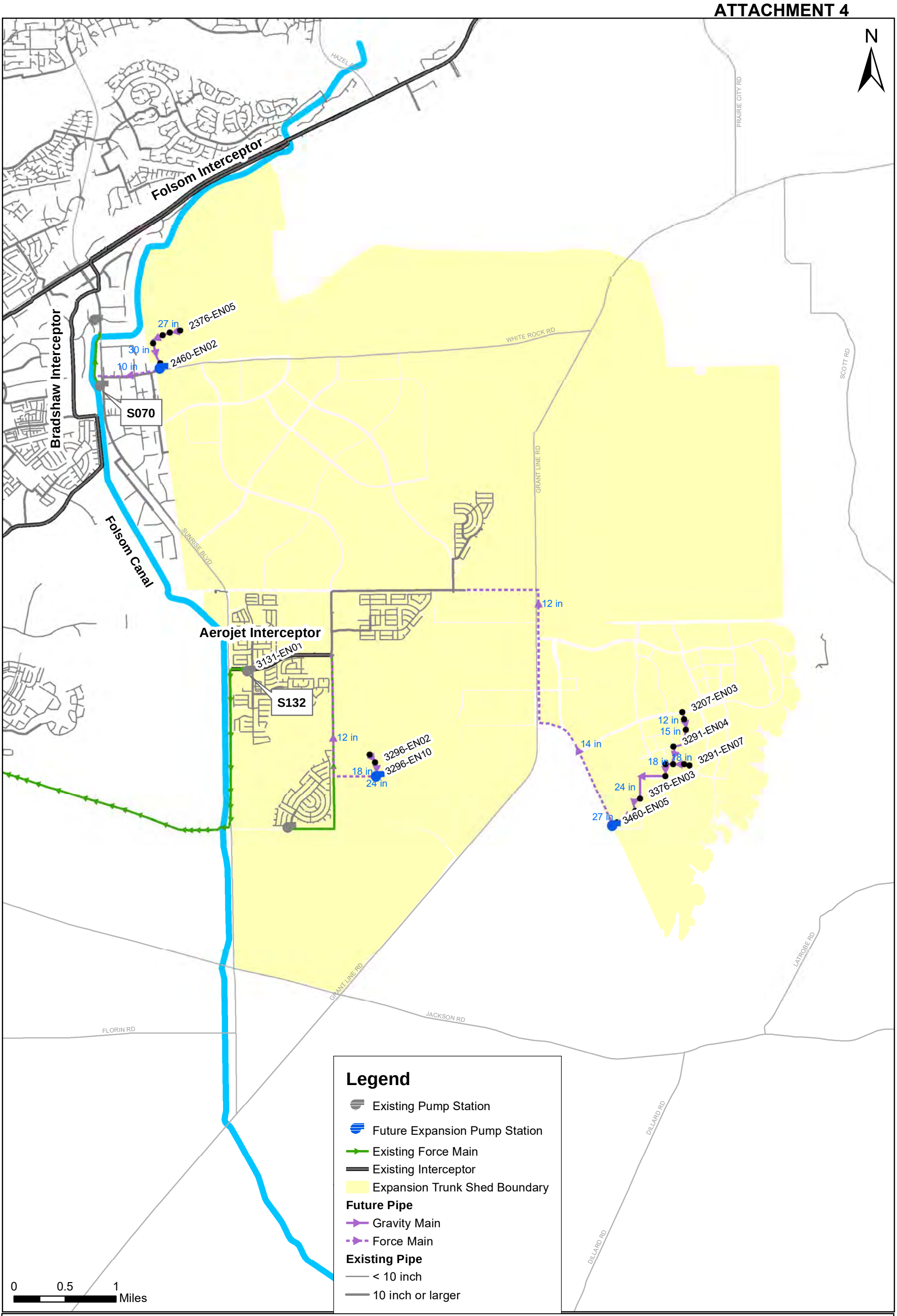
SASD SYSTEM CAPACITY PLAN - 2015 UPDATE

BR East Rancho

Planned Development Areas

Figure A.3-1

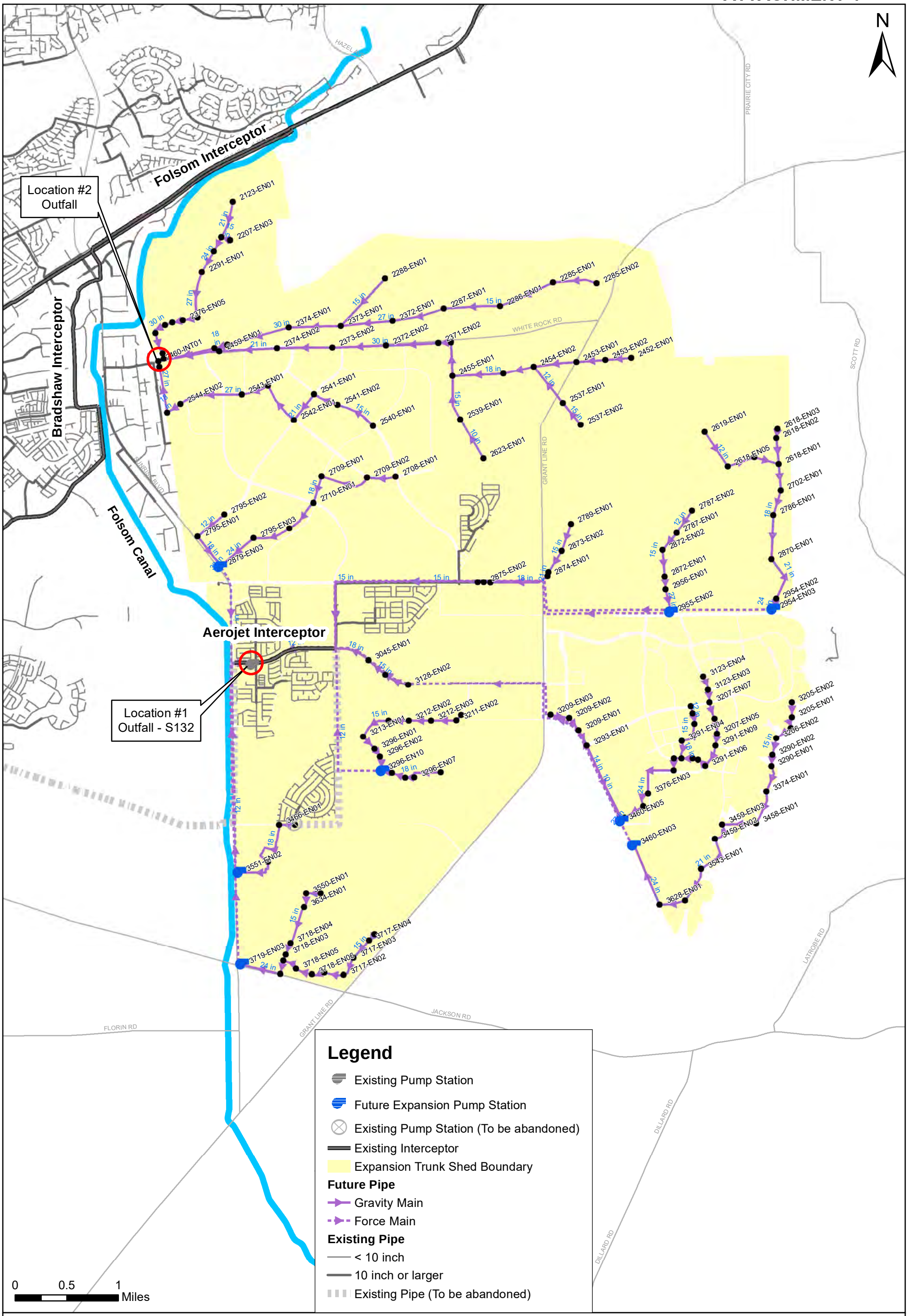
Updated: 3/18/2016



SACRAMENTO AREA SEWER DISTRICT

SASD SYSTEM CAPACITY PLAN - 2015 UPDATE
BR East Rancho
Near-Term Expansion Plan
Figure A.3-2

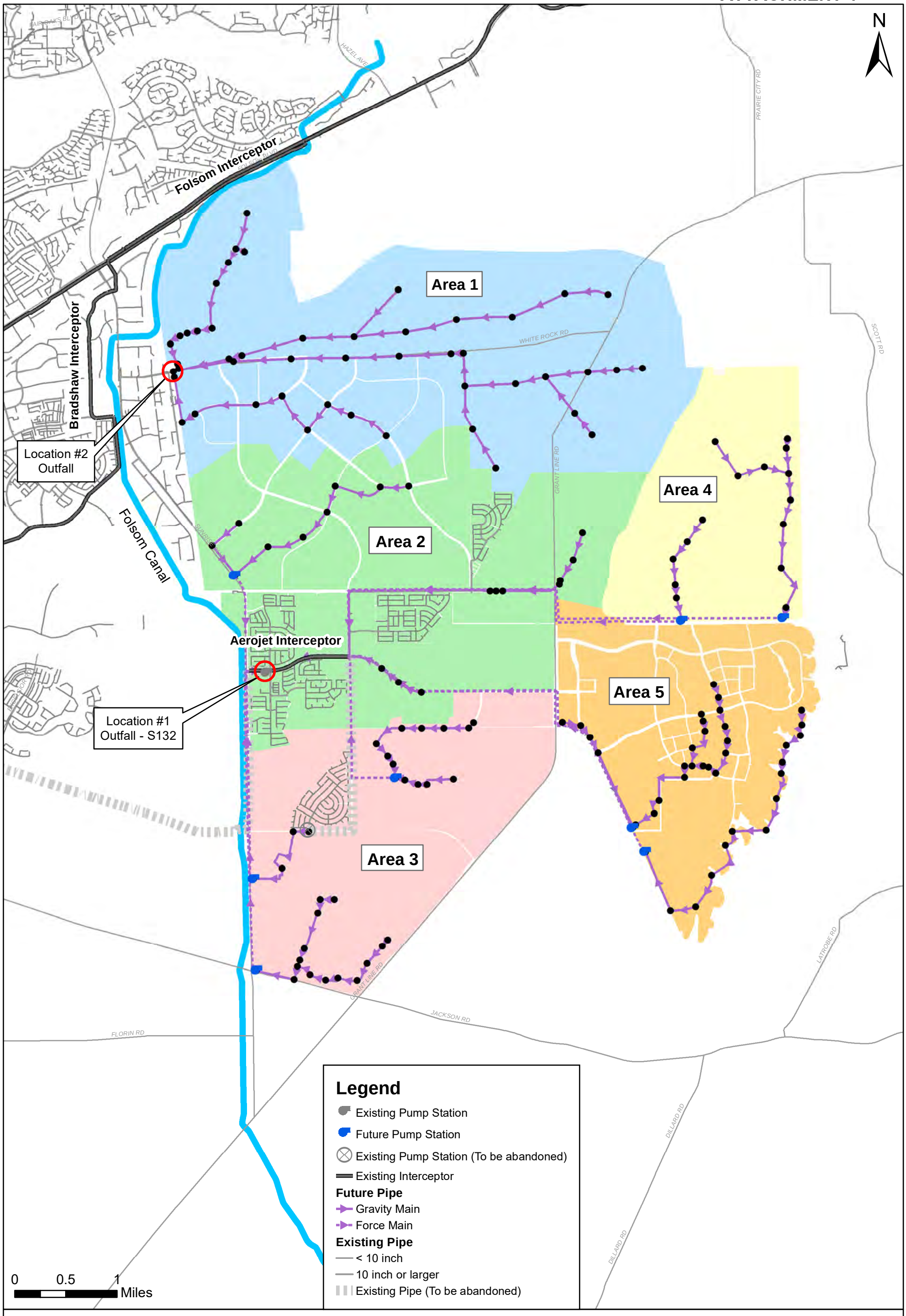
Updated: 8/24/2016



SACRAMENTO AREA SEWER DISTRICT

SASD SYSTEM CAPACITY PLAN - 2015 UPDATE
BR East Rancho
Buildout Expansion Plan
Figure A.3-3

Updated: 3/18/2016



SASD SYSTEM CAPACITY PLAN - 2015 UPDATE

BR East Rancho

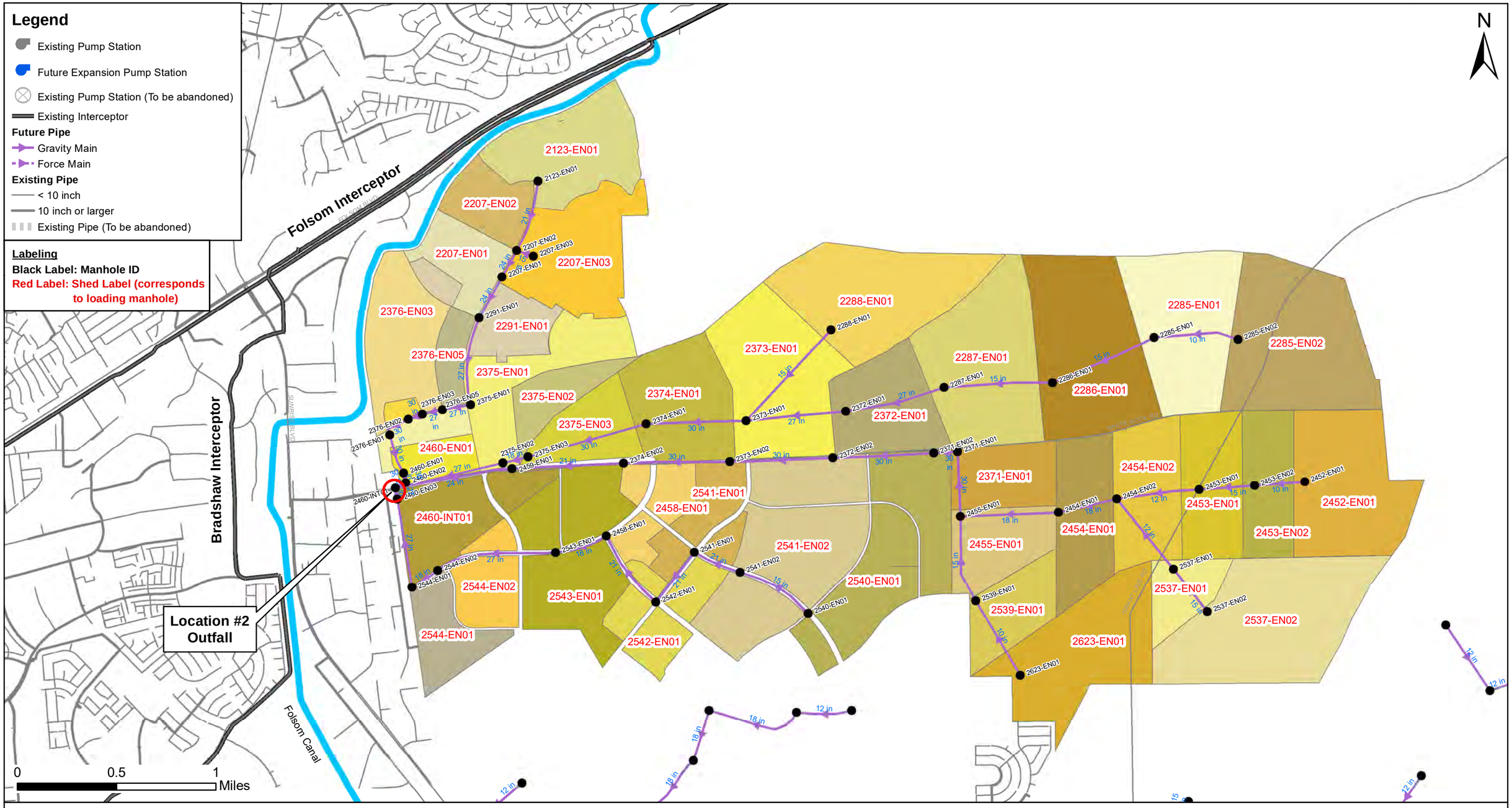
Sewer Shed Map (Area 1 - Area 5)

Buildout Expansion Plan

FIGURE A.3-4

SACRAMENTO AREA SEWER DISTRICT

Updated: 3/18/2016



SASD SYSTEM CAPACITY PLAN - 2015 UPDATE

BR East Rancho

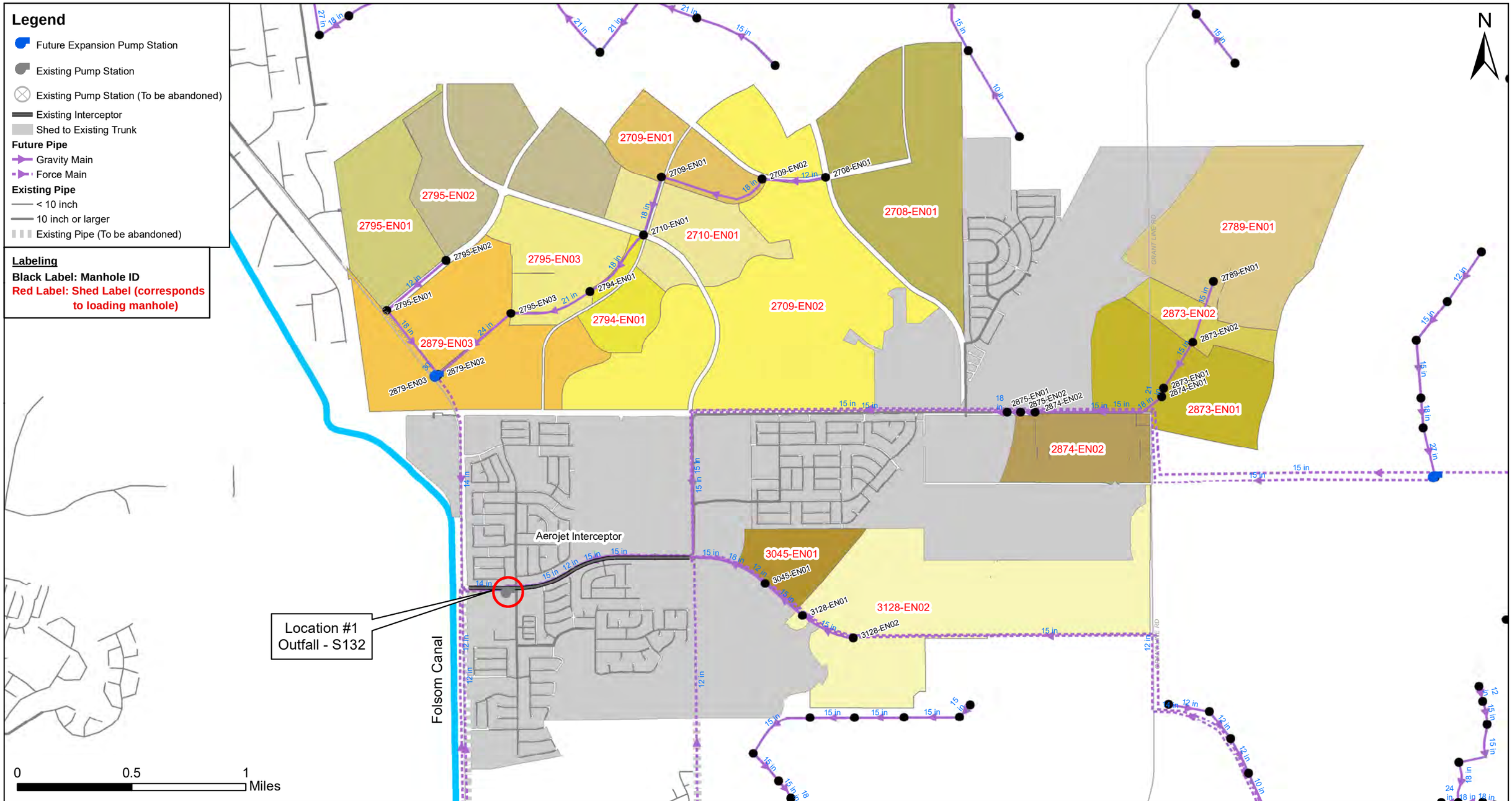
Sewer Shed Map - Area 1

Buildout Expansion Plan

FIGURE A.3-5

SACRAMENTO AREA SEWER DISTRICT

Updated: 3/18/2016



SASD SYSTEM CAPACITY PLAN - 2015 UPDATE

BR East Rancho

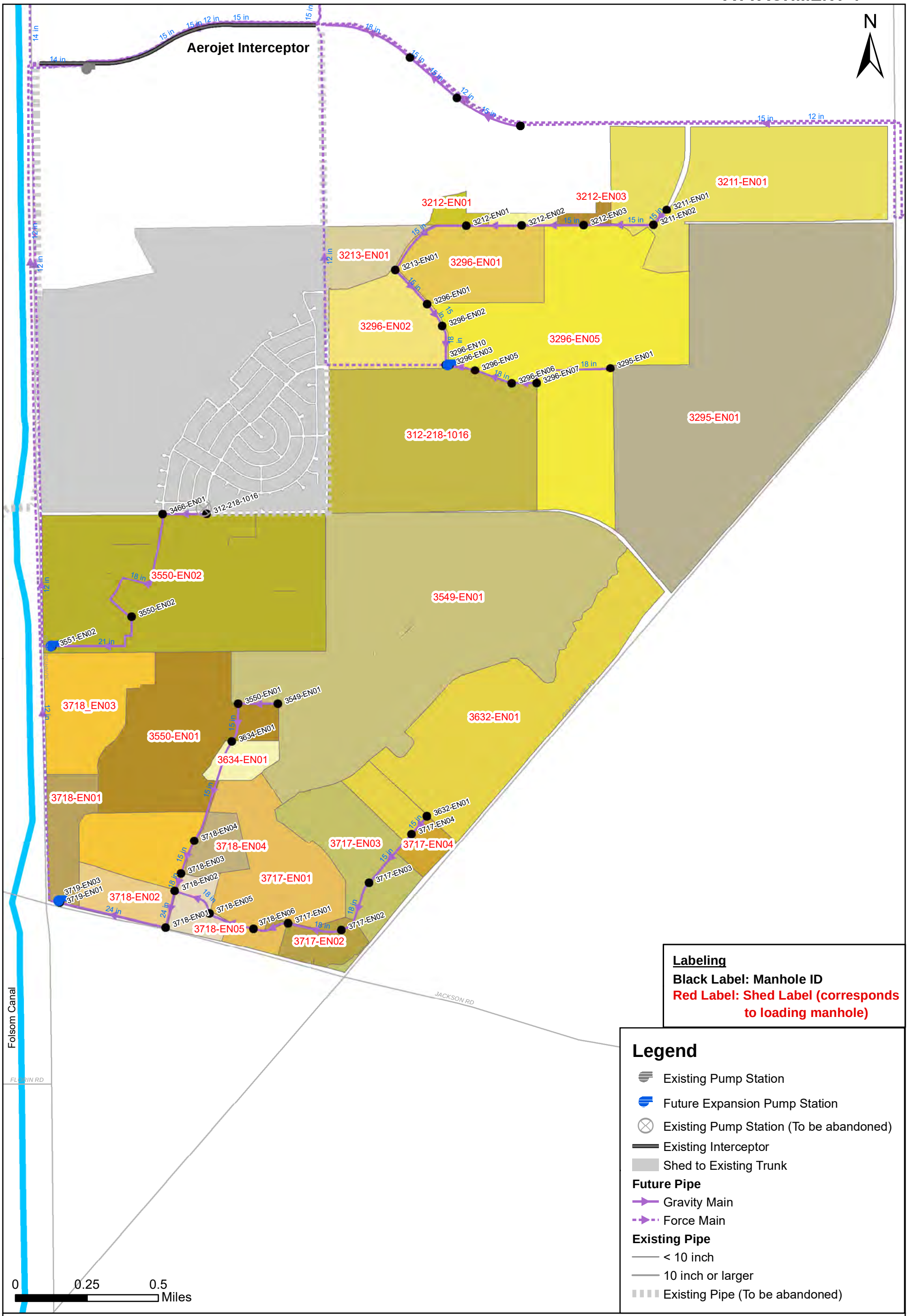
Sewer Shed Map - Area 2

Buildout Expansion Plan

FIGURE A.3-6

SACRAMENTO AREA SEWER DISTRICT

Updated: 3/18/2016



Labeling
Black Label: Manhole ID
Red Label: Shed Label (corresponds to loading manhole)

Legend

- Existing Pump Station
- Future Expansion Pump Station
- Existing Pump Station (To be abandoned)
- Existing Interceptor
- Shed to Existing Trunk

Future Pipe
- Gravity Main
- Force Main

Existing Pipe
- < 10 inch
- 10 inch or larger
- Existing Pipe (To be abandoned)

SACRAMENTO AREA SEWER DISTRICT

SASD SYSTEM CAPACITY PLAN - 2015 UPDATE
BR East Rancho
Sewer Shed Map - Area 3
Buildout Expansion Plan
FIGURE A.3-7

Updated: 3/18/2016

Legend

- Existing Pump Station
- Future Expansion Pump Station
- Existing Pump Station (To be abandoned)
- Existing Interceptor

Future Pipe

- Gravity Main
- Force Main

Existing Pipe

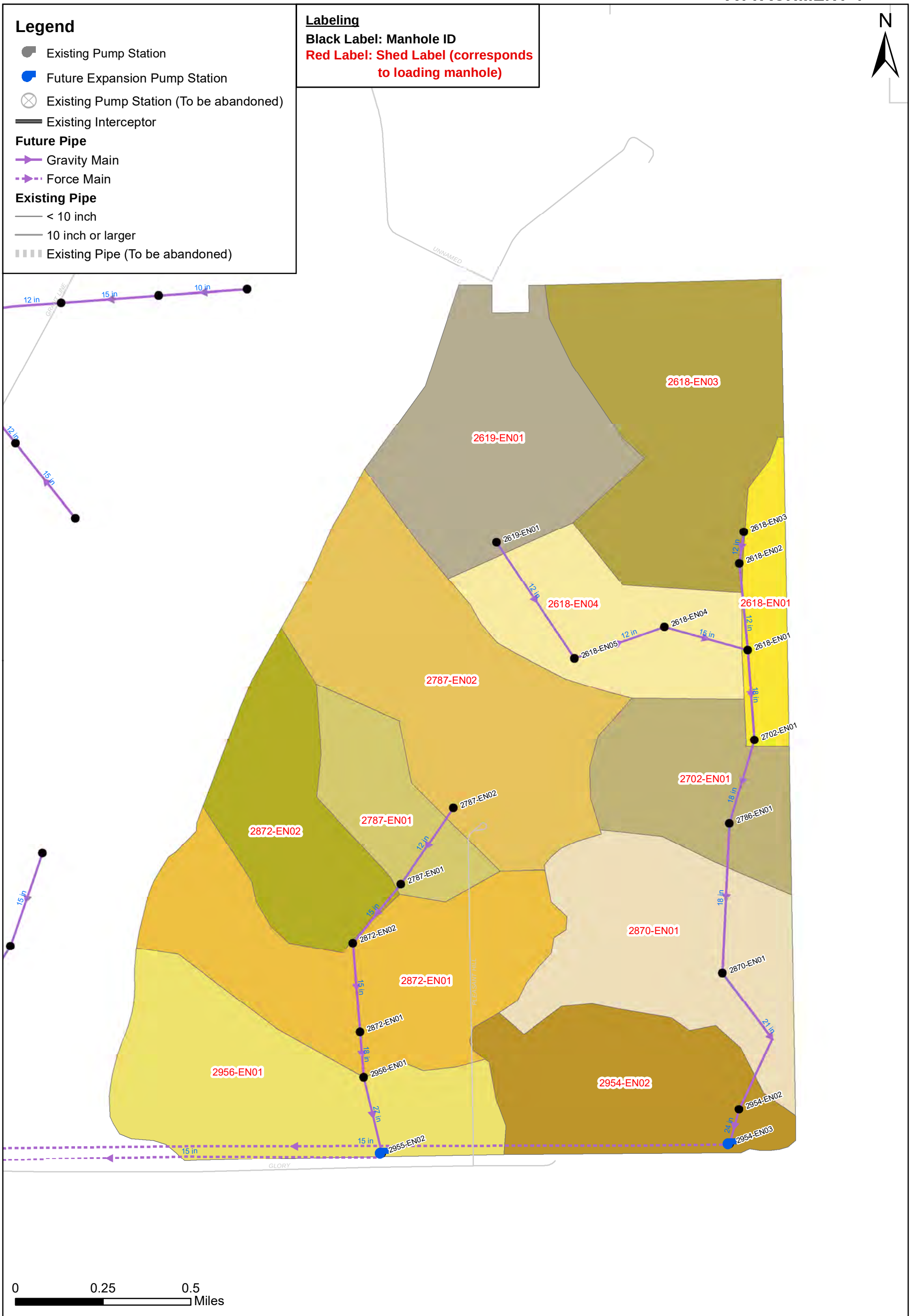
- < 10 inch
- 10 inch or larger
- Existing Pipe (To be abandoned)

Labeling

Black Label: Manhole ID

Red Label: Shed Label (corresponds to loading manhole)

N



0 0.25 0.5 Miles

SACRAMENTO AREA SEWER DISTRICT

SASD SYSTEM CAPACITY PLAN - 2015 UPDATE

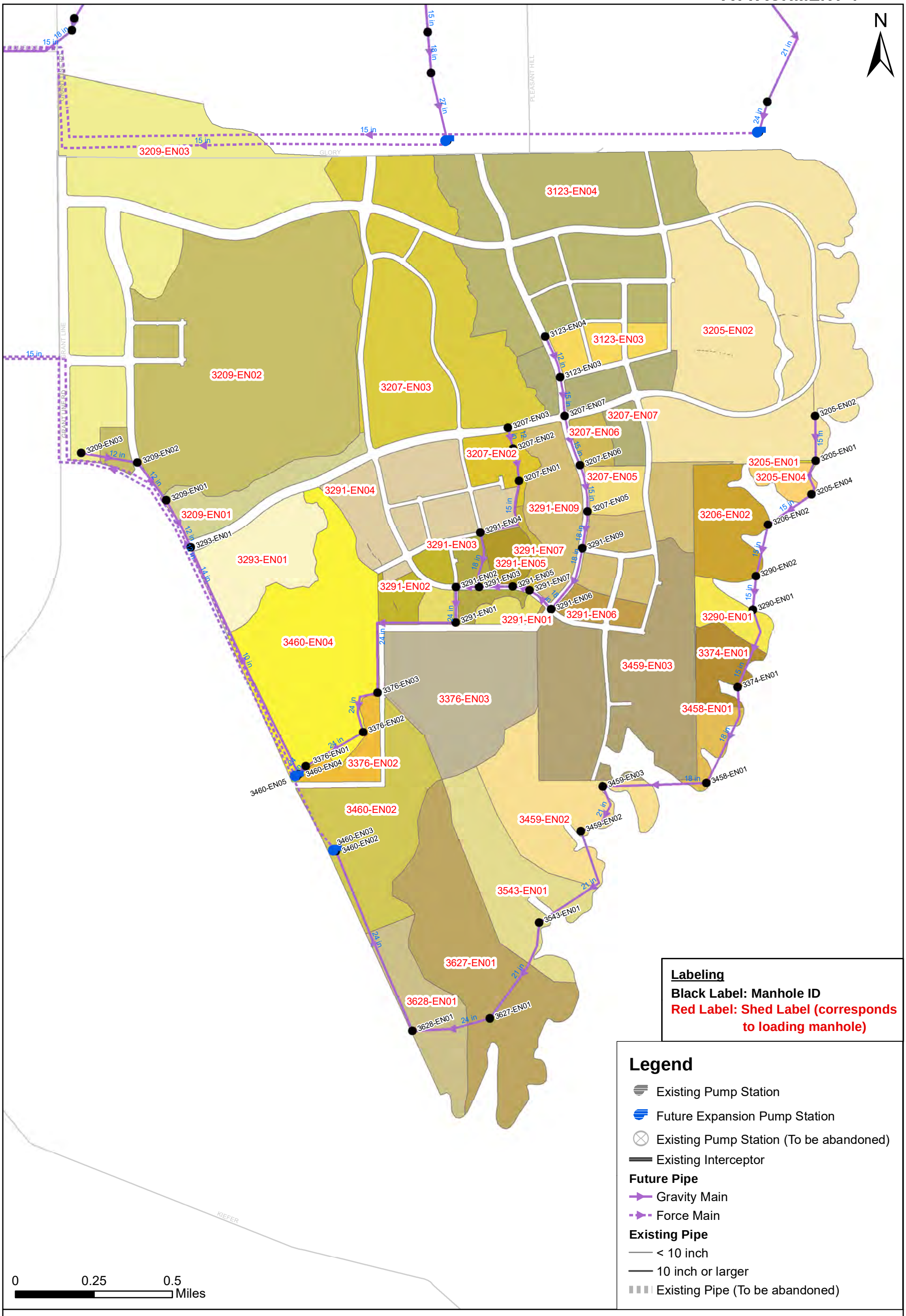
BR East Rancho

Sewer Shed Map - Area 4

Buildout Expansion Plan

FIGURE A.3-8

Updated: 3/18/2016


N
3209-EN03
3209-EN02
3209-EN01
3293-EN01
3460-EN04
3460-EN05
3460-EN03
3460-EN02
3460-EN01
3628-EN01
3627-EN01
3543-EN01
3459-EN03
3459-EN02
3458-EN01
3374-EN01
3290-EN01
3290-EN02
3206-EN02
3205-EN01
3205-EN02
3205-EN04
3207-EN01
3207-EN02
3207-EN03
3207-EN05
3207-EN06
3207-EN07
3291-EN01
3291-EN02
3291-EN03
3291-EN04
3291-EN05
3291-EN06
3291-EN07
3291-EN09
3123-EN03
3123-EN04
3376-EN01
3376-EN02
3376-EN03
3209-EN01
3209-EN02
3209-EN03
3293-EN01
3460-EN04
3460-EN02
3627-EN01
3628-EN01
3543-EN01
3459-EN02
3459-EN03
3458-EN01
3374-EN01
3290-EN01
3290-EN02
3206-EN02
3205-EN01
3205-EN04
3205-EN02

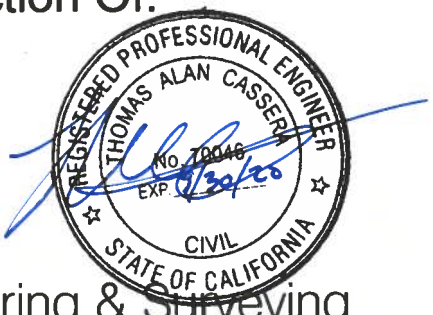
APPENDIX J.3

Level 2 Sewer Study

THE RANCH
LEVEL 2 SEWER STUDY

1st Submittal: September 2018
2nd Submittal: February 2019
3rd Submittal: March 2019
4th Submittal: June 2019
5th Submittal: July 2019

Prepared Under The Direction Of:



cta Engineering & Surveying

Civil Engineering ■ Land Surveying ■ Land Planning

TABLE OF CONTENTS

EXECUTIVE SUMMARY 1

INTRODUCTION 1

DESIGN 2

SEWER FLOW INFORMATION 2

SEWER ALIGNMENTS AND FACILITIES 2

CONCLUSIONS 2

APPENDIX A
- TABLE A-1 SEWER DESIGN SUMMARY SPREADSHEET

ATTACHMENTS
- LOCATION MAP
- LOCATION MAP WITH TOPOGRAPHY
- SITE PLAN
- SMALL LOT TENTATIVE MAP
- PRELIMINARY GRADING AND DRAINAGE PLAN
- SEWER SHED MAP
- SRCSD SERVICE AREA
- SASD SERVICE AREA
- AJ SUNRISE DOUGLAS TRUNK SHED
- FIGURE 6-1 - TRUNK SHEDS MAP - 2010 SASD SYSTEM CAPACITY PLAN
- BR EAST RANCH TRUNK SHED – 2015 AMENDMENT
- EMAIL EXCHANGE WITH SASD

EXECUTIVE SUMMARY

The purpose of this Level 2 Sewer Study is to identify trunk main sewer facilities for proposed "The Ranch" Special Planning Area project. This study will demonstrate the ability of the proposed gravity sewers to serve The Ranch (Project) and offsite areas from the east.

The Project SPA encompasses 530.06 acres in the City of Rancho Cordova. The Project is situated at eastern terminus of Chrysanthy Blvd. on the easterly side of Rancho Cordova Parkway, and approximately one half mile to the south of Douglas Blvd.. The proposed SPA development consists of mixed land uses and densities. There are proposed lots of low and medium density residential, multi-family, private and public parks, private recreation center, private and public landscape lots, open spaces, public protected areas, and water quality/detention basins. Protected areas and a portion of roadway adjacent to protected areas, not subject to future development, account for 229.16 acres of the gross project area. The net developable area is 300.9 acres. The project is planned to be constructed in several phases.

Proposed sewer system improvements will serve the Project needs, as well as the proposed Arista Del Sol and Cordova Hills Phase 1 to the east. Development of the Project will result in 1,967.6 ESDs resulting in PWWF of 1.613 mgd. The upstream project to the east, Arista Del Sol, is 137.2 acres. ADS will result in 899.1 ESD's and 0.697 mgd. An additional upstream project to the east is Cordova Hills, Phase 1 is approximately 342.0 acres. CHP1 will result in 3290 ESD's and 2.50 mgd (per Cordova Hills Pump Station and Force Main Design Report, Page 7-Table 2). Therefore, the total ESD's and PWWF are 6156.7 ESD's and 4.8101 mgd exiting the site at Rancho Cordova Parkway.

The proposed trunk main will exit into existing 24" sewer line stubbed at the intersection of Rancho Cordova Parkway and Chrysanthy Blvd.. The existing 24" sewer line discharges into Aerojet Interceptor 1B (36" trunk main) flowing westerly into SASD facility S-132 lift station. The SASD system capacity plan shows The Ranch will sewer to the west.

Interim facilities or pump station are not expected to be required for the proposed trunk main in Chrysanthy Boulevard or in-tract development for the Project SPA. However, SASD will require the Project SPA project provide appropriate upgrades to SASD facility S-132 lift station. The project scope and timing of S-132 lift station upgrades will be determined by SASD in the near future.

INTRODUCTION

Level of Study - The Project sewer study is a Level 2 report which focuses on the design of Major Trunk and sewer facilities serving The Ranch SPA and potential upstream sewer sheds.

Location - The Project is located in Rancho Cordova, east of Rancho Cordova Parkway, between Douglas Blvd., Kiefer Road, and Grant Line Road. See the Vicinity Map, Figure 1.

Topography – Lower Morrison Creek South traverses the Project, generally along a southwesterly flow path, joined by lesser tributary channels entering the site on the northern and eastern boundaries. Existing site topography is undulating, ranging from approximately 168.5 feet to 200 feet in elevation (NGVD 1929). Adjacent property to north and west are developed residential while the properties to the south and east are similar rolling agricultural land uses. Adjacent offsite area may drain into the natural channel network.

Project Description - The Project is a proposed residential subdivision consisting of 1,472 single family lots, commercial/multi-family (253 units), neighborhood park sites, and open space lots. Proposed site grading enables gravity sewer service throughout the project. The proposed in-tract collection system will discharge at a single point into off-site sewer in Rancho Cordova Parkway at the location shown on the Sewer Study Map.

Land Use and Zoning – The current land use is vacant, agricultural grazing land. The existing zoning is AG-80. Proposed zoning is Special Planning Area Current zoning consisting of General Plan uses (LDR, MDR, RMU, CMU, P/QP, P/OS, and NR). The gross project area is 530.06 acres; protected areas/adjacent roadway comprises of 229.16 acres.

DESIGN

Assumptions – The Project sewer study is premised upon the following assumptions:

- Property east of the project will sewer to the west through future Chrysanthy Blvd. Property south of the project will sewer to the south. Adjacent parcels north and west of The Ranch are already sewered or will remain as open space.
- There is adequate capacity in existing, downstream sewer facilities. Please see the copy of a September 17, 2018 e-mail from Yadira Lewis, included with the attachments, there is sufficient capacity in the Aerojet Interceptor under existing conditions. Assuming the S132 pump station will be replaced by a Regional San facility that will not cause back-ups to the Aerojet Interceptor, the model predicts minor surcharging in the Aerojet Interceptor under buildout conditions.
- Groundwater will be confirmed through future Geotechnical studies for the project. Recent information from monitoring wells in the area suggests groundwater is 140 below ground surface.
- "Protected Areas" will be preserved in perpetuity per South Sacramento HCP requirements, and granted to a third party. Since Protected Areas will not be developed, ESD's have not been assigned to these lands as it is not practical to demonstrate capacity in the downstream sewer collection systems for these areas.

Approach – Design of the proposed Project sewer system followed the sequence described as follows.

- Sewer sheds reflect project layout shown on the accompanying Sewer Shed Map.
- Design flows, summarized in Table A-1, Appendix A, adhere to SASD Design Standards, dated March 29, 2019.
- Pipe sizes and slopes meet applicable design criteria.

Design Criteria - Design of the proposed Project sewer system is based on the following criteria.

- Sewer flow is calculated on the basis of 6 ESD (Equivalent Single-Family Dwelling) per acre, or the actual count within a shed, whichever is greater. Multifamily sewer flow is calculated at 75% per ESD unit.
- Commercial and Park areas use a design flow of 6 ESD per acre.
- Design flows are computed using formulas from Section 201.2.2 of SASD standards and specifications:
    - PWWF (mgd) = ADWF *PF +I/I
    - ADWF (mgd) = (310 GPD/ESD)*(ESD/ac)*(ac)/1,000,000
    - PF = 3.5 - 1.8*Q^0.05, where Q=ADWF, PF= 1.2 minimum
    - I/I = 1,400 gpd/ac (new pipeline)
- Design of gravity sewers adheres to the following, from Section 202 of SASD standards and specifications:
    - The minimum pipe size (diameter) is 8 inches.
    - The minimum velocity is 2 fps when the pipe is ½ full (collector) or full (trunk).
    - The 'n' value is 0.013.
    - The minimum slope for a collector serving fewer than 6 ESDs is 0.007.
    - The minimum slope for an 8" sewer is 0.0035.

SEWER FLOW INFORMATION

On-site flow from The Ranch SPA totals 1,967.6 ESDs, resulting in PWWF of 1.613 mgd. There would be off-site contribution from proposed Arista Del Sol project of approximately 899.1 ESD's and 0.697 mgd (12" gravity trunk main, and Cordova Hills Phase 1 project of approximately 3290 ESD's and 2.50 mgd (20" FM),

SEWER ALIGNMENT & FACILITIES

- No interim facilities are required for the Project. All pipes are sized for ultimate PWWF.
- Ultimate facilities consist of the following:
    - 8-inch in-tract gravity sewer pipe
    - 12-inch to 21-inch trunk main sewer pipe in Chrysanthy Blvd.
    - 24-inch offsite gravity sewer located in Rancho Cordova Parkway, west from the project entry to the existing manhole in Rancho Cordova Parkway as shown.

CONCLUSIONS

The Level 2 Sewer Study for the Project demonstrates the ability of the proposed gravity system to serve the project. System components are sized for ultimate conditions. According to SASD staff, capacity upgrades will be required at SASD facility S-132 pump station. However, the cost, scope, and timing of the necessary upgrades are not determined as of this date.

APPENDIX A

TABLE A-1 SEWER DESIGN SUMMARY SPREADSHEET

TABLE A-1

THE RANCH SEWER DESIGN SUMMARY

START NODE	STOP NODE	LAND USE	LAND USE AREA (AC)	LAND USE ESDs @ 6 ESD/AC	LAND USE ESD by Lot Count	LAND USE MAX ESDs	TOTALS AREA (AC)	TOTALS CUM ESDs	I/I[1/] (mgd)	ADWF[2/] (mgd)	PF[3/]	PDWF[4/] (mgd)	PWWF[5/] (mgd)	Project PWWF[5/] (cfs)	Total PWWF[5/] (mgd)	Total PWWF[5/] (cfs)	PIPE DATA DIA (in)	PIPE DATA S (ft/ft)	PIPE DATA Capacity @ S (cfs)	Capacity @ S (mgd)	US MAN HOLE DEPTH (FT)	V @ PWWF[6/] (fps)
CHP1	ADS1	R	-	-	-	-	-	-	-	-	-	-	-	-	2.5000	3.8681	20	FM	n/a	n/a	13.7	n/a
ADS1	A	R	-	-	-	-	-	-	-	-	-	-	0.6970	1.0784	3.1970	4.9465	12	0.0255	5.69	3.68	13.7	7.79
A	A1	R	66.6	399.6	385	399.6	66.6	399.6	0.0932	0.1239	1.88	0.2327	0.3259	0.5043	3.5229	5.4508	21	0.0020	7.09	4.58	23.1	3.10
A1	A2	R	0.0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0.0000	0	0.0000	21	0.0020	7.09	4.58	26.3	3.42
A2	B	R	0.0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0.0000	0	0.0000	21	0.0020	7.09	4.58	25.4	3.43
B	B1	R	76.2	457.2	384	457.2	142.8	856.8	0.1999	0.2656	1.82	0.4822	0.6821	1.0554	3.8791	6.0019	21	0.0020	7.09	4.58	26.0	3.15
B1	C	R	0.0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0.0000	0	0.0000	21	0.0020	7.09	4.58	32.6	3.45
C	C1	R	40.1	240.6	197	240.6	182.9	1097.4	0.2561	0.3402	1.79	0.6105	0.8665	1.3407	4.0635	6.2872	21	0.0020	7.09	4.58	31.4	3.34
C1	C2	R	0.0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0.0000	0	0.0000	21	0.0020	7.09	4.58	30.7	3.49
C2	D	R	0.0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0.0000	0	0.0000	21	0.0020	7.09	4.58	30.0	3.49
D	D1	R	43.1	258.6	133	258.6	226.0	1356.0	0.3164	0.4204	1.78	0.7467	1.0631	1.6449	4.2601	6.5913	21	0.0020	7.09	4.58	29.4	3.35
D1	D2	R	0.0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0.0000	0	0.0000	21	0.0020	7.09	4.58	28.2	3.55
D2	E	R	0.0	0.0	0	0.0	0.0	0.0	0	0	0	0	0	0.0000	0	0.0000	21	0.0020	7.09	4.58	26.8	3.86
E	E1	R	59.2	355.2	402	402.0	285.2	1758.0	0.3993	0.5450	1.75	0.9558	1.3551	2.0966	4.5521	7.0431	21	0.0025	7.92	5.12	25.8	4.95
E1	F	MF	8.0	48.0	161	161.0	293.2	1919.0	0.4105	0.5949	1.75	1.0388	1.4492	2.2423	4.6462	7.1888	21	0.012	18.07	11.68	23.9	7.04
F	POC	COMM	8.1	48.6	48.6	48.6	301.3	1967.6	0.4218	0.6872	1.73	1.1913	1.6131	2.4958	4.8101	7.4423	24	0.002	7.84	5.07	23.7	4.88
			301.3	1807.8	1710.9	1967.6	301.3		0.4218													

[1/] 1400 gpd/ac

[2/] 310 gpd/ESD * ESD/ac * A

[3/] 3.5-1.8*(Q^0.05) where Q is ADWF

[4/] ADWF * PF

[5/] ADWF * PF + I/I

[6/] see Flowmaster computations

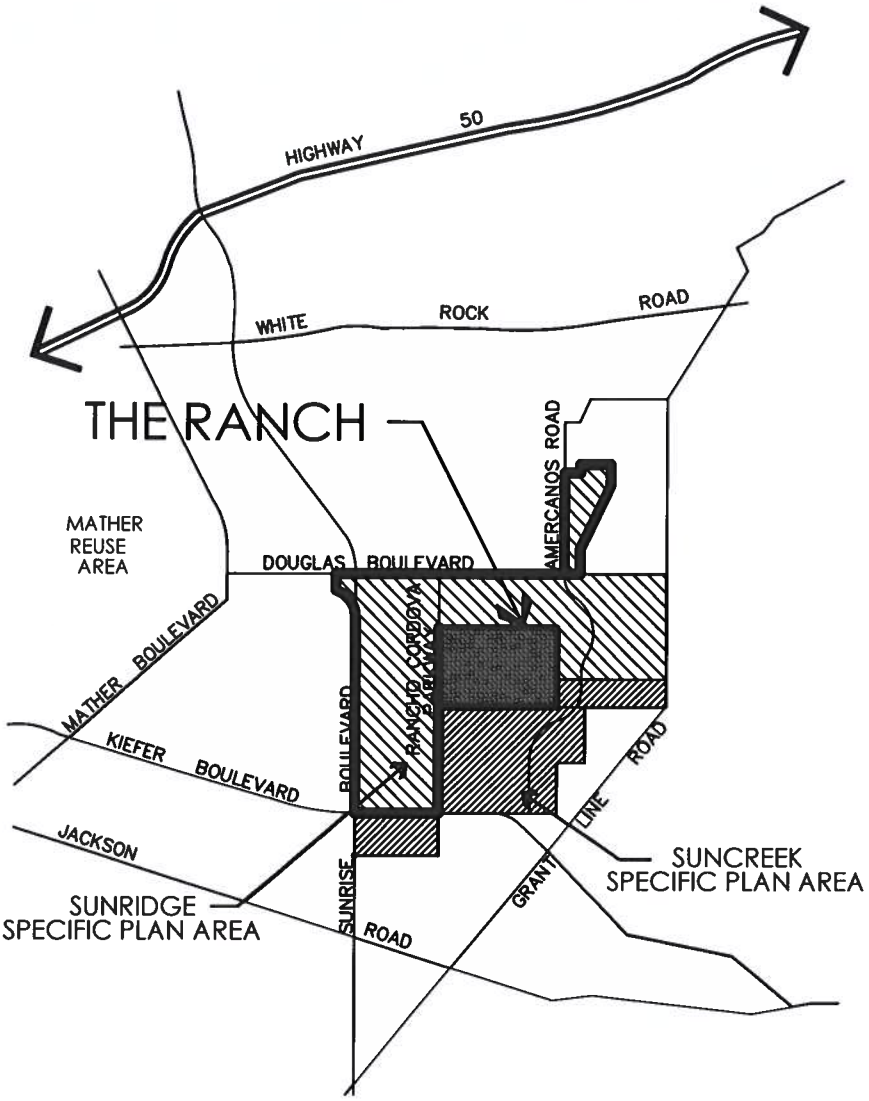
[7/] Multifamily (MF) is 75% ESD, 233 gpd/ESD

8/ COMMERCIAL (COMM) is 6 ESD/AC, 1900 gpd/ESD

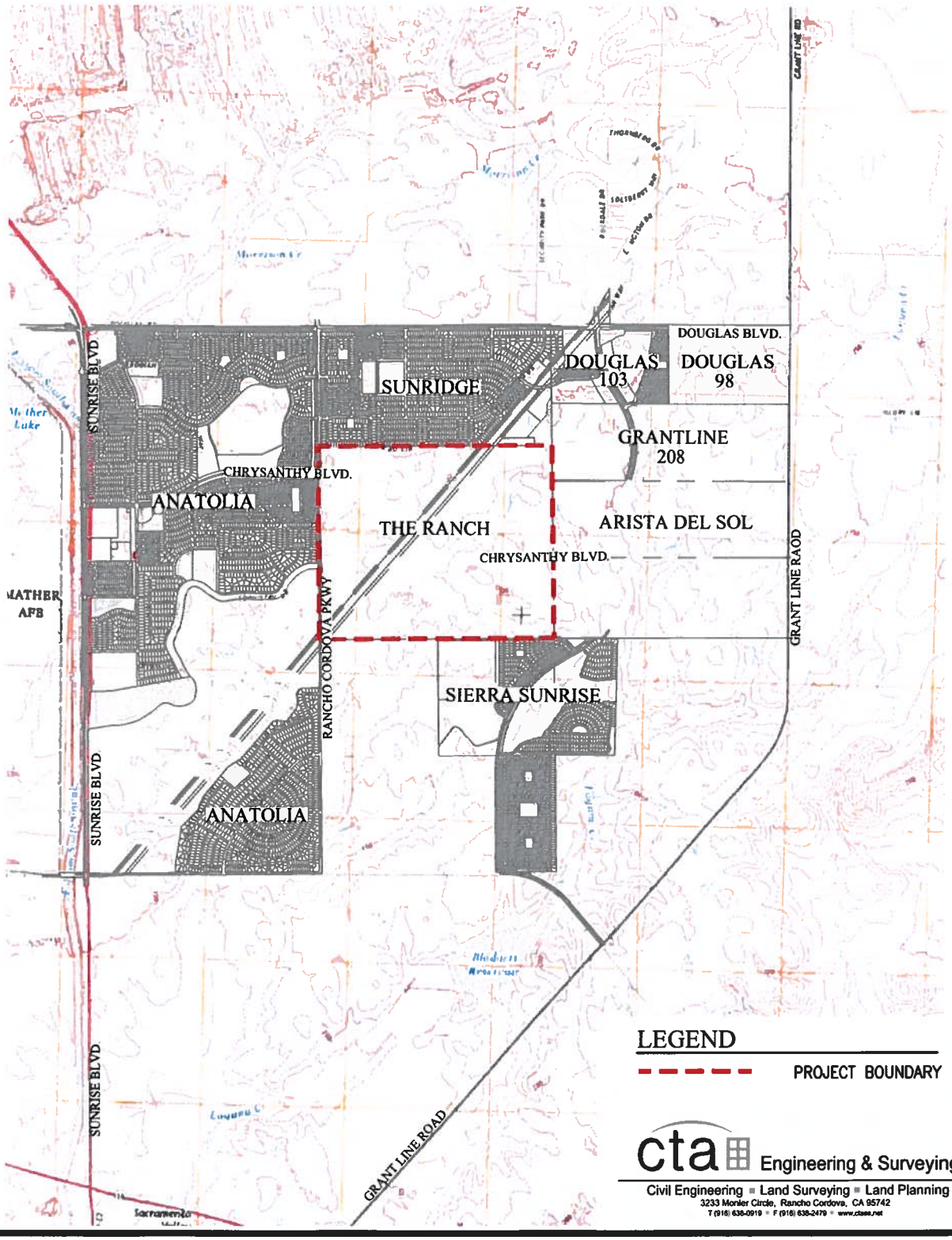
ATTACHMENTS

LOCATION MAP
LOCATION MAP WITH TOPOGRAPHY
SITE PLAN
SMALL LOT TENTATIVE MAP
PRELIMINARY GRADING AND DRAINAGE PLAN
SEWER SHED MAP
SRCSD SERVICE AREA
SASD SERVICE AREA
AJ SUNRISE DOUGLAS TRUNK SHED
FIGURE 6-1 - TRUNK SHEDS MAP - 2010 SASD SYSTEM CAPACITY PLAN
BR EAST RANCH TRUNK SHED – 2015 AMENDMENT
EMAIL EXCHANGE WITH SASD

LOCATION MAP

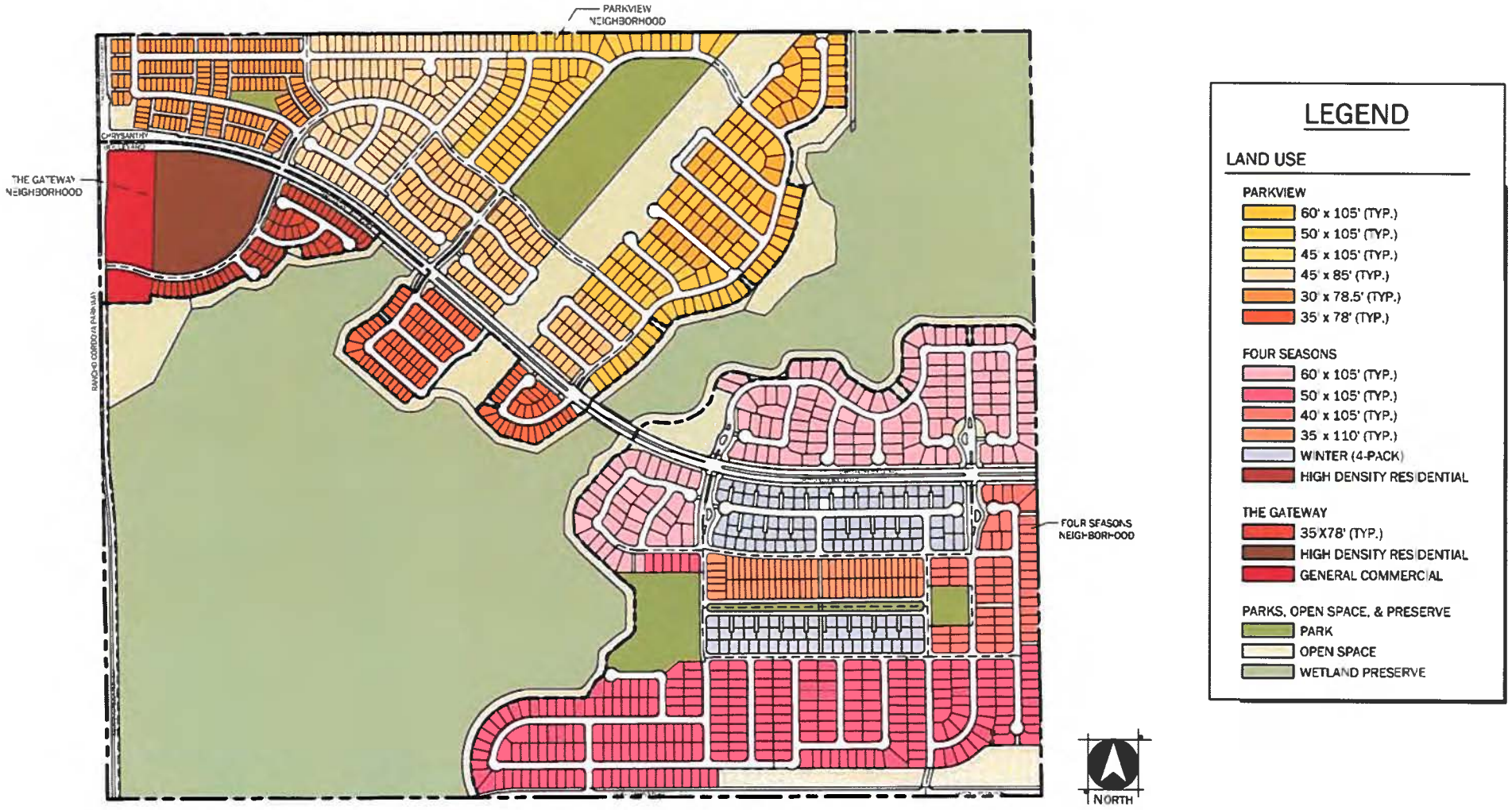


THE RANCH
LOCATION MAP
RANCHO CORDOVA, CALIFORNIA
NOT TO SCALE AUGUST, 2018



cta Engineering & Surveying
Civil Engineering ▪ Land Surveying ▪ Land Planning
3233 Monier Circle, Rancho Cordova, CA 95742
T (916) 638-0919 ▪ F (916) 638-2479 ▪ www.ctaes.net

Exhibit 3: Land Use Plan (Proposed Zoning Districts)



ATTACHMENT 4

SMALL LOT TENTATIVE SUBDIVISION MAP

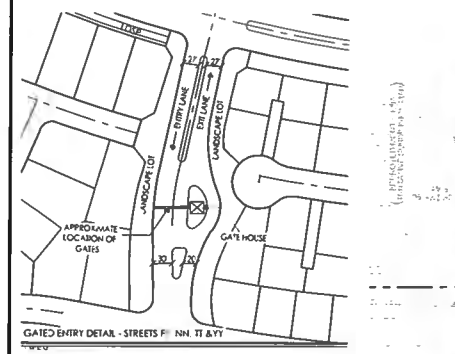
THE RANCH

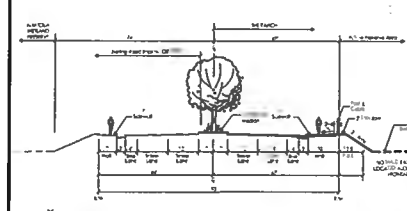
CITY OF RANCHO CORDOVA, CALIFORNIA

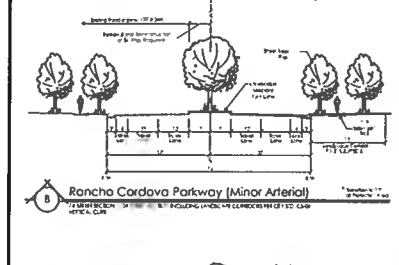
JUNE 2018

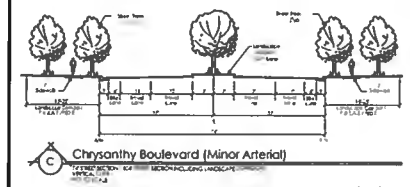
(REVISED: JULY 2018)

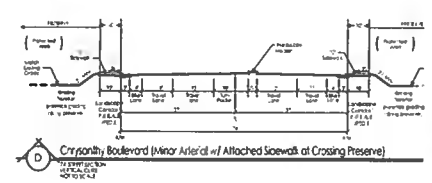
(REVISED: MARCH 2019)

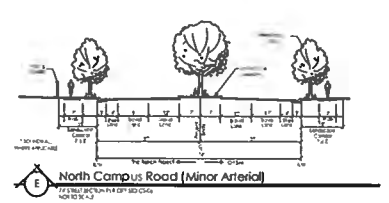


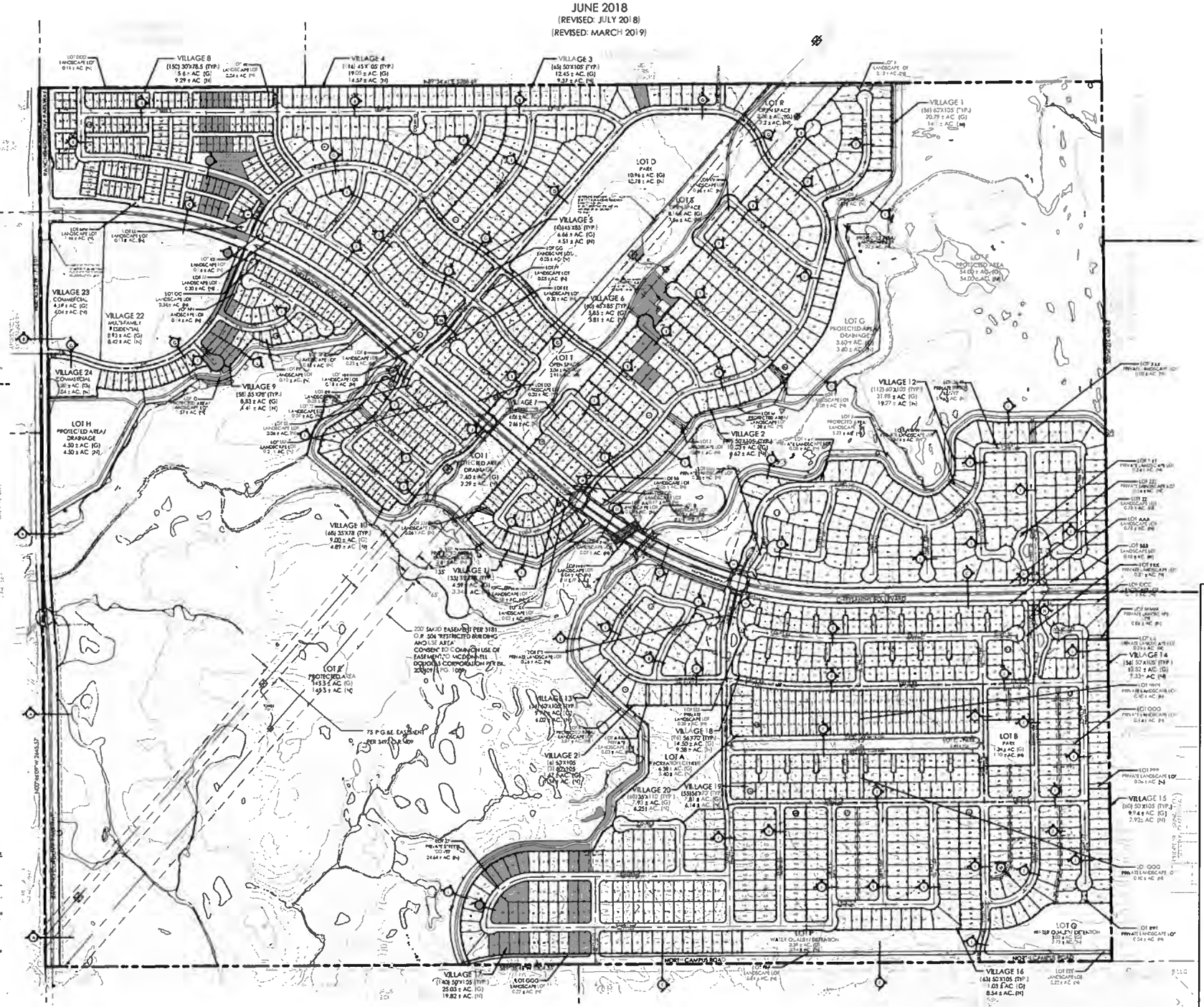


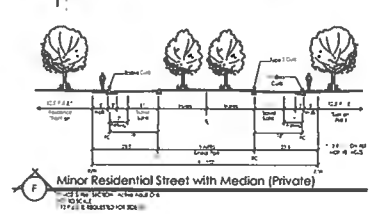


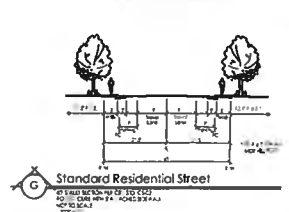


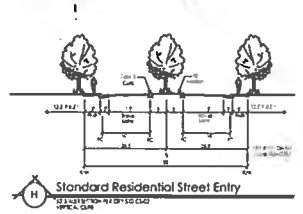


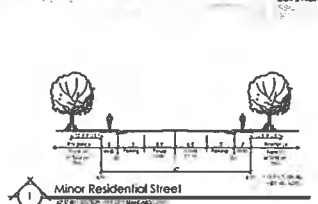


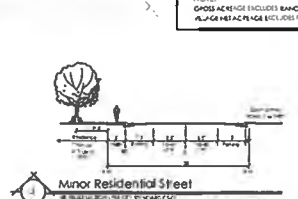


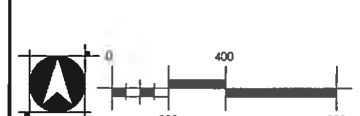


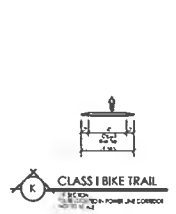


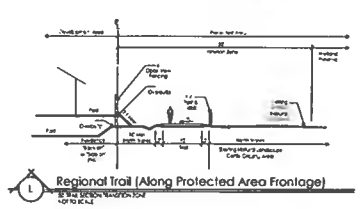


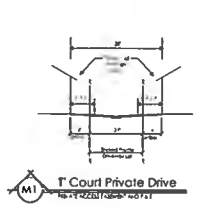


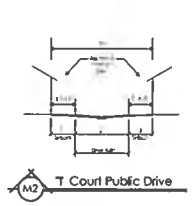


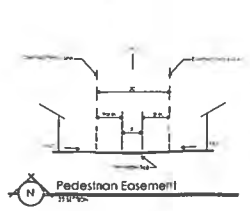


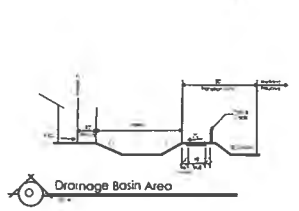




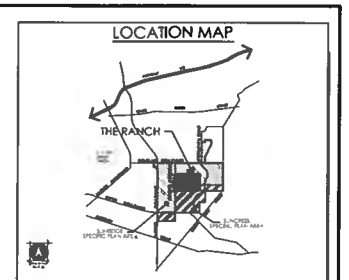








LOCATION MAP



PROJECT NOTES

OWNER/APPLICANT
E. HOVNANIAN HOMES 1301 DOUGLAS BLVD, STE 130 ROSEVILLE, CA 95661
CONTACT: CRAIG SCHIFFER
PHONE: (916) 745-3282

PLANNER
WOOD RODGERS INC.
3301 "C" STREET, BLDG. 100-B
SACRAMENTO, CA 95816
CONTACT: TOM GAISSERT
PHONE: (916) 341-7760

ENGINEER/SURVEYOR
CIVIL ENGINEERING AND SURVEYING
3233 MONIER CIRCLE
RANCHO CORDOVA, CA 95742
CONTACT: TONY CASSERA
PHONE: (916) 638-0919

ASSESSOR'S PARCEL NUMBERS
067-0040-009

AREA
530.1± ACRES GROSS

PUBLIC SERVICES & FACILITY PROVIDERS

IMPACT FEE DISTRICTS:	CITY OF RANCHO CORDOVA
WATER:	SACRAMENTO COUNTY WATER
SEWER:	SACRAMENTO AREA SEWER DISTRICT
DRAINAGE:	CITY OF RANCHO CORDOVA
ELECTRICITY:	SMUD
GAS:	PACIFIC GAS & ELECTRIC
TELEPHONE:	AT&T
SCHOOL DISTRICT:	ELK GROVE UNIFIED SCHOOL DISTRICT
FIRE DISTRICT:	SACRAMENTO METROPOLITAN FIRE DISTRICT
PARK DISTRICT:	CORDOVA RECREATION & PARK DISTRICT

NOTES:
1. SUBDIVIDER RESERVES THE RIGHT TO FILE MULTIPLE MAPS PURSUANT TO SECTION 66456.1 OF THE SUBDIVISION MAP ACT.
2. THIS IS AN APPLICATION FOR A DEVELOPMENT PERMIT.
3. A 10 FOOT PUBLIC UTILITY EASEMENT WILL BE LOCATED ADJACENT TO ALL PUBLIC STREETS AS APPROVED BY THE CITY ENGINEER. THIS APPLICATION REQUESTS 3.5 FOOT SETBACKS FOR 1 STORY HOMES AND 10 FEET FOR TWO STORY HOMES.
4. PARCEL B, APPLE LOT, HUMPHREYS & TOP IDEA TOWN PURPOSES ONLY AND DOES NOT CONSTITUTE AN APPROVAL OF ANY OF DEVELOPMENT NOR IMPACT, DEVELOPMENT PHASING SHALL BE DETERMINED AT FINAL MAP AND/OR IMPROVEMENT PLAN STAGE.
5. THIS APPLICATION ALSO SEEKS A GENERAL PLAN AMENDMENT, REZONE, AND SPECIAL DISTRICT PLANS.
6. ALL EXISTING STRUCTURES TO BE REMOVED AND ALL EXISTING WELLS TO BE ABANDONED UNLESS OTHERWISE NOTED ON PRELIMINARY GRADING PLANS.
7. THE AERIAL TOPOGRAPHY SHOWN HEREON WAS FLOWN IN NOVEMBER 2005.
8. THIS EXHIBIT IS FOR TENTATIVE MAP PURPOSES ONLY. ALL SITE AREAS SHOWN ARE APPROXIMATE PRIOR TO FINAL MAP.
9. PARK FEES FOR ALL PHASES WILL BE DETERMINED AT THE ACTUAL SITE DEVELOPMENT PERMIT.
10. HOMEOWNERS ASSOCIATION TO BE CREATED FOR MAINTENANCE OF COMMON AREAS.
11. A 12.5 FOOT PUBLIC UTILITY EASEMENT WILL BE PROVIDED ADJACENT TO PUBLIC STREETS AND A 10 FOOT PUBLIC UTILITY EASEMENT WILL BE PROVIDED ADJACENT TO PRIVATE STREETS AND PRIVATE DRIVEWAYS.

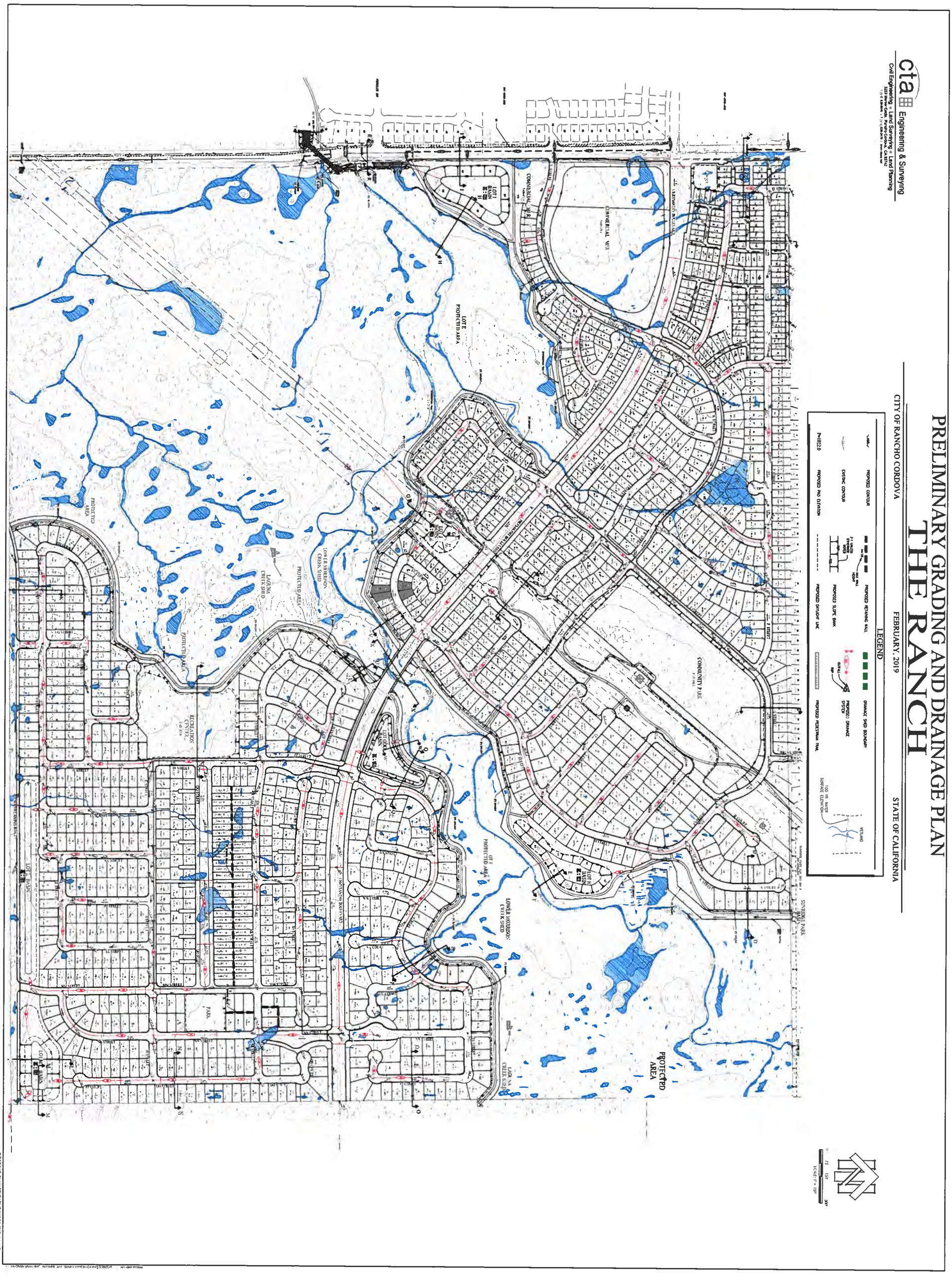
LAND USE SUMMARY

PARCEL / LOT NUMBER	GENERAL PLAN DESIGNATION	LAND USE (LOT SIZE)	GROSS ACRES	NET ACRES	DWELLING UNITS	GROSS DENSITY
TRADITIONAL SINGLE-FAMILY RESIDENTIAL						
VILLAGE 1	LDR	R-1-DS-PUD (4.1 - 7 DU/GROSS AC) (SMALL LOT)	20.79	14.1	81	3.9
VILLAGE 2	LDR	R-1-DS-PUD (4.1 - 7 DU/GROSS AC) (SMALL LOT)	16.00	8.62	49	3.1
VILLAGE 3	LDR	R-1-DS-PUD (4.1 - 7 DU/GROSS AC) (SMALL LOT)	32.65	9.32	53	1.6
VILLAGE 4	LDR	R-1-DS-PUD (4.1 - 7 DU/GROSS AC) (SMALL LOT)	19.80	14.57	83	4.2
VILLAGE 5	MDR (4.1 - 10.0 DU/AC)	R-1-DS-PUD (4.1 - 7 DU/GROSS AC) (SMALL LOT)	6.66	6.01	41	6.2
VILLAGE 6	MDR (4.1 - 10.0 DU/AC)	R-1-DS-PUD (4.1 - 7 DU/GROSS AC) (SMALL LOT)	4.04	3.85	27	6.7
VILLAGE 8	MDR (4.1 - 10.0 DU/AC)	R-1-DS-PUD (4.1 - 7 DU/GROSS AC) (SMALL LOT)	10.68	9.29	61	5.7
VILLAGE 9	MDR (4.1 - 10.0 DU/AC)	R-1-DS-PUD (4.1 - 7 DU/GROSS AC) (SMALL LOT)	9.33	8.45	59	6.3
VILLAGE 23	MDR	R-1-DS-PUD (4.1 - 7 DU/GROSS AC) (SMALL LOT)	4.89	4.89	34	6.9
SUB-TOTALS			114.41	77.57	738	
ACTIVE ADULT SINGLE-FAMILY RESIDENTIAL						
VILLAGE 17	LDR (2.1 - 4.0 DU/AC)	R-1-DS-PUD (4.1 - 7 DU/GROSS AC) (ACTIVE ADULT)	21.98	19.27	135	6.1
VILLAGE 22	LDR (2.1 - 4.0 DU/AC)	R-1-DS-PUD (4.1 - 7 DU/GROSS AC) (ACTIVE ADULT)	9.76	6.92	48	4.9
VILLAGE 24	LDR (2.1 - 4.0 DU/AC)	R-1-DS-PUD (4.1 - 7 DU/GROSS AC) (ACTIVE ADULT)	10.02	7.33	51	5.1
VILLAGE 12	MDR (4.1 - 10.0 DU/AC)	R-1-DS-PUD (4.1 - 7 DU/GROSS AC) (ACTIVE ADULT)	19.84	7.92	55	2.8
VILLAGE 14	MDR (4.1 - 10.0 DU/AC)	R-1-DS-PUD (4.1 - 7 DU/GROSS AC) (ACTIVE ADULT)	17.80	8.04	56	3.1
VILLAGE 15	MDR (4.1 - 10.0 DU/AC)	R-1-DS-PUD (4.1 - 7 DU/GROSS AC) (ACTIVE ADULT)	22.60	9.02	63	2.8
VILLAGE 16	MDR (4.1 - 10.0 DU/AC)	R-1-DS-PUD (4.1 - 7 DU/GROSS AC) (ACTIVE ADULT)	34.89	9.28	65	1.9
VILLAGE 18	MDR (4.1 - 10.0 DU/AC)	R-1-DS-PUD (4.1 - 7 DU/GROSS AC) (ACTIVE ADULT)	7.87	6.94	48	6.1
VILLAGE 20	MDR (4.1 - 10.0 DU/AC)	R-1-DS-PUD (4.1 - 7 DU/GROSS AC) (ACTIVE ADULT)	3.92	6.25	44	11.2
VILLAGE 19	MDR	R-1-DS-PUD (4.1 - 7 DU/GROSS AC) (ACTIVE ADULT)	1.67	1.34	9	5.4
SUB-TOTALS			130.15	92.91	693	
VILLAGE 22	HDR	MIX 5 FAMILY RESIDENTIAL	5.93	5.42		
SUB-TOTALS			5.93	5.42		
VILLAGE 29	GC	GENERAL COMMERCIAL	4.19	4.04		
VILLAGE 24	GC	GENERAL COMMERCIAL	1.20	1.00		
SUB-TOTALS			5.39	5.05		
LOT A	MDR	MEDIUM DENSITY RESIDENTIAL	6.20	5.40		
LOT B	P	PARK (PM-10)	1.34	1.10		
LOT C	P	PARK (PM-10)	1.40	1.40		
LOT D	P	PARK (PM-10)	10.96	10.78		
LOT E	HP	PROTECTED AREA (PM-10)	145.00	145.00		
LOT F	HP	PROTECTED AREA (PM-10)	64.00	64.00		
LOT G	HP	PROTECTED AREA/DRAINAGE (PM-10)	10.70	10.39		
LOT M	HP	PROTECTED AREA/DRAINAGE (PM-10)		15.90		
LOT N	P	PARK (PM-10)	4.39	3.62		
LOTS P-U	P/HP	OPEN SPACE/PARK	14.16	13.80		
LOTS V, XX	P	PUBLIC OPEN SPACE		9.62		
LOTS XXX, AAAA	L	WATER DETENTION		2.88		
LOTS Y, ZZ	HOP	PRIVATE OPEN SPACE		2.50		
LOT W	LDR/MDR & P	PRIVATE OPEN SPACE		20.90		
LOT BBB	LDR/MDR & P	PRIVATE OPEN SPACE		21.50		
MAJOR NEIGHBORHOOD			18.41	8.42		
SUB-TOTALS			269.33	367.02		
TOTALS			530.10	530.10	1,431	

NOTE:
GROSS ACREAGE EXCLUDES RANCHO CORDOVA PARKWAY & CHRYSANTHY BOULEVARD AND ONLY
ALIGNMENTS/PAVING EXCLUDES PROTECTED AREA, LANDSCAPE LOTS, PARK & PUBLIC LANDSCAPE LOTS, PRIVATE DRIVES AND PRIVATE & PUBLIC STREETS

K Hovnanian

WOOD RODGERS
ENGINEERING • MAPPING • PLANNING • SURVEYING
3301 C St, Bldg. 100-B Tel 916.341.7760
Sacramento, CA 95816 Fax 916.341.7767


cta Engineering & Surveying
Civil Engineering ■ Land Surveying ■ Land Planning
PRELIMINARY GRADING AND DRAINAGE PLAN
THE RANCH
CITY OF RANCHO CORDOVA
FEBRUARY, 2019
STATE OF CALIFORNIA
LEGEND
PROPOSED CONTOUR
EXISTING CONTOUR
PROPOSED PAD ELEVATION
PROPOSED RETAINING WALL
PROPOSED SLOPE BANK
PROPOSED DAYLIGHT LINE
DRAINAGE SHED BOUNDARY
PROPOSED DRAINAGE SYSTEM
PROPOSED PEDESTRIAN TRAIL
COMMERCIAL MIX
COMMUNITY PARK
LOT I BASIN
LOT E PROTECTED AREA
LOT J BASIN
LOT K BASIN
LOT L BASIN
LOT M BASIN
LOWER MORRISON CREEK SHED
LAGUNA CREEK SHED
PROTECTED AREA
RECREATION CENTER
PARK
GRADING PLAN/TENTATIVE SUBDIVISION MAP

THE RANCH - NORTH
SEWER SHED MAP
CITY OF RANCHO CORDOVA, CALIFORNIA

SCALE: 1"=100' JULY, 2019

LEGEND

EXISTING SEWER — 21"SS —
PROPOSED SEWER — 21"SS —
SEWER SHED BOUNDARY
NODE POINT (X)
BOUNDARY LINE
PROPERTY LINE

SHED TABLE		
NODE	ACREAGE	MAX ESD
CHP1	342.0	3,290
ADS1	137.2	899.1
A	66.6	399.6
B	76.2	457.2
C	40.1	240.6
D	43.1	258.6
E	59.2	402.0
E1	8.0	*161.0
F	8.1	48.6
TOTAL	780.5	6,156.7

*MAX ESD IS 75% OF PRELIMINARY MF UNIT COUNT.

0 50' 100' 200'
SCALE: 1" = 100'

GRANT DEED
SUNRIDGE PARK VILLAGE 8A
SUNRIDGE PARK VILLAGE 9A
BASIN OUTFALL DITCH
RANCHO CORDOVA PARKWAY
CHRYSANTHY BOULEVARD
SHED E (402 UNITS)
SHED E1 (*215 UNITS)
SHED D (133 UNITS)
SHED C (197 UNITS)
SHED B (355 UNITS)
PARK
OPEN SPACE
COMMERCIAL
MULTI-FAMILY
PROTECTED AREA 160.86 AC
PROTECTED AREA 64.14 AC
ANATOLIA IV VILLAGE I
ANATOLIA II VILLAGE 11
ANATOLIA II VILLAGE 12B

NODE F A(acres)=8.1AC ΣA(acres)=780.5 AC ESD=48.6 Σ ESD=5,156.7 Q=4.6970mgd
NODE E1 A(acres)=8.0 AC ΣA(acres)=772 AC ESD=161.0 Σ ESD=4,708.1 Q=4.6482mgd
NODE E A(acres)=59.2 AC ΣA(acres)=764 AC ESD=402.0 Σ ESD=5,947.1 Q=4.5521mgd
NODE D2 A(acres)=0 ΣA(acres)=705.2AC ESD=0 Σ ESD=5,545.1 Q=4.2601mgd
NODE D1 A(acres)=0 ΣA(acres)=705.2AC ESD=0 Σ ESD=5,545.1 Q=4.2601mgd
NODE D A(acres)=43.1AC ΣA(acres)=705.2 AC ESD=258.6 Σ ESD=5,545.1 Q=4.2601mgd
NODE C2 A(acres)=0 ΣA(acres)=620.3 AC ESD=0 Σ ESD=4,997.4 Q=3.9274mgd
NODE C3 A(acres)=0 ΣA(acres)=662.1 AC ESD=0 Σ ESD=5,286.5 Q=4.0630mgd
NODE C A(acres)=40.1 AC ΣA(acres)=662.1 AC ESD=240.6 Σ ESD=5,286.5 Q=4.0630mgd
NODE B A(acres)=76.2AC ΣA(acres)=622.0AC ESD=457.2 Σ ESD=5,045.9 Q=3.8791mgd
NODE B1 A(acres)=0 ΣA(acres)=622.0 AC ESD=0 Σ ESD=5,045.9 Q=3.8791mgd
NODE A2 A(acres)=0 ΣA(acres)=545.8AC ESD=0 Σ ESD=4,588.7 Q=3.5229mgd

SSMH RIM=178.0 24" INV(OUT)=147.31 21" INV(IN)=147.58 D=20.4
SSMH RIM=178.9 21" INV OUT=154.19 21" INV IN=154.24 D=24.7
SSMH RIM=181.5 21" INV OUT=155.49 21" INV(IN)=155.54 D=26.0
SSMH RIM=183.4 21" INV OUT=156.22 21" INV IN=156.27 D=27.2
SSMH RIM=185.4 24" INV OUT=156.96 24" INV IN=157.01 D=28.4
SSMH RIM=187.3 21" INV OUT=157.71 21" INV IN=157.76 D=29.6
SSMH RIM=188.6 21" INV OUT=158.46 21" INV IN=158.51 D=30.1
SSMH RIM=190.0 21" INV OUT=159.22 21" INV IN=159.27 D=30.8
SSMH RIM=191.4 21" INV OUT=159.97 21" INV IN=160.02 D=31.4
SSMH RIM=193.5 21" INV OUT=160.96 21" INV IN=161.01 D=32.5
SSMH RIM=187.7 21" INV OUT=161.91 21" INV IN=161.96 D=25.8
SSMH RIM=188.4 21" INV OUT=162.95 21" INV IN=163.00 D=25.0

469 LF @ S=0.0141
500 LF @ S=0.0025
339 LF @ S=0.0025
347 LF @ S=0.0025
348 LF @ S=0.0025
352 LF @ S=0.0025
353 LF @ S=0.0025
450 LF @ S=0.0025
447 LF @ S=0.0025
496 LF @ S=0.0020
476 LF @ S=0.0020

(E)SSMH RIM=177.73 27"NW IN=149.93 27"NW OUT=149.85
(E)SSMH RIM=179.54 24"S IN=146.79 15"NW IN=145.42 27"S OUT=146.84
(E)SSMH RIM=179.79 27"NW IN=148.55 27"NW OUT=148.45
(E)SSMH RIM=178.22 CAN NOT OPEN
(E)SSMH RIM=178.17 27"NW IN=146.17 27"NW IN=146.17 36"NW OUT=145.97
(E)SSMH RIM=179.33 15"NW OUT=148.51 15"NW IN=148.56 12"W IN=163.23
(E)SSCO ∞ 15"NW OUT=148.86
(E)SSMH RIM=177.76 8"NW IN=164.65 12"W OUT=164.68
(E)SSMH RIM=176.52 8"NW(S)=170.24

cta Engineering & Surveying
Civil Engineering • Land Surveying • Land Planning
3233 Monier Circle, Rancho Cordova, CA 95742
T (916) 638-0919 • F (916) 638-2479 • www.ctaeis.net

M:\17-129-001\PLANNING\EXHIBITS\190708-SEWER STUDY EXHIBIT.dwg, 7/16/2019 4:17:13 PM, athomas, 1:1

THE RANCH - SOUTH

SEWER SHED MAP

CITY OF RANCHO CORDOVA, CALIFORNIA

SCALE: 1"=100' JULY, 2019

LEGEND

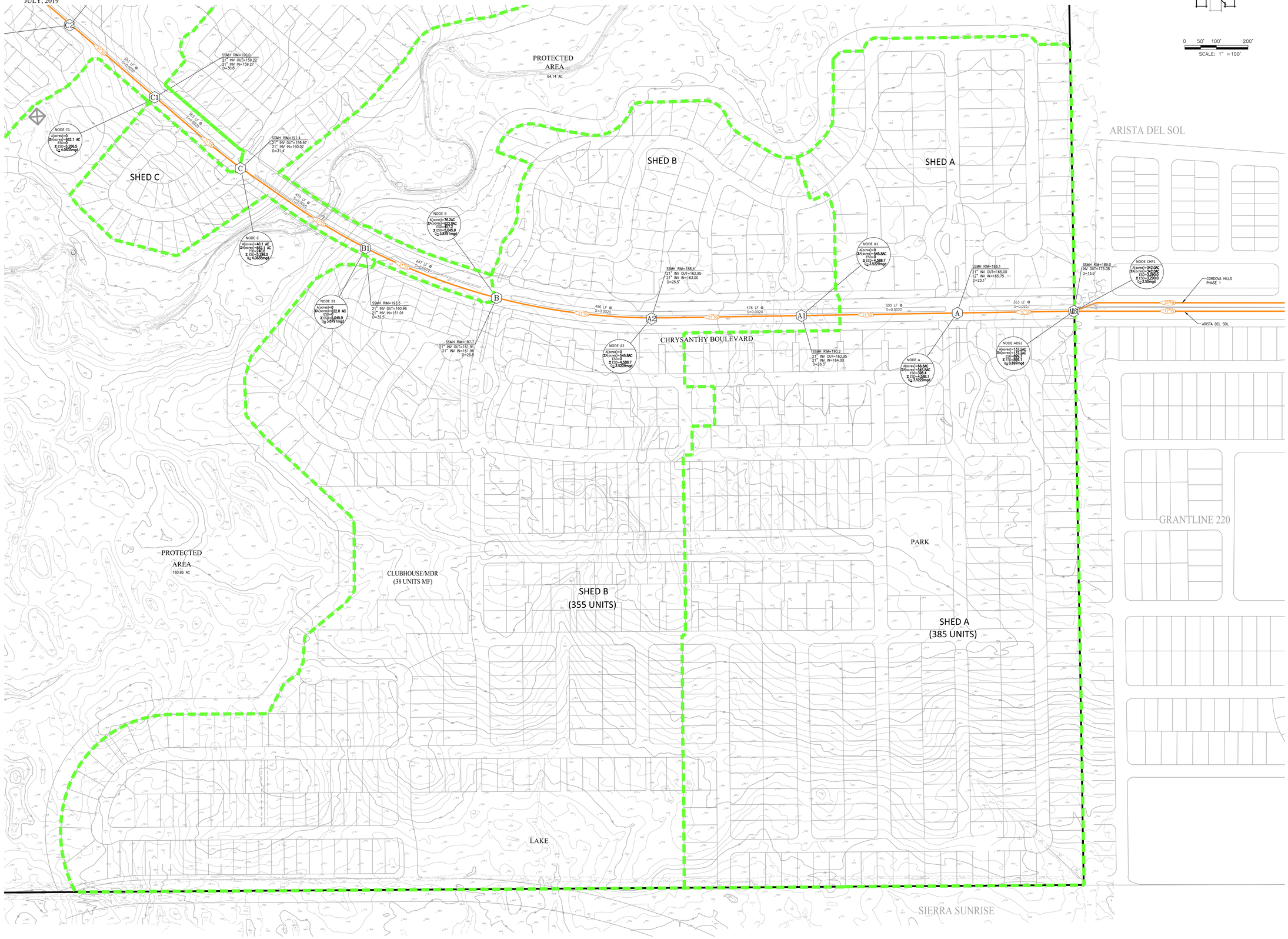
- EXISTING SEWER
- PROPOSED SEWER
- SEWER SHED BOUNDARY
- NODE POINT
- BOUNDARY LINE
- PROPERTY LINE

SHED TABLE		
NODE	ACREAGE	MAX ESD
CHP1	342.0	3,290
ADS1	137.2	899.1
A	66.6	399.6
B	76.2	457.2
C	40.1	240.6
D	43.1	258.6
E	59.2	402.0
E1	8.0	*161.0
F	8.1	48.6
TOTAL	780.5	6,156.7

*MAX ESD IS 75% OF PRELIMINARY MF UNIT COUNT.

0 50' 100' 200'

SCALE: 1" = 100'



cta Engineering & Surveying
Civil Engineering ■ Land Surveying ■ Land Planning
3233 Monier Circle, Rancho Cordova, CA 95742
T (916) 638-0919 ▪ F (916) 638-2479 ▪ www.ctaes.net

SRCSD SERVICE AREA

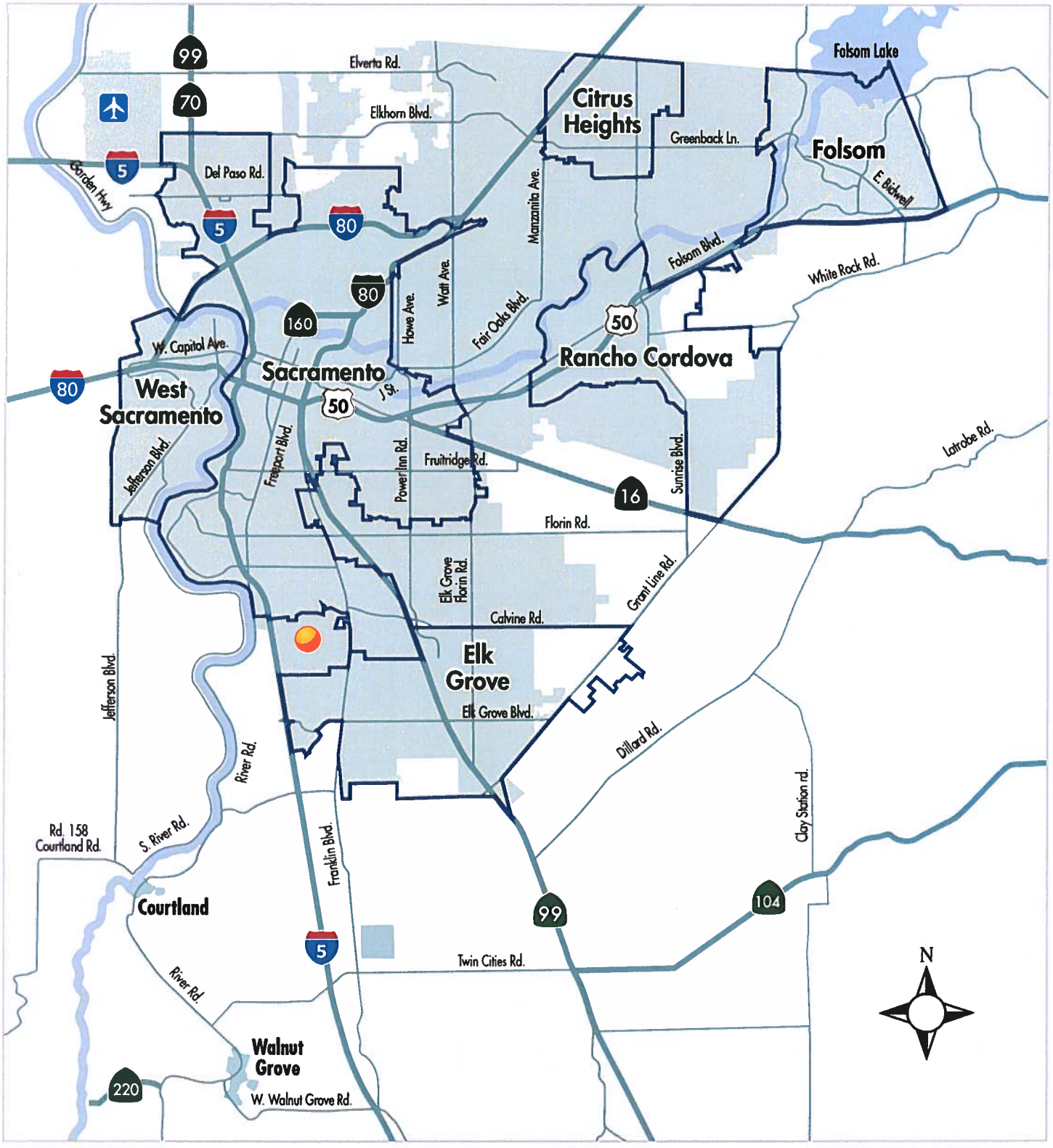


Exhibit G

SASD SERVICE AREA

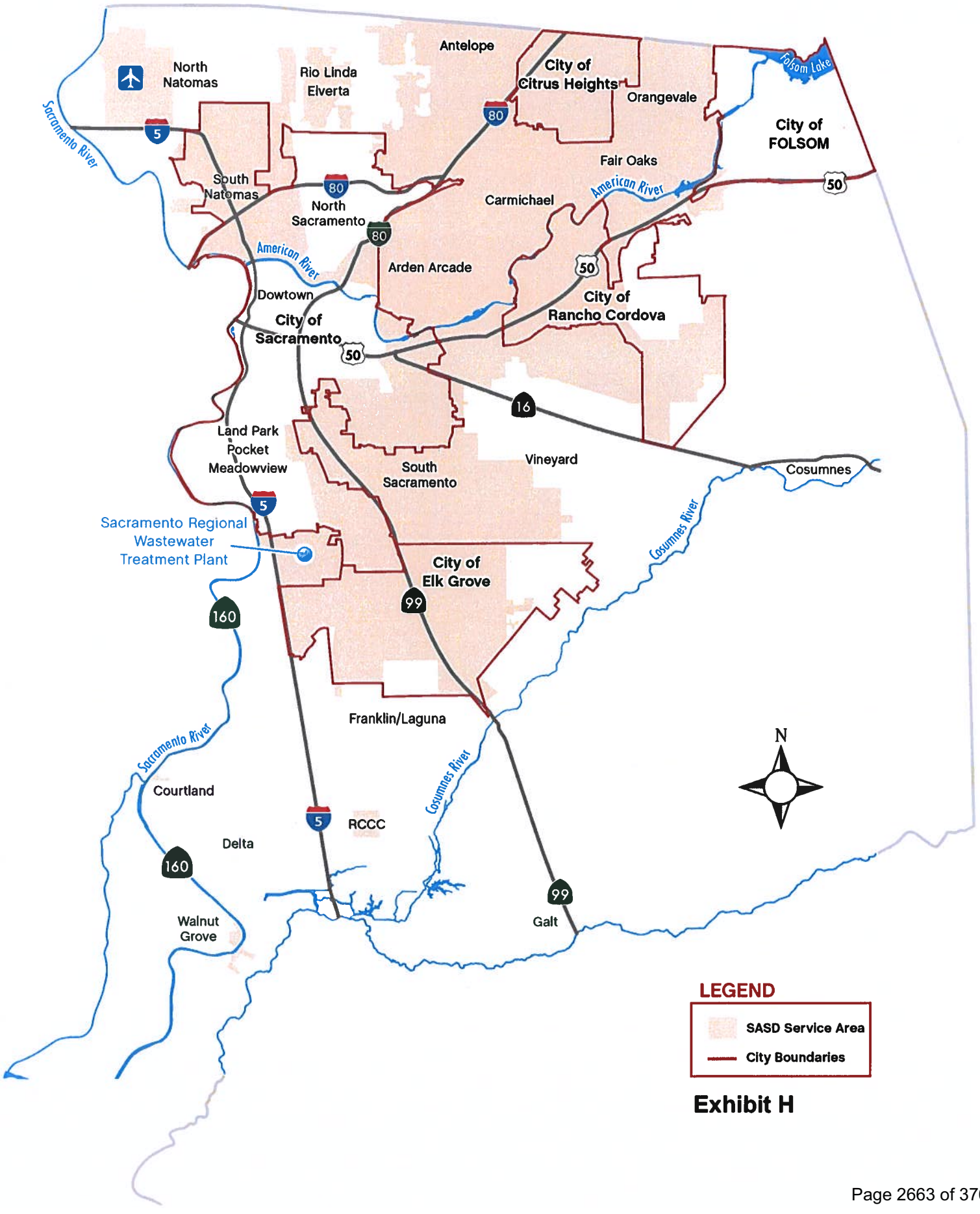
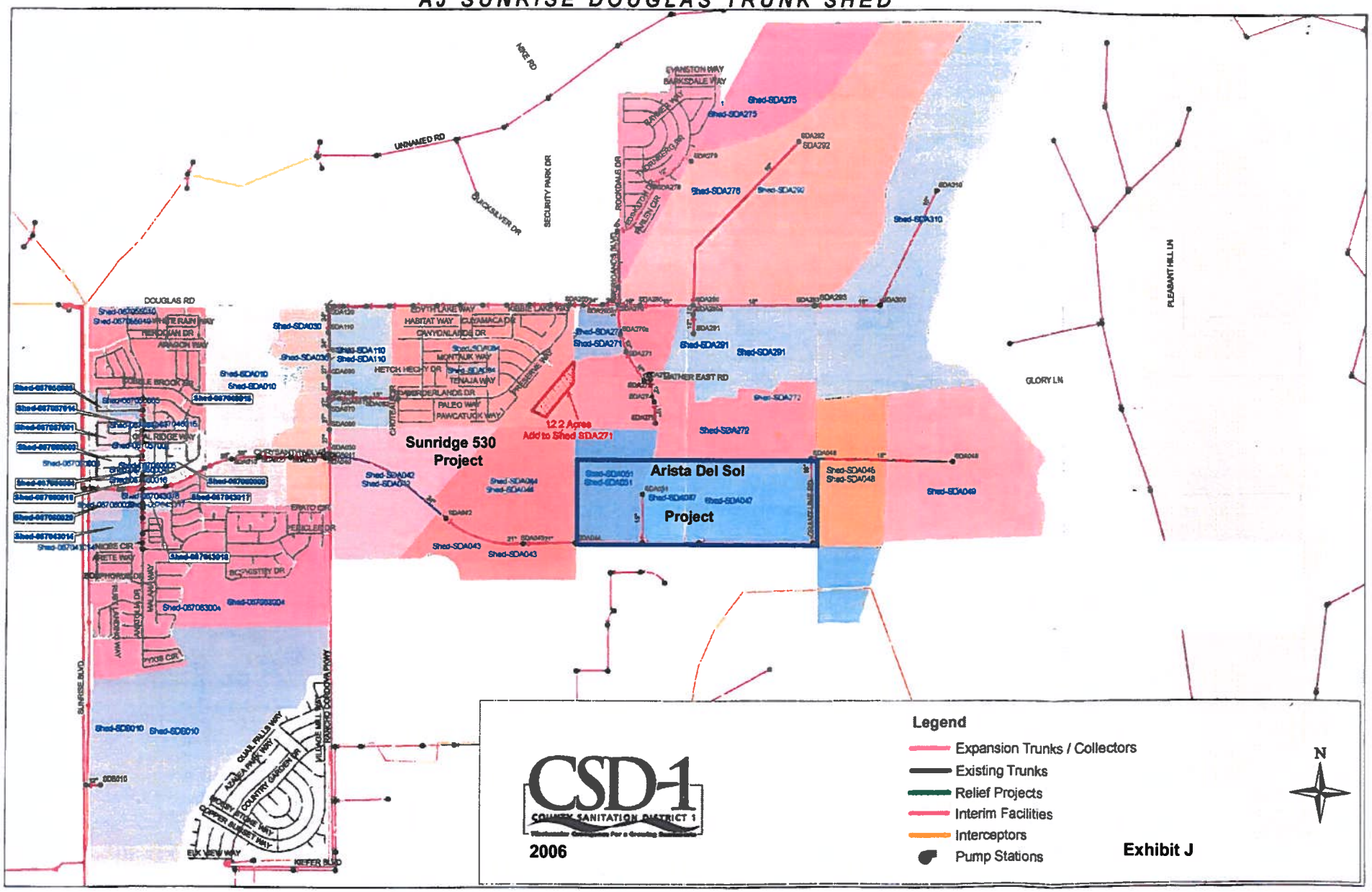
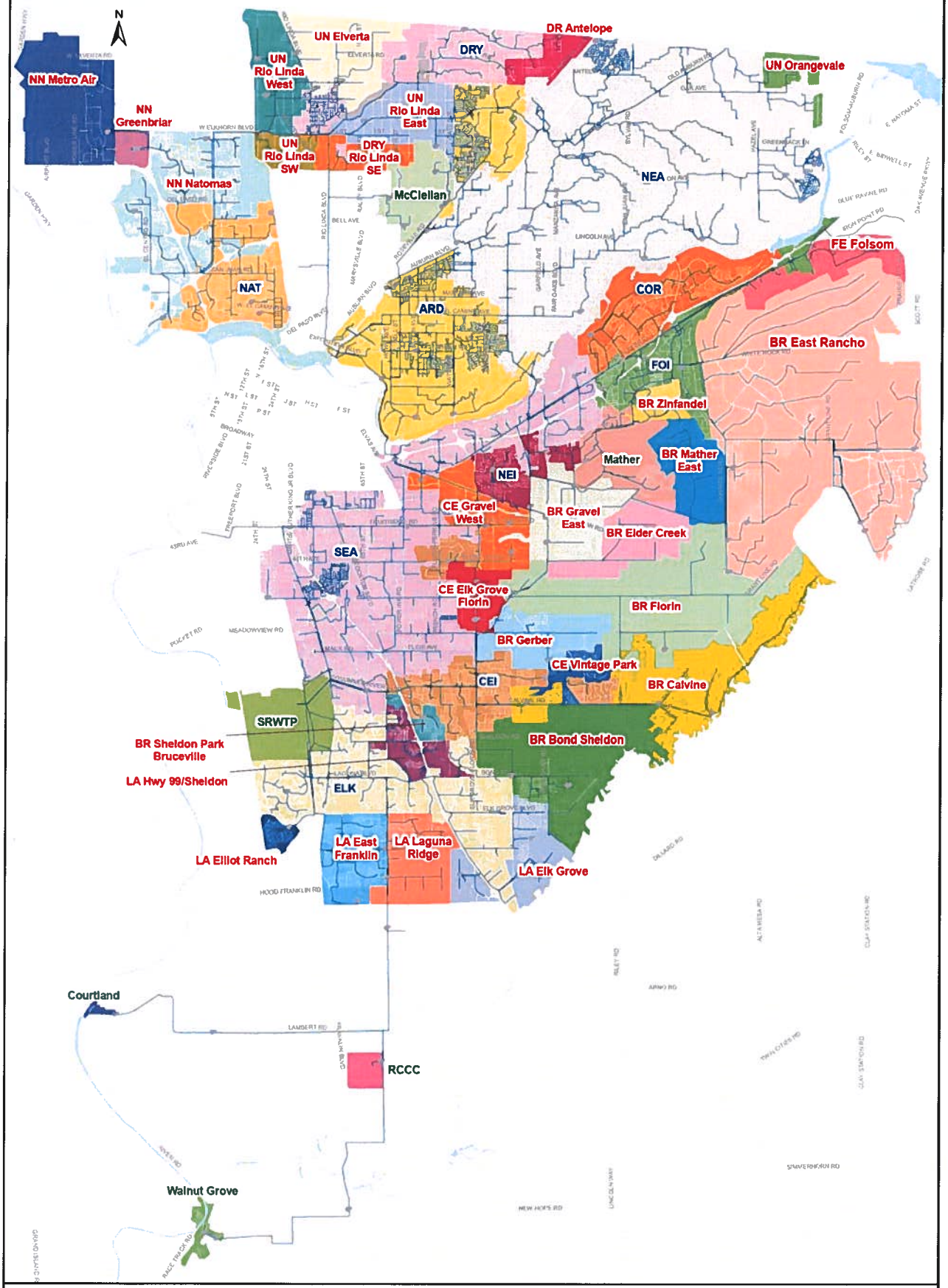


Exhibit H

AJ SUNRISE DOUGLAS TRUNK SHED



ATTACHMENT 4



Legend

Blue Label: Relief Area Shed
Red Label: Expansion Area Shed
Green Label: To be Determined

SACRAMENTO AREA SEWER DISTRICT

2010 SASD SYSTEM CAPACITY PLAN

Trunk Sheds Map

FIGURE 6-1

Date last revised: 9/6/2011

SASD 2010 SYSTEM CAPACITY PLAN EXPANSION TRUNK SHEDS

BR EAST RANCHO TRUNK SHED – *2015 AMENDMENT*

Introduction

This amendment summarizes the new BR East Rancho near-term and buildout expansion trunk shed plans. Due to recent development activity, SASD has proceeded with an update to the BR East Rancho Expansion Trunk Shed Plan, ahead of the scheduled 2020 System Capacity Plan (SCP) update.

The information in the 2010 SCP BR East Rancho Expansion Trunk Shed Plan was used as a starting reference for this 2015 update. The latest approved sewer study information was included in the update, along with the most recent land use information from the City of Rancho Cordova and Sacramento County. Significant changes to the 2010 SCP were made in areas that were previously planned to be served by future interceptors.

Area Description

The BR East Rancho Trunk Shed encompasses a large area located in the eastern part of Sacramento County, south of Folsom Boulevard. The western half of the shed lies in the City of Rancho Cordova, east of Sunrise Boulevard. The shed extends east to the Urban Services Boundary. The southern boundary includes Grant Line Road and the Urban Services Boundary.

Trunk System Facilities

The BR East Rancho **buildout** expansion trunks are planned to drain to either of two locations which are referred to as Location #1 Outfall and Location #2 Outfall. Location #1 Outfall is located at the S132 Chrysanthy Pump Station (PS), and it will serve the developments in the southern portion of the BR East Rancho shed. Location #2 Outfall is located adjacent to White Rock Road, approximately one-half mile east of Sunrise Boulevard, and it will serve the developments in the northern portion of the BR East Rancho shed. Flows at the two outfall locations are planned to be conveyed by future Regional interceptor facilities.

For the **near-term** conditions, initial flows from the developments in the northern portion of BR East Rancho (Rio Del Oro and Westborough) will drain to the S070 Sunrise White Rock PS system on the interim basis. Ultimately these developments will discharge to Location #2 Outfall. Flows from the developments in the southern portion of BR East Rancho (Anatolia, Arista Del Sol, Cordova Hills, Montelena, North Douglas, Sunridge Lot J, Sunridge Park, and SunCreek) will be conveyed to the S132 Chrysanthy PS.

The BR East Rancho Trunk Shed near-term expansion trunk facilities will be presented first, followed by the buildout summary. The planning trunk facilities are summarized for each of the development areas. The development areas are defined by the sewer studies names, and the areas without sewer studies have been given a name in most cases.

Please refer to the **BR East Rancho Planned Development Areas** map **(Figure A.3-1)** when reviewing the trunk shed plan descriptions below.

A. BR East Rancho Near-Term Expansion Trunk Facilities (Figure A.3-2)

Anatolia, Montelena, Sunridge Lot J, Sunridge Park, and North Douglas – These sheds discharge to the existing trunk system. Their flows are conveyed to S132 PS.

Arista Del Sol – The shed is served by an interim PS. The interim force main will convey flow northward and connect to the existing Douglas Trunk.

Cordova Hills – Phase 1 development will be served by a new permanent PS. Its force main will convey flow northward and connect to the existing Douglas Trunk on an interim basis. The upstream portion of the force main between the PS wet well and Chrysanthy Boulevard will be permanent. The downstream portion of the force main from Chrysanthy Boulevard to the existing Douglas Trunk will be interim until the permanent force main is extended west along Chrysanthy Boulevard and discharges to the Location #1 Outfall.

SunCreek – The Phase 1 development will be served by a new permanent PS. Its force main will convey flow northward and connect to the existing Aerojet Interceptor 1 on Chrysanthy Boulevard.

Rio Del Oro – The Phase 1 development will discharge to existing collectors on White Rock Road, and its flow will be conveyed to S070.

Westborough – The Phase 1 development will be served by an interim pump station. The interim force main will convey flow west along White Rock Road and discharge into the existing 10-inch S070 force main.

B. BR East Rancho Buildout Expansion Trunk Facilities (Figure A.3-3)

Aerojet Lands – This area currently does not have an approved sewer study. The proposed sewer system of the northern portion of this area has been redirected to drain to the Folsom East Interceptor; therefore, it is no longer a part of the BR East Rancho Trunk Shed. The southern portion of the Aerojet Lands area is planned to be served by a trunk that discharges to the Location #2 Outfall.

Anatolia – The trunk system that serves this area has been constructed, and no new trunks are required.

Arboretum – This area is planned to be served by a pump station and two trunk branches. The pump station will be located near the intersection of Jackson Highway and Sunrise Boulevard. The force main will convey flow to the north along Sunrise Boulevard and discharge to the Location #1 Outfall.

Arista Del Sol – Arista Del Sol is planned to be served by a trunk that will be constructed across The Ranch development. The connection point to this future trunk is located in the southwest corner of the development, near the shared boundary with The Ranch development.

Cordova Hills – Cordova Hills will be served by two trunk pump stations situated near each other in the southwest portion of the development. The north pump station will have two contributing trunks while the south pump station will have one contributing trunk. The south pump station will also serve significant areas that lie outside of the Cordova Hills development, known as South Cordova Hills. The pump station force mains convey flow northward to Chrysanthy Boulevard where they follow the right of way west and discharge to the Location #1 Outfall.

Douglas 98 – This area will drain to a future trunk extension of the existing Douglas Trunk.

Douglas 103 – This area requires no additional trunk facilities. Local collectors will discharge to the existing Douglas Trunk.

Grantline 208 – This area requires no additional trunk facilities. Local collectors will discharge to the existing Douglas Trunk.

Montelena – The trunk system that serves this development has been constructed. No additional trunk facilities are required.

North Cordova Hills – North Cordova Hills and the area located to the west currently have no sewer studies. The North Cordova Hills area is proposed to be served by two trunk pump stations located on Glory Lane. Both pump stations' force mains convey flow west along Glory Lane and Douglas Road to the Location #1 Outfall. Each pump station is served by a primary trunk and its minor trunk branches. The area to the immediate west of North Cordova Hills will be served by a trunk that discharges to the extension of the existing Douglas Trunk. The area to the northwest of North Cordova Hills and east of Rio Del Oro will be served by a trunk system that conveys flow to the west along White Rock Road and drains to the Location #2 Outfall.

North Douglas – The sewer system that serves this area has been constructed, and no new trunks are required.

Rio Del Oro – Rio Del Oro will be served by several trunks and a pump station. The proposed pump station located in the southwest corner of the development will serve the southern portion of the development. The pump station force main conveys flow south, adjacent to Sunrise Boulevard, to the Location #1 Outfall. The trunks serving the northern portion of Rio Del Oro will drain to the Location #2 Outfall.

South Cordova Hills – This area is located south of the Cordova Hills development, and it does not have a sewer study. This area is planned to be served by one of the Cordova Hills pump stations.

SunCreek – SunCreek will be served by two trunk pump stations. One proposed pump station is located approximately in the center of the development and will capture flow from the northern portions of the shed area via two trunks. Its force main will convey flow to the north along Rancho Cordova Parkway and discharge to the existing Aerojet Interceptor 1B located in Chrysanthy Boulevard. The second proposed pump station is located in the southwest corner of the development, and it serves the remainder of the shed. This pump station will also provide service to the Anatolia 3 development, which currently is draining to an interim pump station. The ultimate buildout force main of the second proposed pump station will convey flow to the north, along Sunrise Boulevard, and discharge to the Location #1 Outfall.

Sunridge Lot J – The trunk system that serves this development has been constructed. No additional trunk facilities are required.

Sunridge Park – The trunk system that serves this development has been constructed. No additional trunk facilities are required.

The Ranch – The Ranch development is planned to be served by a future trunk that connects to the Aerojet Interceptor 1B located in Chrysanthy Boulevard.

Westborough – The Westborough development will be served by a trunk that discharges to the Location #2 Outfall.

Attribute data and model results for the BR East Rancho **buildout** expansion trunks are presented in the table below. The BR East Rancho Trunk Shed is subdivided into five smaller sub areas as shown in **Figure A.3-4**. **Figures A.3-5** through **A.3-9** display the details of each sub area which include the proposed trunk sewers, modeled manholes, and the contributing area to each manhole.

BR East Rancho
Trunk Sewer Data and Model Results
Buildout 10-Year Design Storm

US Manhole	DS Manhole	Link Type	Diameter (in)	Length (ft)	US Rim Elev. (ft)	US Invert Elev. (ft)	DS Rim Elev. (ft)	DS Invert Elev. (ft)	Slope (%)	Full Capacity (mgd)	Peak Flow (mgd)	% Full Capacity	d/D
2879-EN02	2879-EN01	Pump									6.7		
2207-EN03	2207-EN02	Gravity Main	15	475	139.0	117.4	138.0	108.9	1.800	5.6	0.9	16	0.8
2123-EN01	2207-EN02	Gravity Main	21	1965	140.5	111.7	138.0	108.9	0.140	3.9	1.0	25	0.5
2207-EN01	2291-EN01	Gravity Main	24	1285	139.0	107.9	134.5	106.1	0.140	5.5	2.6	47	0.5
2207-EN02	2207-EN01	Gravity Main	24	805	138.0	108.9	139.0	107.9	0.120	5.1	2.2	44	0.5
2291-EN01	2375-EN01	Gravity Main	27	2380	134.5	106.1	139.5	103.2	0.120	7.0	3.0	43	0.5
2375-EN01	2376-EN05	Gravity Main	27	740	139.5	103.2	136.5	102.3	0.120	7.0	3.7	53	0.5
2376-EN05	2376-EN03	Gravity Main	27	585	136.5	102.3	134.0	101.4	0.160	8.1	3.9	48	0.6
2376-EN01	2460-EN01	Gravity Main	30	935	130.5	99.9	128.5	98.7	0.120	9.2	4.9	53	0.5
2376-EN02	2376-EN01	Gravity Main	30	795	132.5	100.8	130.5	99.9	0.120	9.2	4.7	51	0.5
2376-EN03	2376-EN02	Gravity Main	30	455	134.0	101.4	132.5	100.8	0.120	9.2	4.6	50	0.5
2460-EN01	2460-EN02	Gravity Main	30	185	128.5	98.7	124.0	98.5	0.120	9.4	5.1	54	0.5
2460-EN02	2460-INT01	Gravity Main	30	311	124.0	98.5	124.7	98.2	0.100	8.4	5.1	60	0.5
2285-EN02	2285-EN01	Gravity Main	10	2269	275.6	261.0	258.0	240.0	0.920	1.4	1.3	93	0.8
2288-EN01	2373-EN01	Gravity Main	15	3313	194.7	173.1	191.1	167.1	0.180	1.8	1.1	62	0.6
2285-EN01	2286-EN01	Gravity Main	15	2961	258.0	233.2	229.7	212.0	0.720	3.5	2.3	64	0.8
2286-EN01	2287-EN01	Gravity Main	15	2884	229.7	212.0	201.7	186.3	0.890	4.0	3.5	89	0.7
2375-EN03	2375-EN02	Gravity Main	18	687	170.6	151.3	138.0	125.6	3.740	13.2	8.5	64	0.6
2287-EN01	2372-EN01	Gravity Main	27	2704	201.7	185.3	193.4	182.6	0.100	6.3	4.7	74	0.6
2372-EN01	2373-EN01	Gravity Main	27	2661	193.4	172.2	191.1	169.6	0.100	6.3	5.3	83	0.7
2375-EN02	2460-INT01	Gravity Main	27	2935	138.0	124.8	124.7	118.0	0.230	9.7	8.7	90	0.8
2373-EN01	2374-EN01	Gravity Main	30	2653	191.1	157.2	180.9	154.5	0.100	8.4	7.4	88	0.8
2374-EN01	2375-EN03	Gravity Main	30	3264	180.9	154.5	170.6	151.3	0.100	8.4	8.1	97	0.8
2452-EN01	2453-EN02	Gravity Main	10	1334	280.0	267.9	273.1	256.8	0.830	1.3	1.0	79	0.7
2453-EN01	2454-EN02	Gravity Main	12	2208	267.1	253.8	232.0	217.8	1.630	2.9	2.1	72	0.7
2537-EN01	2454-EN02	Gravity Main	12	2398	259.9	241.1	232.0	225.0	0.670	1.9	1.7	89	0.7
2453-EN02	2453-EN01	Gravity Main	15	1476	273.1	256.4	267.1	253.8	0.180	1.8	1.5	86	0.7
2537-EN02	2537-EN01	Gravity Main	15	1439	266.0	245.3	259.9	241.1	0.300	2.3	1.4	61	0.6
2454-EN01	2455-EN01	Gravity Main	18	2610	253.3	210.0	204.1	191.9	0.690	5.7	5.0	89	0.7
2454-EN02	2454-EN01	Gravity Main	18	1590	232.0	217.0	253.3	210.0	0.440	4.5	4.5	99	0.9
2623-EN01	2539-EN01	Gravity Main	10	2308	218.0	212.0	192.0	187.4	1.070	1.5	1.0	70	0.6
2539-EN01	2455-EN01	Gravity Main	15	2336	192.0	187.0	204.1	182.8	0.180	1.8	1.4	81	0.7
2374-EN02	2459-EN01	Gravity Main	21	2964	180.9	162.4	142.6	129.9	1.100	10.7	7.3	68	0.6
2459-EN01	2460-INT01	Gravity Main	24	3146	142.6	129.7	124.7	115.0	0.470	10.0	7.3	73	0.6
2371-EN01	2371-EN02	Gravity Main	30	638	240.0	179.8	191.4	179.2	0.100	8.4	7.4	88	0.7
2372-EN02	2373-EN02	Gravity Main	30	2751	190.1	168.0	180.2	165.3	0.100	8.4	7.4	88	0.7
2373-EN02	2374-EN02	Gravity Main	30	2825	180.2	165.3	180.9	162.4	0.100	8.4	7.3	87	0.7
2371-EN02	2372-EN02	Gravity Main	30	2683	191.4	179.2	190.1	176.5	0.100	8.4	7.4	88	0.7
2455-EN01	2371-EN01	Gravity Main	30	1719	204.1	181.5	240.0	179.8	0.100	8.4	6.9	83	0.8
2618-EN02	2618-EN01	Gravity Main	12	1316	222.1	204.5	202.0	193.0	0.870	2.2	1.2	54	0.5
2618-EN03	2618-EN02	Gravity Main	12	476	227.7	208.6	222.1	204.5	0.870	2.2	1.2	54	0.5
2618-EN01	2702-EN01	Gravity Main	18	1362	202.0	187.0	198.0	183.5	0.260	3.5	3.1	88	0.8
2786-EN01	2870-EN01	Gravity Main	18	2264	208.9	178.5	180.4	169.9	0.380	4.2	3.7	87	0.7
2702-EN01	2786-EN01	Gravity Main	18	1303	198.0	183.5	208.9	178.5	0.380	4.2	3.7	87	0.7
2870-EN01	2954-EN02	Gravity Main	21	2418	180.4	160.0	192.3	152.0	0.330	5.9	4.6	78	0.7
2954-EN02	2954-EN03	Gravity Main	24	535	192.3	152.0	158.0	150.4	0.310	8.1	5.4	66	0.6
2618-EN05	2618-EN04	Gravity Main	12	1437	224.3	213.0	206.0	193.0	1.390	2.7	1.0	36	0.4
2619-EN01	2618-EN05	Gravity Main	12	2104	254.4	240.8	224.3	213.0	1.320	2.7	1.0	37	0.4
2618-EN04	2618-EN01	Gravity Main	15	1300	206.0	192.6	202.0	187.2	0.410	2.7	1.7	62	0.7
3460-EN05	3460-EN06	Pump									6.8		

ATTACHMENT 4

BR East Rancho
Trunk Sewer Data and Model Results
Buildout 10-Year Design Storm

US Manhole	DS Manhole	Link Type	Diameter (in)	Length (ft)	US Rim Elev. (ft)	US Invert Elev. (ft)	DS Rim Elev. (ft)	DS Invert Elev. (ft)	Slope (%)	Full Capacity (mgd)	Peak Flow (mgd)	% Full Capacity	d/D
2787-EN02	2787-EN01	Gravity Main	12	1391	224.3	207.0	211.8	200.0	0.500	1.6	1.3	80	0.7
2787-EN01	2872-EN02	Gravity Main	15	1142	211.8	200.0	203.3	190.0	0.880	3.9	1.7	44	0.7
2872-EN02	2872-EN01	Gravity Main	15	1347	203.3	190.0	193.9	180.7	0.690	3.5	2.4	68	0.6
2872-EN01	2956-EN01	Gravity Main	18	687	193.9	180.5	188.1	177.0	0.500	4.8	3.5	73	0.6
2956-EN01	2955-EN02	Gravity Main	27	1171	188.1	171.2	184.0	170.0	0.100	6.3	4.5	72	0.6
2789-EN01	2873-EN02	Gravity Main	15	1479	257.3	231.9	256.0	229.3	0.180	1.8	1.3	76	0.8
2873-EN02	2873-EN01	Gravity Main	15	1263	256.0	229.3	248.0	227.0	0.180	1.8	1.6	90	0.7
2874-EN01	2874-EN02	Gravity Main	18	3042	247.8	220.2	215.4	191.0	0.960	6.7	2.4	37	0.6
2874-EN02	2875-EN02	Gravity Main	18	339	215.4	191.0	210.7	189.2	0.510	4.9	3.1	63	0.6
2875-EN01	326-227-1011	Gravity Main	18	349	208.6	187.5	206.3	185.3	0.630	5.4	3.1	57	0.7
2875-EN02	2875-EN01	Gravity Main	18	311	210.7	189.2	208.6	187.6	0.520	4.9	3.1	62	0.6
2873-EN01	2874-EN01	Gravity Main	21	202	248.0	220.5	247.8	220.2	0.120	3.6	2.4	69	0.6
2708-EN01	2709-EN02	Gravity Main	12	1480	198.3	171.4	172.0	162.0	0.630	1.8	1.2	64	0.6
2709-EN01	2710-EN01	Gravity Main	18	1402	173.7	150.0	164.1	147.4	0.190	2.9	2.2	75	0.9
2709-EN02	2709-EN01	Gravity Main	18	2589	172.0	156.5	173.7	150.3	0.240	3.3	1.8	53	0.5
2710-EN01	2794-EN01	Gravity Main	18	1820	164.1	147.7	150.0	142.3	0.300	3.7	2.9	79	0.7
2794-EN01	2795-EN03	Gravity Main	21	1945	150.0	142.0	152.0	139.7	0.120	3.6	3.2	90	0.7
2795-EN03	2879-EN03	Gravity Main	24	2195	152.0	136.1	146.0	133.7	0.110	4.9	3.8	78	0.7
2879-EN03	2879-EN02	Gravity Main	30	59	146.0	118.5	146.0	118.5	0.100	8.4	6.7	80	0.5
3460-EN03	3460-EN01	Pump									4.2		
2795-EN02	2795-EN01	Gravity Main	12	1788	164.8	128.4	148.0	122.7	0.320	1.3	1.1	86	0.7
2795-EN01	2879-EN03	Gravity Main	18	1904	148.0	122.2	146.0	119.5	0.140	2.5	1.8	70	0.6
2954-EN03	2954-EN01	Pump									5.4		
3205-EN01	3205-EN04	Gravity Main	15	625	155.0	125.9	147.0	124.5	0.230	2.0	1.4	70	0.7
3205-EN02	3205-EN01	Gravity Main	15	757	158.0	133.0	155.0	130.7	0.300	2.3	1.4	61	0.6
3290-EN01	3374-EN01	Gravity Main	15	1398	141.7	120.3	141.0	117.7	0.180	1.8	1.7	97	0.8
3290-EN02	3290-EN01	Gravity Main	15	566	151.6	121.3	141.7	120.3	0.180	1.8	1.7	93	0.8
3205-EN04	3206-EN02	Gravity Main	15	894	147.0	124.5	145.2	122.9	0.180	1.8	1.5	83	0.8
3206-EN02	3290-EN02	Gravity Main	15	892	145.2	122.9	151.6	121.3	0.180	1.8	1.7	93	0.8
3374-EN01	3458-EN01	Gravity Main	18	1743	141.0	117.5	142.1	114.8	0.150	2.7	1.8	68	0.7
3458-EN01	3459-EN03	Gravity Main	18	1743	142.1	114.8	136.0	112.4	0.140	2.5	1.9	74	0.6
3459-EN02	3543-EN01	Gravity Main	21	2126	138.0	110.9	142.7	108.3	0.120	3.6	2.9	81	0.8
3459-EN03	3459-EN02	Gravity Main	21	1051	136.0	112.1	138.0	110.9	0.120	3.6	2.6	72	0.7
3543-EN01	3627-EN01	Gravity Main	21	1861	142.7	108.3	132.1	106.1	0.120	3.6	3.2	90	0.7
3460-EN02	3460-EN03	Gravity Main	24	22	124.0	100.8	124.0	100.7	0.110	4.9	4.2	87	0.5
3627-EN01	3628-EN01	Gravity Main	24	1326	132.1	105.8	135.6	104.4	0.110	4.9	3.8	77	0.7
3628-EN01	3460-EN02	Gravity Main	24	3280	135.6	104.4	124.0	100.8	0.110	4.9	3.9	81	0.7
3123-EN04	3123-EN03	Gravity Main	12	735	185.0	177.6	187.0	175.2	0.330	1.3	0.9	70	0.6
3123-EN03	3207-EN07	Gravity Main	15	650	187.0	175.2	181.0	172.9	0.350	2.5	1.1	44	0.6
3207-EN06	3207-EN05	Gravity Main	15	784	182.0	170.0	177.0	167.5	0.320	2.4	1.5	62	0.6
3207-EN07	3207-EN06	Gravity Main	15	878	181.0	172.9	182.0	170.0	0.330	2.4	1.4	56	0.6
3291-EN05	3291-EN03	Gravity Main	18	567	164.4	154.4	166.5	153.6	0.140	2.6	2.1	81	0.8
3291-EN06	3291-EN07	Gravity Main	18	486	169.0	160.9	165.0	154.8	1.260	7.6	2.0	26	0.7
3291-EN07	3291-EN05	Gravity Main	18	291	165.0	154.8	164.4	154.4	0.140	2.5	2.0	80	0.7
3291-EN09	3291-EN06	Gravity Main	18	1182	172.0	165.0	169.0	160.9	0.350	4.0	1.9	48	0.5
3207-EN05	3291-EN09	Gravity Main	18	633	177.0	167.5	172.0	165.0	0.400	4.3	1.6	37	0.5
2955-EN02	2955-EN01	Pump									4.5		
3207-EN03	3207-EN02	Gravity Main	12	362	176.0	166.4	166.0	163.7	0.750	2.0	1.0	49	0.5
3207-EN01	3291-En04	Gravity Main	15	1385	170.1	159.6	173.8	156.2	0.250	2.1	1.1	53	0.6
3207-EN02	3207-EN01	Gravity Main	15	547	166.0	163.4	170.1	159.6	0.700	3.5	1.1	31	0.5

ATTACHMENT 4

BR East Rancho
Trunk Sewer Data and Model Results
Buildout 10-Year Design Storm

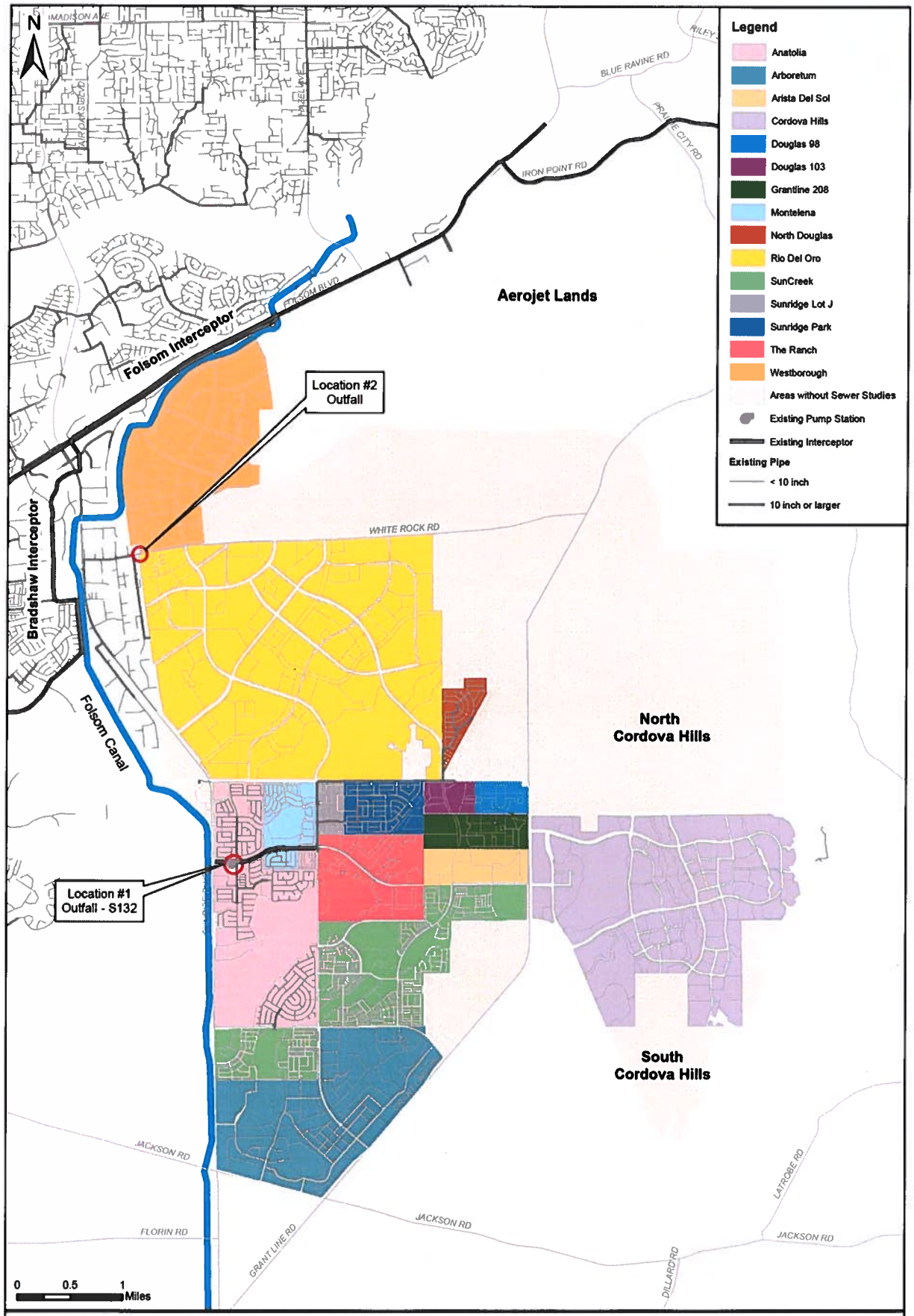
US Manhole	DS Manhole	Link Type	Diameter (in)	Length (ft)	US Rim Elev. (ft)	US Invert Elev. (ft)	DS Rim Elev. (ft)	DS Invert Elev. (ft)	Slope (%)	Full Capacity (mgd)	Peak Flow (mgd)	% Full Capacity	d/D
3291-EN04	3291-EN03	Gravity Main	18	936	173.8	156.2	166.5	153.6	0.280	3.6	1.7	48	0.8
3291-EN01	3376-EN03	Gravity Main	24	2503	161.8	148.0	148.0	134.0	0.560	11.0	4.1	37	0.4
3291-EN02	3291-EN01	Gravity Main	24	590	170.0	153.0	161.8	148.1	0.830	13.3	4.0	30	0.4
3376-EN01	3460-EN04	Gravity Main	24	180	142.0	124.2	132.0	120.9	1.840	19.8	4.5	23	0.6
3376-EN02	3376-EN01	Gravity Main	24	1123	138.0	129.0	142.0	124.3	0.420	9.5	4.5	48	0.5
3376-EN03	3376-EN02	Gravity Main	24	918	148.0	133.9	138.0	129.1	0.520	10.6	4.5	42	0.5
3291-EN03	3291-EN02	Gravity Main	24	386	166.5	153.6	170.0	153.0	0.160	5.8	3.9	67	0.6
3460-EN04	3460-EN05	Gravity Main	27	43	132.0	120.9	132.0	120.9	0.100	6.3	6.8	107	0.6
3293-EN01	3460-EN04	Gravity Main	10	4219	237.0	200.0	132.0	122.3	1.840	1.9	1.7	86	0.7
3209-EN01	3293-EN01	Gravity Main	12	899	237.0	206.9	237.0	200.0	0.770	2.0	1.4	69	0.6
3209-EN02	3209-EN01	Gravity Main	12	796	236.0	212.6	237.0	207.0	0.700	1.9	1.3	65	0.6
3209-EN03	3209-EN02	Gravity Main	12	957	238.0	217.4	236.0	212.7	0.490	1.6	0.9	55	0.5
3719-EN03	3719-EN02	Pump									3.7		
3213-EN01	3296-EN01	Gravity Main	15	859	169.0	154.5	162.5	153.0	0.180	1.8	1.0	58	0.6
3296-EN01	3296-EN02	Gravity Main	15	491	162.5	146.2	161.8	145.6	0.130	1.5	1.3	89	0.7
3211-EN01	3211-EN02	Gravity Main	15	373	181.0	168.6	180.0	168.0	0.160	1.7	0.9	54	0.5
3211-EN02	3212-EN03	Gravity Main	15	1287	180.0	168.0	173.4	165.7	0.180	1.8	0.9	50	0.5
3212-EN01	3213-EN01	Gravity Main	15	1694	172.0	161.7	169.0	158.6	0.180	1.8	1.0	55	0.5
3212-EN02	3212-EN01	Gravity Main	15	1024	170.8	163.6	172.0	161.7	0.180	1.8	1.0	53	0.5
3212-EN03	3212-EN02	Gravity Main	15	1142	173.4	165.7	170.8	163.6	0.180	1.8	0.9	52	0.5
3296-EN02	3296-EN10	Gravity Main	18	727	161.8	143.9	158.0	142.9	0.140	2.6	1.6	64	0.6
3296-EN10	3296-EN03	Gravity Main	24	62	158.0	142.4	158.0	142.3	0.110	4.9	4.4	91	0.5
3295-EN01	3296-EN07	Gravity Main	18	1591	172.0	155.9	162.1	153.7	0.140	2.5	2.0	78	0.7
3296-EN05	3296-EN10	Gravity Main	18	582	159.0	145.7	158.0	144.5	0.190	3.0	2.8	93	0.8
3296-EN06	3296-EN05	Gravity Main	18	719	164.0	148.0	159.0	147.0	0.140	2.5	2.0	78	0.7
3296-EN07	3296-EN06	Gravity Main	18	461	162.1	153.7	164.0	153.0	0.140	2.5	2.0	78	0.7
3551-EN02	3551-EN01	Pump									2.1		
3296-EN03	3296-EN04	Pump									4.4		
3466-EN01	3550-EN02	Gravity Main	18	2852	141.0	116.7	137.0	112.6	0.140	2.6	1.4	53	0.5
312-218-1016	3466-EN01	Gravity Main	18	809	132.0	117.8	141.0	116.7	0.140	2.5	1.4	54	0.5
3550-EN02	3551-EN02	Gravity Main	21	1998	137.0	110.6	131.0	107.7	0.140	3.9	2.1	53	0.5
3549-EN01	3550-EN01	Gravity Main	15	734	151.9	124.9	133.0	116.9	1.090	4.4	1.0	24	0.6
3550-EN01	3634-EN01	Gravity Main	15	724	133.0	116.9	142.2	115.6	0.180	1.8	1.1	63	0.6
3634-EN01	3718-EN04	Gravity Main	15	1967	142.2	115.6	128.1	112.1	0.180	1.8	1.2	67	0.6
3718-EN04	3718_EN03	Gravity Main	15	645	128.1	112.1	127.0	96.9	2.350	6.4	1.3	20	0.6
3718_EN03	3718-EN02	Gravity Main	18	341	127.0	96.6	127.0	96.2	0.140	2.5	1.9	76	0.6
3632-EN01	3717-EN04	Gravity Main	15	436	143.0	122.0	143.0	121.1	0.200	1.9	1.1	56	0.5
3717-EN04	3717-EN03	Gravity Main	15	1197	143.0	121.1	142.0	115.1	0.500	3.0	1.1	37	0.6
3717-EN02	3717-EN01	Gravity Main	18	1006	145.0	113.1	140.0	111.7	0.140	2.6	1.5	59	0.6
3717-EN03	3717-EN02	Gravity Main	18	1049	142.0	115.1	145.0	113.3	0.170	2.8	1.4	52	0.5
3717-EN01	3718-EN06	Gravity Main	18	669	140.0	111.7	140.0	110.5	0.170	2.8	1.6	55	0.6
3718-EN05	3718-EN02	Gravity Main	18	826	138.0	109.6	127.0	96.2	1.620	8.7	1.7	20	0.6
3718-EN06	3718-EN05	Gravity Main	18	865	140.0	110.5	138.0	109.6	0.110	2.3	1.6	69	0.6
3718-EN01	3719-EN01	Gravity Main	24	2006	129.9	94.9	118.0	93.1	0.090	4.4	3.7	86	0.7
3718-EN02	3718-EN01	Gravity Main	24	694	127.0	95.7	129.9	94.9	0.120	5.0	3.7	74	0.7
3719-EN01	3719-EN03	Gravity Main	24	35	118.0	93.1	122.0	92.8	0.780	12.9	3.7	29	0.4
3128-EN01	3045-EN01	Gravity Main	15	1136	189.2	154.8	184.0	152.8	0.180	1.8	1.5	82	0.7
3128-EN02	3128-EN01	Gravity Main	15	1303	193.4	157.2	189.2	154.8	0.180	1.8	1.5	82	0.7
3045-EN01	322-221-1009	Gravity Main	18	1715	184.0	152.5	179.7	150.1	0.140	2.5	1.8	70	0.6
2540-EN01	2541-EN02	Gravity Main	15	2147	175.2	159.4	172.0	155.6	0.180	1.8	1.2	69	0.6

ATTACHMENT 4

BR East Rancho
Trunk Sewer Data and Model Results
Buildout 10-Year Design Storm

US Manhole	DS Manhole	Link Type	Diameter (in)	Length (ft)	US Rim Elev. (ft)	US Invert Elev. (ft)	DS Rim Elev. (ft)	DS Invert Elev. (ft)	Slope (%)	Full Capacity (mgd)	Peak Flow (mgd)	% Full Capacity	d/D
2458-EN01	2543-EN01	Gravity Main	18	1431	179.6	148.0	164.6	139.3	0.610	5.3	4.0	76	0.7
2544-EN02	2544-EN01	Gravity Main	18	813	158.2	135.4	136.0	130.0	0.660	5.5	5.4	97	0.8
2541-EN01	2542-EN01	Gravity Main	21	1682	173.8	152.7	173.4	150.7	0.120	3.5	3.3	94	0.9
2541-EN02	2541-EN01	Gravity Main	21	1330	172.0	155.1	173.8	153.5	0.120	3.6	2.7	76	0.7
2542-EN01	2458-EN01	Gravity Main	21	2211	173.4	150.5	179.6	147.9	0.120	3.6	3.7	105	1.0
2460-EN03	2460-INT01	Gravity Main	27	299	124.0	110.1	124.7	109.8	0.100	6.3	5.7	90	0.6
2543-EN01	2544-EN02	Gravity Main	27	3236	164.6	138.6	158.2	135.4	0.100	6.3	5.0	79	0.7
2544-EN01	2460-EN03	Gravity Main	27	2373	136.0	112.4	124.0	110.1	0.100	6.3	5.7	90	0.7
2954-EN03	3131-EN01	Force Main	15	31664	158.0	151.0	168.0	160.0			5.4		1.0
2955-EN02	3131-EN01	Force Main	15	26476	182.4	169.0	168.0	160.0			4.5		1.0
3460-EN03	3131-EN01	Force Main	12	25920	124.0	98.4	168.0	160.0			4.2		1.0
3460-EN05	3131-EN01	Force Main	15	24480	138.0	120.9	168.0	160.0			6.8		1.0
3296-EN03	N47-MH0108A	Force Main	12	8567	158.0	142.6	177.4	167.0			4.4		1.0
2879-EN02	3131-EN01	Force Main	14	6004	146.0	118.0	168.0	160.0			6.7		1.0
3719-EN03	3131-EN01	Force Main	12	16654	116.2	92.8	168.0	160.0			3.7		1.0
3551-EN02	3131-EN01	Force Main	12	11852	131.0	107.7	168.0	160.0			2.1		1.0

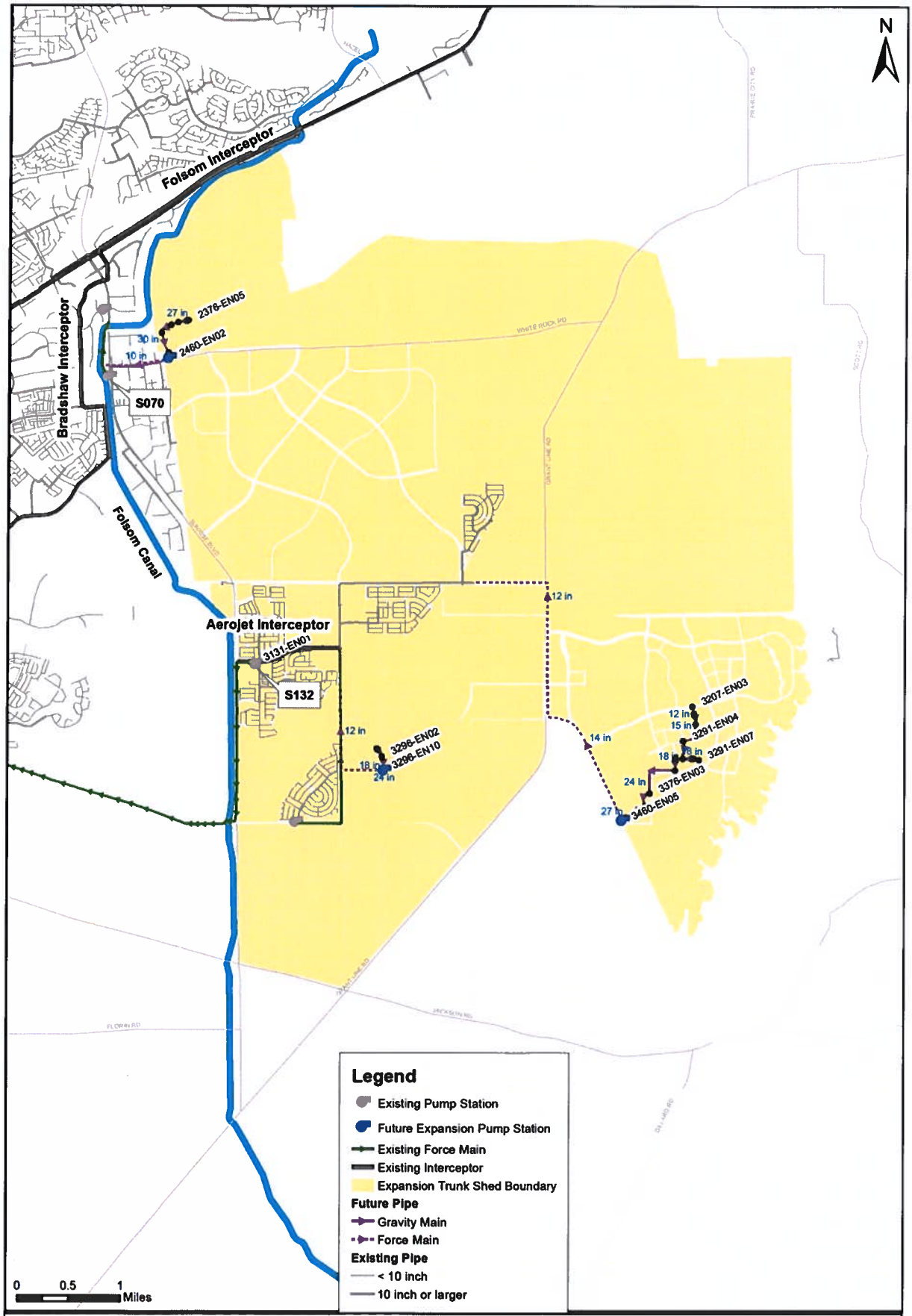
ATTACHMENT 4



SASD SYSTEM CAPACITY PLAN - 2015 UPDATE
BR East Rancho
Planned Development Areas
Figure A.3-1

SACRAMENTO AREA SEWER DISTRICT

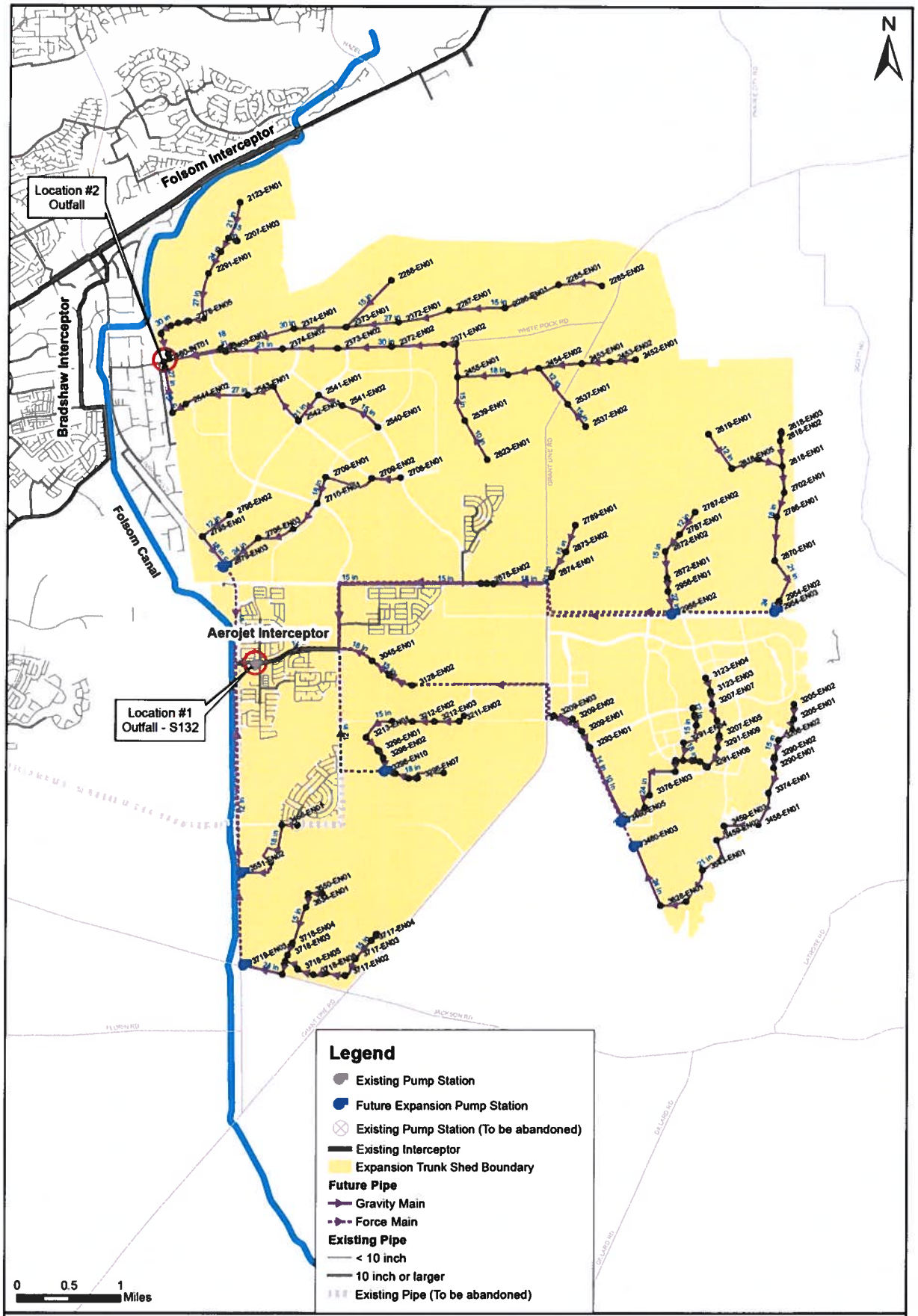
Updated: 3/18/2016



SASD SYSTEM CAPACITY PLAN - 2015 UPDATE
BR East Rancho
Near-Term Expansion Plan
Figure A.3-2

SACRAMENTO AREA SEWER DISTRICT

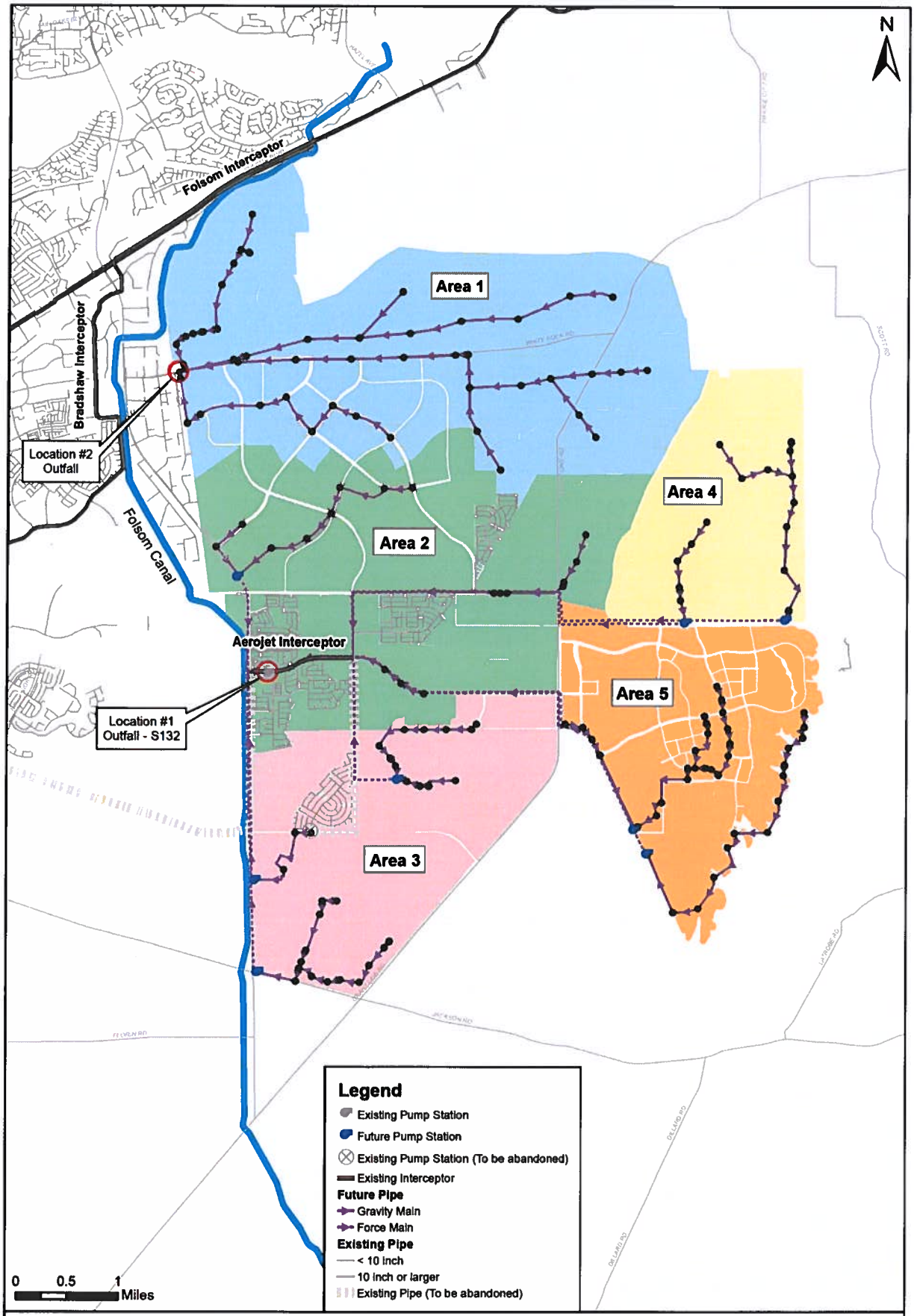
Updated: 8/24/2016



SACRAMENTO AREA SEWER DISTRICT

SASD SYSTEM CAPACITY PLAN - 2015 UPDATE
BR East Rancho
Buildout Expansion Plan
Figure A.3-3

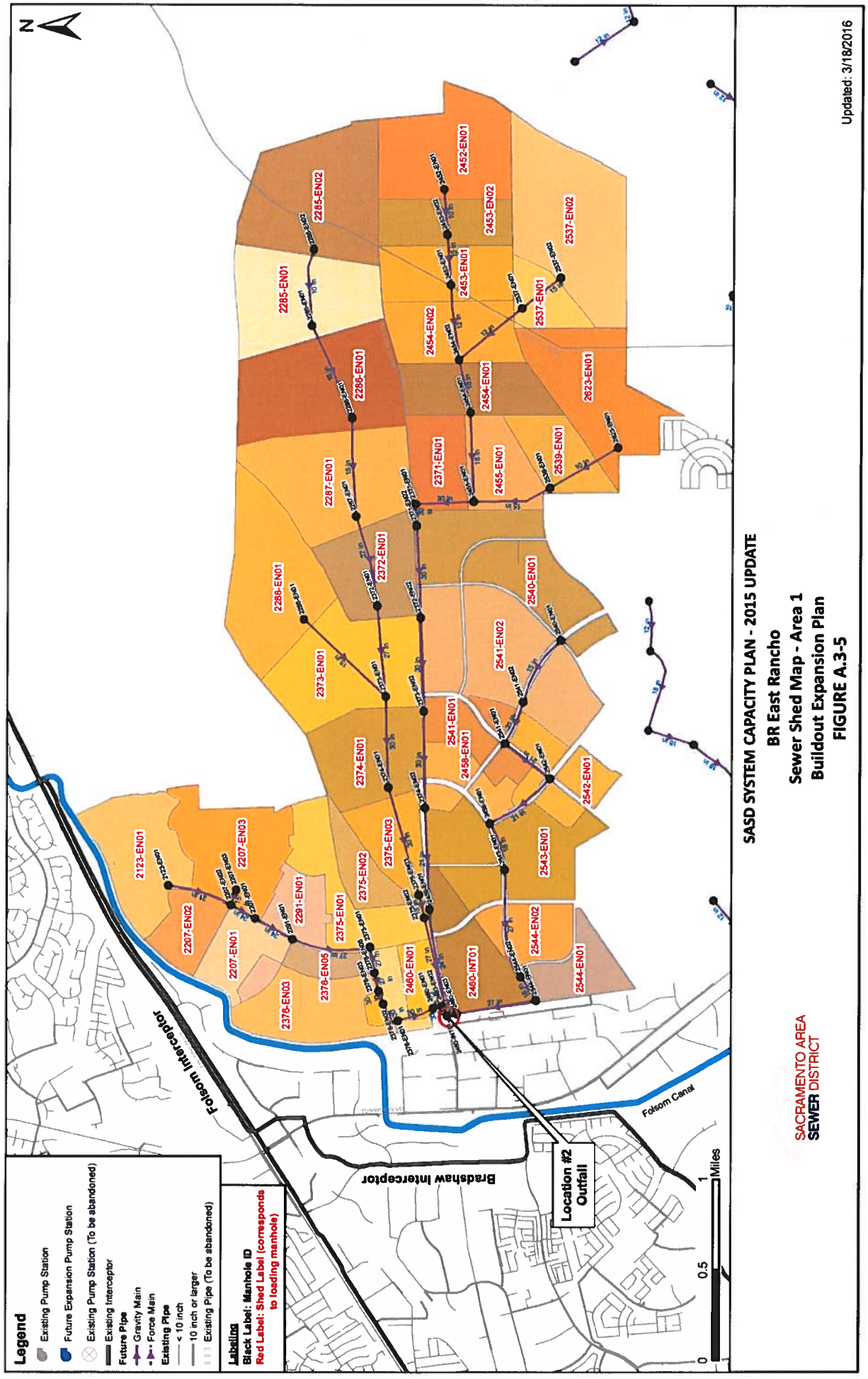
Updated: 3/18/2016

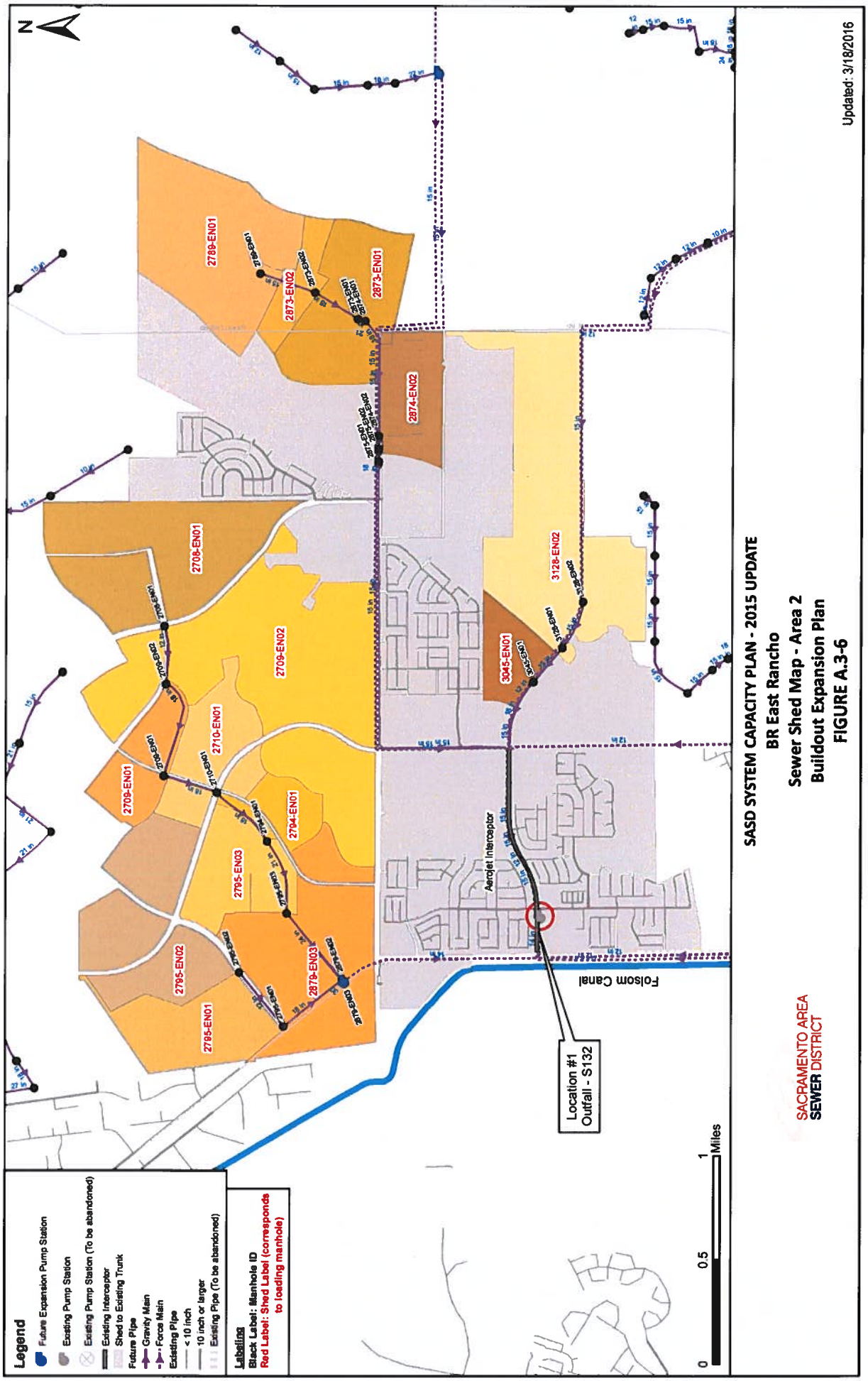


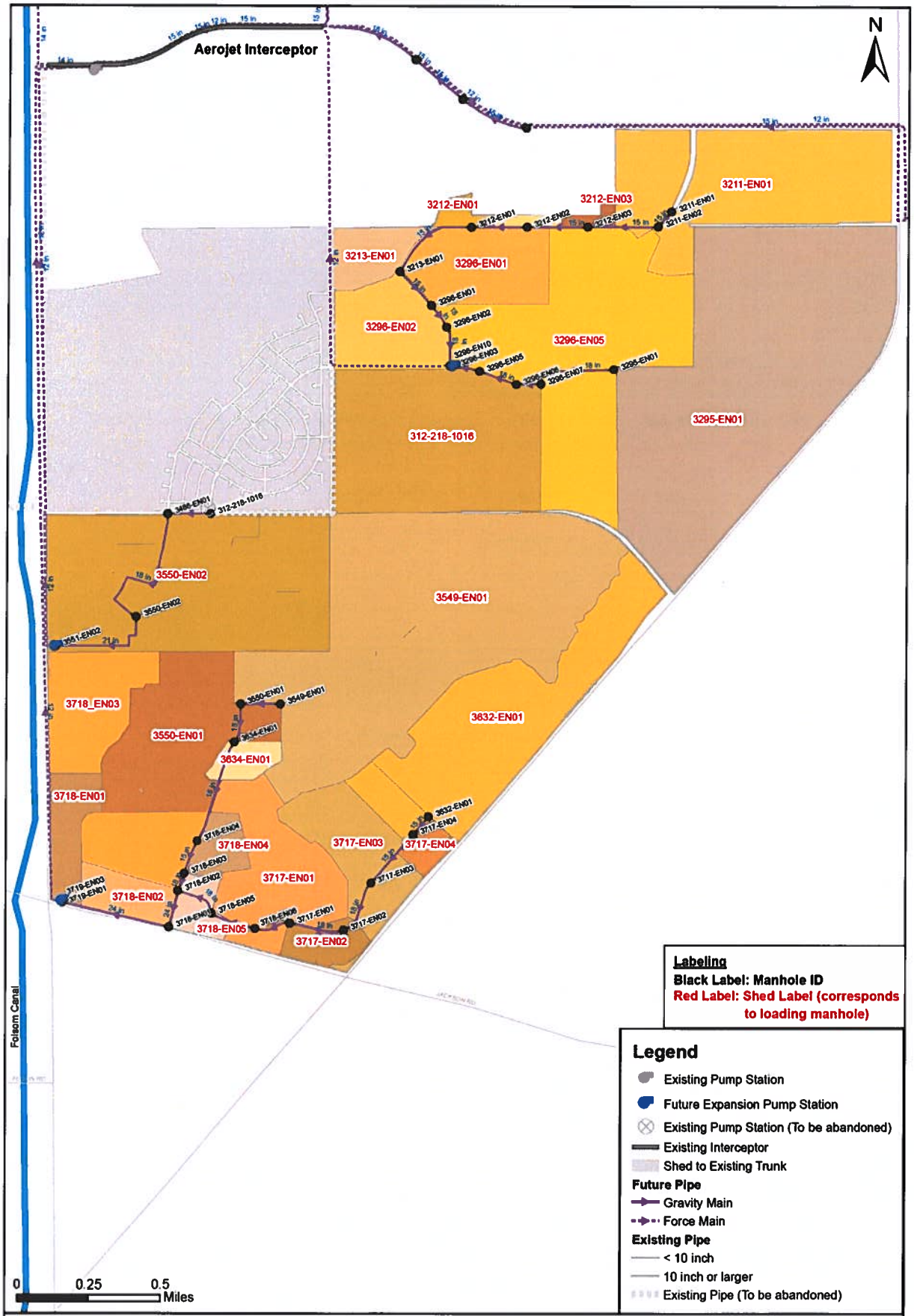
SACRAMENTO AREA SEWER DISTRICT

SASD SYSTEM CAPACITY PLAN - 2015 UPDATE
BR East Rancho
Sewer Shed Map (Area 1 - Area 5)
Buildout Expansion Plan
FIGURE A.3-4

Updated: 3/18/2016


N
Legend
Existing Pump Station
Future Expansion Pump Station
Existing Pump Station (To be abandoned)
Existing Interceptor
Future Pipe
Gravity Main
Force Main
Existing Pipe
< 10 inch
10 inch or larger
Existing Pipe (To be abandoned)
Labeling
Black Label: Manhole ID
Red Label: Shed Label (corresponds to loading manhole)
Folsom Interceptor
Bradshaw Interceptor
Folsom Canal
Location #2 Outfall
0
0.5
1
Miles
2123-EN01
2207-EN02
2207-EN03
2207-EN01
2291-EN01
2375-EN01
2375-EN02
2375-EN03
2376-EN05
2376-EN03
2460-EN01
2460-INT01
2374-EN01
2373-EN01
2372-EN01
2288-EN01
2287-EN01
2286-EN01
2285-EN02
2285-EN01
2371-EN01
2541-EN01
2458-EN01
2541-EN02
2540-EN01
2542-EN01
2543-EN01
2544-EN02
2544-EN01
2455-EN01
2454-EN01
2454-EN02
2453-EN01
2453-EN02
2452-EN01
2539-EN01
2623-EN01
2537-EN01
2537-EN02
SASD SYSTEM CAPACITY PLAN - 2015 UPDATE
BR East Rancho
Sewer Shed Map - Area 1
Buildout Expansion Plan
FIGURE A.3-5
SACRAMENTO AREA
SEWER DISTRICT
Updated: 3/18/2016


N
Legend
Future Expansion Pump Station
Existing Pump Station
Existing Pump Station (To be abandoned)
Existing Interceptor
Shed to Existing Trunk
Future Pipe
Gravity Main
Force Main
Existing Pipe
< 10 inch
10 inch or larger
Existing Pipe (To be abandoned)
Labeling
Black Label: Manhole ID
Red Label: Shed Label (corresponds to loading manhole)
2789-EN01
2873-EN02
2873-EN01
2874-EN02
2708-EN01
2709-EN02
2709-EN01
2710-EN01
2794-EN01
2795-EN03
2795-EN02
2795-EN01
2879-EN03
3128-EN02
3045-EN01
Aerojet Interceptor
Folsom Canal
Location #1
Outfall - S132
0
0.5
1
Miles
SASD SYSTEM CAPACITY PLAN - 2015 UPDATE
BR East Rancho
Sewer Shed Map - Area 2
Buildout Expansion Plan
FIGURE A.3-6
SACRAMENTO AREA
SEWER DISTRICT
Updated: 3/18/2016



SASD SYSTEM CAPACITY PLAN - 2015 UPDATE

BR East Rancho

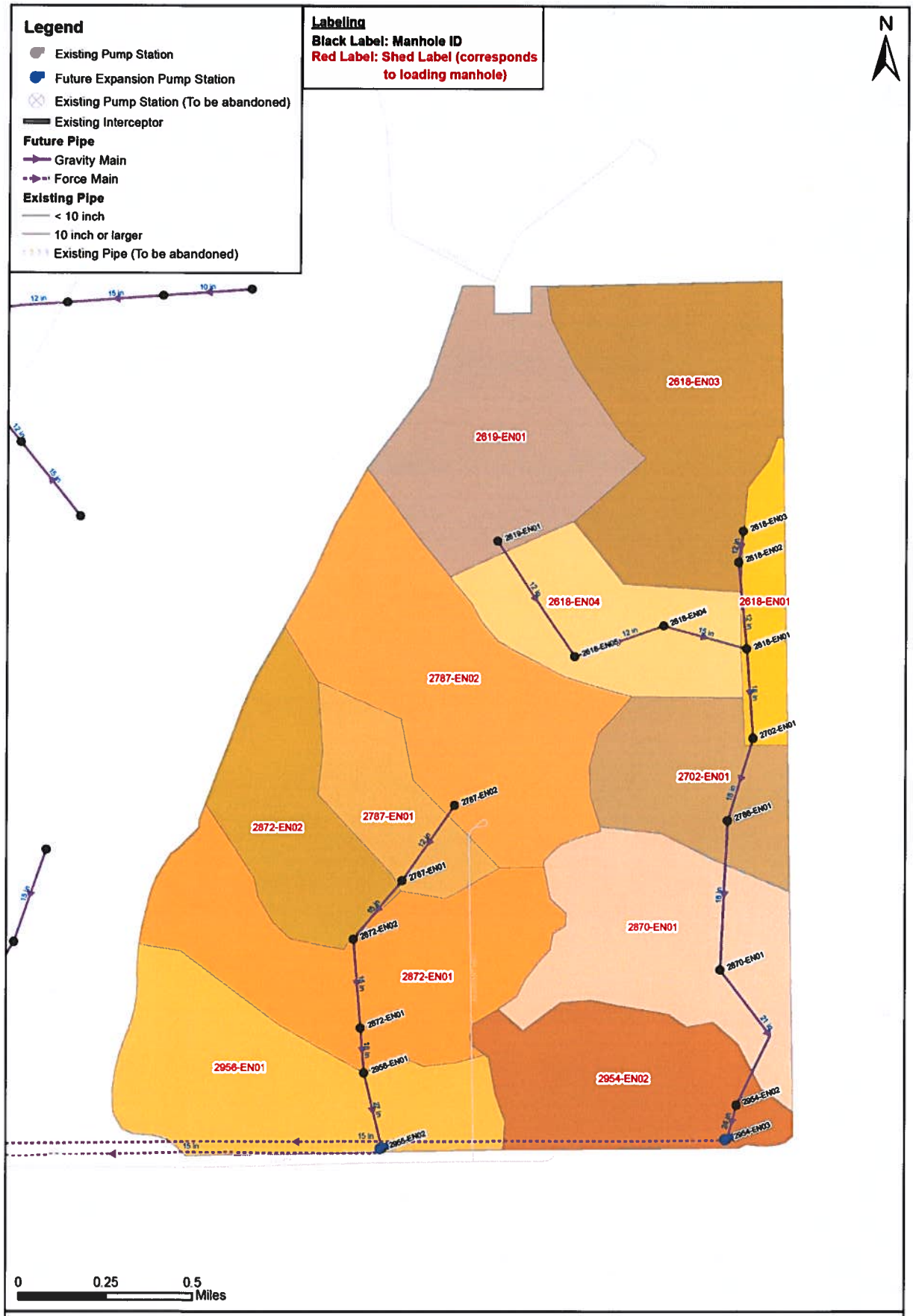
Sewer Shed Map - Area 3

Buildout Expansion Plan

FIGURE A.3-7

SACRAMENTO AREA SEWER DISTRICT

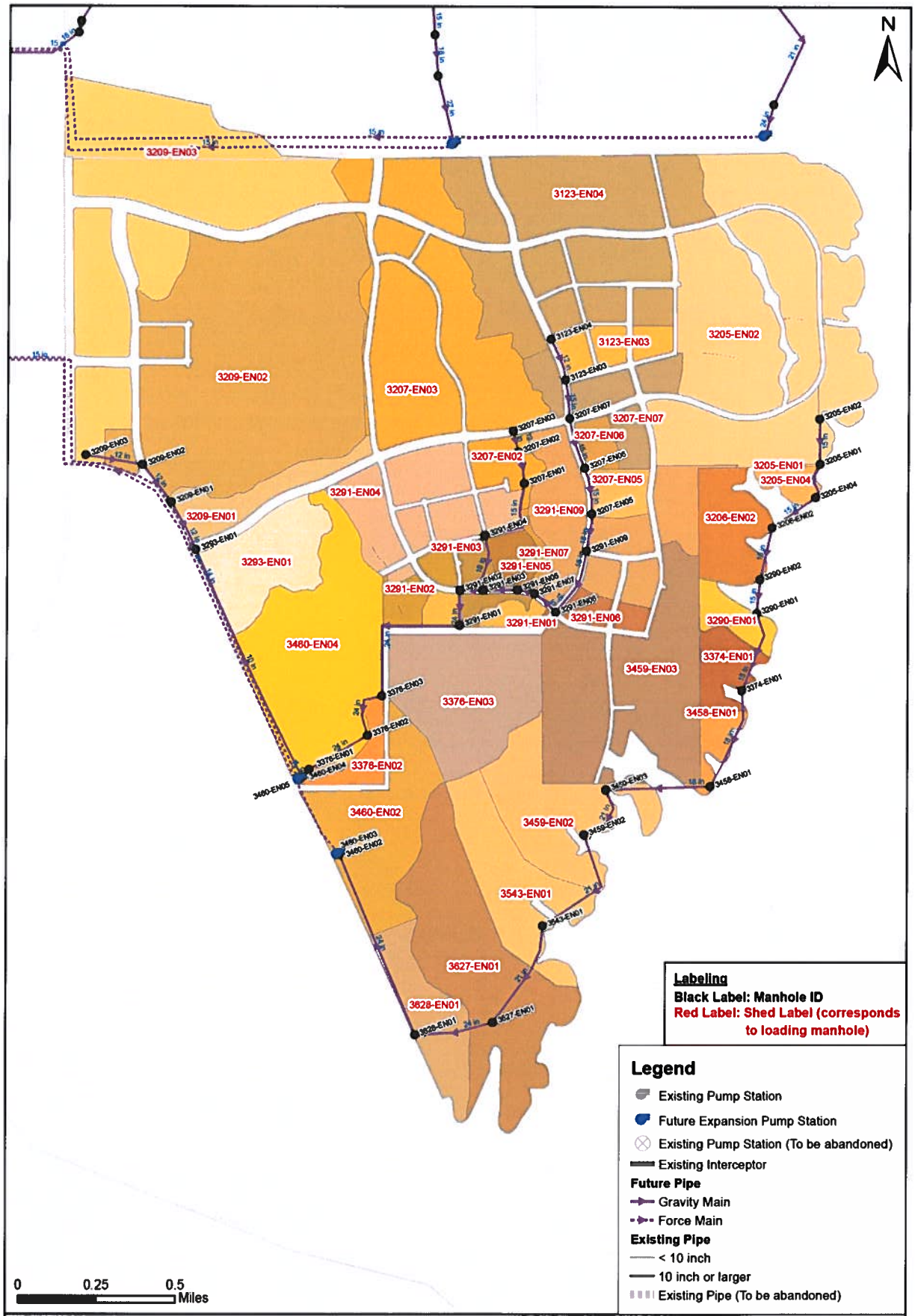
Updated: 3/18/2016



SASD SYSTEM CAPACITY PLAN - 2015 UPDATE
BR East Rancho
Sewer Shed Map - Area 4
Buildout Expansion Plan
FIGURE A.3-8

SACRAMENTO AREA SEWER DISTRICT

Updated: 3/18/2016



SASD SYSTEM CAPACITY PLAN - 2015 UPDATE
BR East Rancho
Sewer Shed Map - Area 5
Buildout Expansion Plan
FIGURE A.3-9

SACRAMENTO AREA SEWER DISTRICT

Updated: 3/18/2016

From: Lewis. Yadira [mailto:lewisy@sacsewer.com]
Sent: Friday, August 10, 2018 2:31 PM
To: Tom Cassera <tcassera@ctaes.net>
Cc: Murray. Ken <murrayke@sacsewer.com>
Subject: Sewer Studies

Good afternoon Mr. Cassera,

I have provided a link below to the following sewer studies:

- Montelena
- Cordova Hills
- Arista Del Sol

Please let me know if I can assist you further. Thank you.

Yadira Lewis, P.E.
Assistant Engineer
Sacramento Area Sewer District
10060 Goethe Road
Sacramento, CA 95827
(916) 876-6336
lewisy@sacsewer.com
www.sacsewer.com

From: Lewis. Yadira [mailto:lewisy@sacsewer.com]
Sent: Monday, September 17, 2018 3:38 PM
To: Tom Cassera <tcassera@ctaes.net>
Cc: Murray. Ken <murrayke@sacsewer.com>
Subject: RE: The Ranch level 1 - RE: Sewer Studies

Hi Tom,

Thank you for the follow-up email. SASD's modeling section has confirmed there is available capacity in the Aerojet Interceptor under existing conditions. Assuming the S132 pump station will be replaced by a Regional San facility that will not cause back-ups to the Aerojet Interceptor, the model predicts minor surcharging in the Aerojet Interceptor under buildout conditions. Thank you.

-Yadira

From: Lewis. Yadira [mailto:lewisy@sacsewer.com]
Sent: Tuesday, September 04, 2018 6:55 AM
To: Tom Cassera <tcassera@ctaes.net>
Cc: Murray. Ken <murrayke@sacsewer.com>
Subject: RE: The Ranch level 1 - RE: Sewer Studies

Good morning Tom,

Allow me to verify this with SASD's modeling department. I will let you know what they say as soon as possible. Thank you.

-Yadira

From: tcassera@ctaes.net [mailto:tcassera@ctaes.net]
Sent: Friday, August 31, 2018 1:36 PM
To: Lewis. Yadira <lewisy@sacsewer.com>
Cc: Murray. Ken <murrayke@sacsewer.com>
Subject: The Ranch level 1 - RE: Sewer Studies

Hi Yadira,

I working on Level 1 sewer Study for The Ranch.

In review of the reports you forwarded, ADS sewer study based assumptions on "downstream Aerojet 2 Interceptor has capacity without surcharge conditions as verified by SASD and SCRSD".

Is that assumption still valid?

Thanks,

Tom Cassera, PE, QSD
CTA Engineering & Surveying

APPENDIX J.4

Water Supply Assessment

Sacramento County Water Agency

Water Supply Assessment for The Ranch at Sunridge

Prepared by Sacramento County Water Agency
September 2011

TABLE OF CONTENTS

INTRODUCTION 1
BACKGROUND 1
THE PROPOSED DEVELOPMENT PROJECT 1
WATER SUPPLY ASSESSMENT OBJECTIVE 1
OVERVIEW OF THE RANCH AT SUNRIDGE WSA 1
WSA FOR THE RANCH AT SUNRIDGE PROJECT 4
DETERMINE IF PROJECT IS SUBJECT TO CEQA [Section 10910 (a)] 4
IDENTIFY RESPONSIBLE PUBLIC WATER SYSTEM [Section 10910(b)] 4
DETERMINE IF UWMP INCLUDES WATER DEMANDS [Section 10910(c)] 4
IDENTIFY EXISTING WATER SUPPLIES FOR THE PROJECT [Section 10910(d)] 6
SECTION 10910(d)(1) 6
Use of Groundwater 6
Use of Surface Water 7
SECTION 10910(d)(2) 9
Section 10910(d)(2)(A) 9
Section 10910(d)(2)(B) 9
Section 10910(d)(2)(C) 10
Section 10910(d)(2)(D) 11
IDENTIFY PARTIES DEPENDENT UPON PROPOSED SUPPLY [Section 10910(e)] 11
SECTION 10910(e) 11
Section 10910(e) states: 11
Use of Groundwater 12
Use of Surface Water 12
DOES SUPPLY FOR PROJECT INCLUDE GROUNDWATER? [Section 10190(f)] 12
SECTION 10910(f) 12
Section 10910(f)(1) 12
Section 10910(f)(2) 13
Section 10910(f)(3) 17
Section 10910(f)(4) 17
Section 10910(f)(5) 18
DETERMINATION OF SUFFICIENCY 19

List of Figures

Figure 1 The Ranch at Sunridge Location Map 2
Figure 2 The Ranch at Sunridge Project Boundary 3
Figure 3 Spatial Distribution of SCWA's Existing and Future Well Fields 18

List of Tables

Table 1 Proposed Land Use and Water Demands Estimate for the Project 4
Table 2 Water Demand Growth Projection in Five-Year Increments for the Project 4
Table 3 SCWA Zone 40 Water Demands in Five-Year Increments 5
Table 4 Zone 40 Current and Projected Groundwater Pumping in Five-Year Increments 6
Table 5 Water Supply Entitlements, Water Rights, and Water Service Contracts to Meet Zone 40 Build-out Water Demand 8
Table 6 Zone 40 Current and Projected Surface Water Supply in Five-Year Increments 9
Table 7 Historical Groundwater Pumping in Zone 40, 2000 – 2010 17
Table 8 Zone 40 Water Supply in Five-Year Increments (AF/year) 19
Table 9 Zone 40 Water Supply Sufficiency Analysis in Five-Year Increments (AF/year) 20

INTRODUCTION

BACKGROUND

The California Water Code (Water Code) requires coordination between land use lead agencies and public water purveyors. The purpose of this coordination is to ensure that prudent water supply planning has been conducted, and that planned water supplies are adequate to meet both existing demands and demands of planned development.

Water Code Sections 10910 – 10915 (inclusive) require land use lead agencies: 1) to identify the responsible public water purveyor for a proposed development project, and 2) to request a "Water Supply Assessment" (WSA) from the responsible purveyor. The purpose of a WSA is to demonstrate the sufficiency of a purveyor's water supplies to satisfy the water demands of a proposed development project while still meeting the current and projected water demands of existing customers. Water Code Sections 10910 – 10915 delineate the specific information that must be included in a WSA.

THE PROPOSED DEVELOPMENT PROJECT

The Ranch at Sunridge Project (Project) is a 530.2-acre area comprising a portion of the Sunrise Douglas Community Plan located within the City of Rancho Cordova (City). See Figure 1 for project location. The City has identified the Sacramento County Water Agency (SCWA) as the responsible water purveyor for the Project and has requested that SCWA prepare a WSA in accordance with Water Code Sections 10910 – 10915.

WATER SUPPLY ASSESSMENT OBJECTIVE

The objective of the Ranch at Sunridge WSA is to demonstrate that the planned water supplies of SCWA are sufficient to meet the demands of the Project in addition to the existing and projected water supply obligations of SCWA.

OVERVIEW OF THE RANCH AT SUNRIDGE WSA

The Project lies entirely within the boundaries of SCWA's Zone 40. Figure 2 shows the boundaries of the Project. The water demands associated with the Project have been included and addressed in the latest Zone 41 Urban Water Management Plan (UWMP) (SCWA, 2011)[1] and in the development of the Zone 40 "conjunctive use" program[2] as described in the Zone 40 Water Supply Master Plan (WSMP) (SCWA, February 2005)[1].

[1] This document, as well as all other documents referenced in this WSA, are on file at the County of Sacramento, Municipal Services Agency, Department of Water Resources, 827 7th Street, Room 301, and are available for review upon request.

[2] Conjunctive use entails the combined use of groundwater and surface water to meet demand, with the intent of providing 100 percent reliability. In "dry" years, the use of groundwater is maximized (although some surface water is delivered). In "wet" years, surface water diversions are maximized, while groundwater extractions are reduced. Such a program maximizes environmental benefits to surface water streams in "dry" years, while providing an opportunity for the groundwater basin to recover through natural recharge in "wet" years.

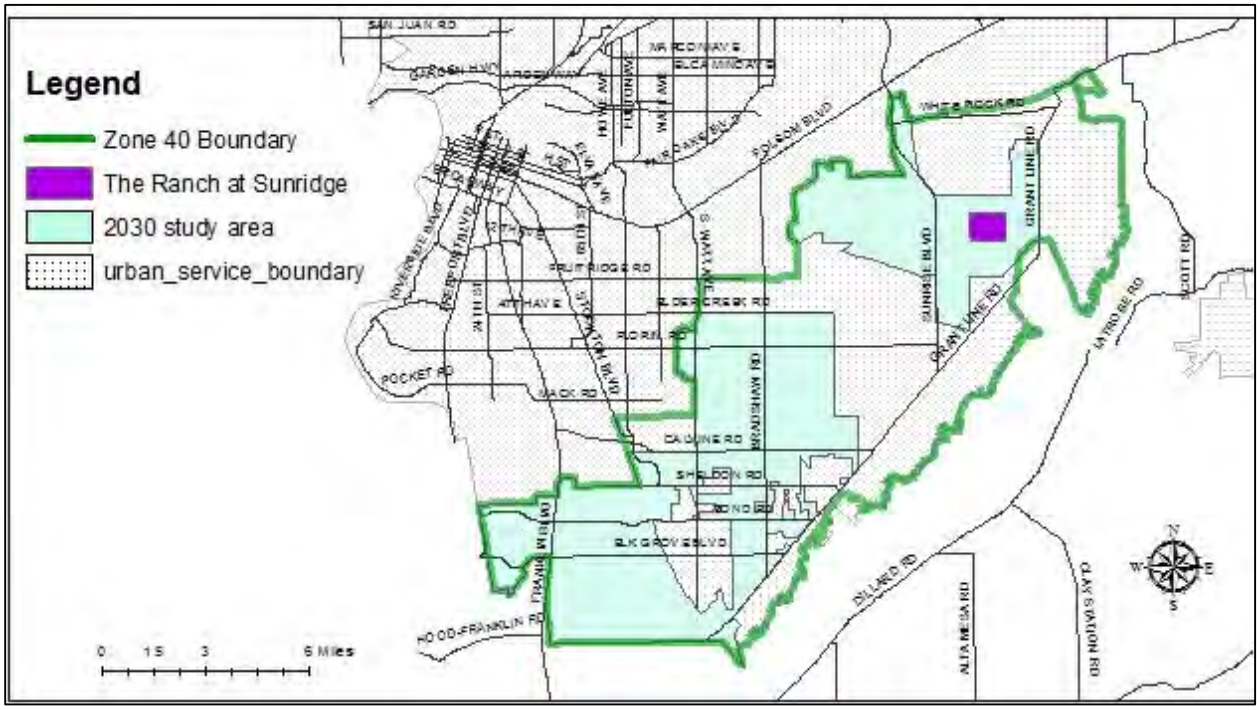


Figure 1 The Ranch at Sunridge Location Map

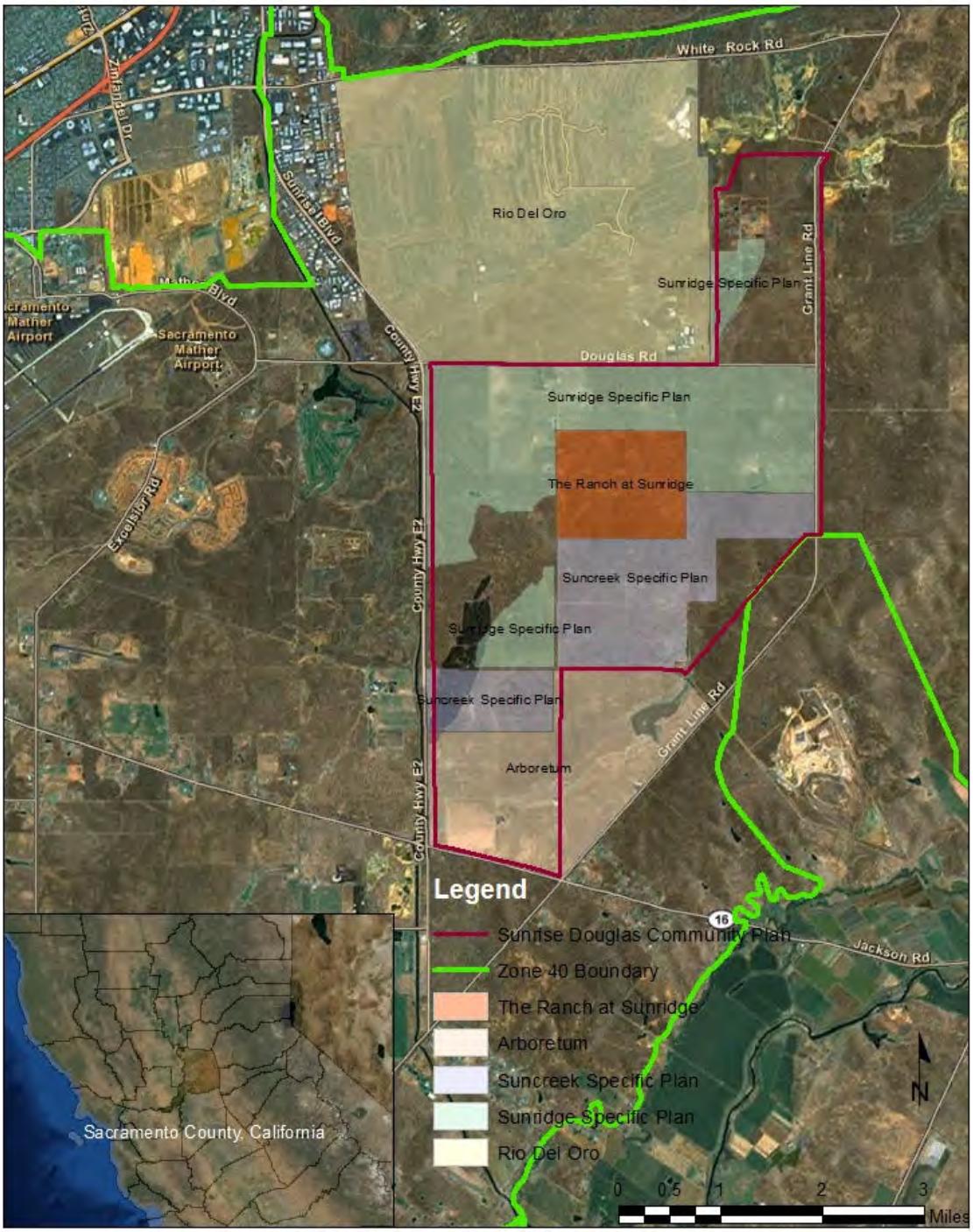
Accordingly, the WSA for the Project contains information derived from the UWMP[1] and other various water supply planning documents prepared in support of the Zone 40 conjunctive use program including:

- The Zone 40 Water Supply Master Plan (WSMP), (SCWA, February 2005)[1];
- The Zone 40 Water System Infrastructure Plan (WSIP), (SCWA, April 2006)[1];
- The Central Sacramento County Groundwater Management Plan (MWH/SCWA, February 2006)[1];
- The Final Environmental Impact Report (FEIR) for 2002 Zone 40 Water Supply Master Plan (EDAW, December 2004)[1];
- The FEIR for the Water Forum Proposal (FEIR – WFA), Sacramento City-County Office of Metropolitan Water Planning, October 1999[1]; and
- The Water Forum Agreement (WFA)[3], Sacramento City-County Office of Metropolitan Water Planning, January 2000[1].

[3] Begun in 1993, the Sacramento-Area Water Forum (Water Forum) is comprised of representatives from the business, environmental, public interest, and water purveyor communities (including the Cooperating Agencies). The co-equal objectives of the group are:

- To provide a reliable and safe water supply for the region's economic health and planned development through year 2030
- To preserve the fishery, wildlife, recreational, and aesthetic values of the lower American River.

After a six-year, consensus-based, stakeholder process, the Water Forum Action Plan (referred to after its adoption as the Water Forum Agreement), which prescribes a regional conjunctive use program for the lower American River and the connected groundwater basin. In addition, the Water Forum completed an Environmental Impact Report (EIR) for the Water Forum Proposal was completed (State of California Clearinghouse Number 95082041). The document was certified by the two lead agencies (the City of Sacramento and the County of Sacramento) in 1999.



The Ranch At Sunridge

SACRAMENTO COUNTY WATER AGENCY
DEPARTMENT OF WATER RESOURCES

Figure 2 The Ranch at Sunridge Project Boundary

WSA FOR THE RANCH AT SUNRIDGE PROJECT

Water Code Sections 10910 – 10915 delineate the specific requirements of a WSA. The WSA for the Project is structured according to those requirements.

DETERMINE IF PROJECT IS SUBJECT TO CEQA [Section 10910 (a)]

The City has made the determination that the Project is subject to CEQA.

IDENTIFY RESPONSIBLE PUBLIC WATER SYSTEM [Section 10910(b)]

The City has identified SCWA as the responsible public water provider for the Project.

DETERMINE IF UWMP INCLUDES WATER DEMANDS [Section 10910(c)]

The total area for the Project is estimated to be 530.2 acres. The projected annual water demand for the project is 1,101.2 acre-feet per year (AF/year), including system losses. The proposed land use and projected water demand for the Project is provided in Table 1. Table 2 shows the water demand projection over the next 20 years in five-year increments.

Table 1 Proposed Land Use and Water Demands Estimate for the Project

Land Use Description	Land Use Classification[1]	Area (acres) [1]	Unit Water Demand Factor[2] (AF/acre/year)	Water Demand (AF/year)
Single Family Low Density	Single Family	142.3	2.89	411.25
Single Family Medium Density	Multi-Family Low Density	105.4	3.70	389.98
Multi Family High Density	Multi-Family High Density	12.2	4.12	50.26
Commercial	Commercial	13.5	2.75	37.13
Parks	Public Recreation	38.0	3.46	131.48
Major Roads	Right-of-Way	20.5	0.21	4.31
Wetland Preserve	Vacant	174.0	0.0	0.0
Detention Basin	Vacant	24.3	0.0	0.0
Subtotal		**530.2**		**1,024.4**
System Losses 7.5%				76.8
Total Demand				**1,101.2**

Note(s): (1) The land use classification and acreage information were provided by the project proponent in May 2011, and (2) The unit water demands provided in this table are consistent with the WSMP.

Table 2 Water Demand Growth Projection in Five-Year Increments for the Project

Year	2010	2015	2020	2025	2030
Water Demand (AF/year)	0	330.4	881.0	1,101.2	1,101.2

Inspection of Figure 1-1 in the WSMP indicates that the Project is located within the 2030 Study Area as defined in the WSMP, and in the SCWA's Service Area as defined in the UWMP.

The projected water demands associated with the Project is contained in the WSMP. During the development of the WSMP, there was no detailed land use information available for the Project except that it was projected to be "mixed land uses". The WSMP uses a unit demand factor of 2.51 AF/year/acre for "mixed land uses" to estimate the water demands for the Project area and other areas with the same land use classification for overall planning purpose.[4] Based on this unit demand factor, the WSMP projected a total water demand for the Project of 1,330.8 AF /year. The projected demand WSMP is greater than the water demand calculated for the currently proposed Project shown in Table 2 above (1,330.8 AFY/year as compared to 1,101.2 AFY/year). Accordingly, the water demands associated with the Project are accounted for in the WSMP.

The projected water demands associated with the Project is also accounted for in the UWMP. The water demands shown in the UWMP through 2035 are an estimated gallons per capita per day (GPCD) target chosen by SCWA and are based on the projected population. Establishing a GPCD target is a new requirement for the UWMP in accordance with Senate Bill (SB) x7-7, adopted in November 2009. Because the population projection for the Project area is included in the total population projection for SCWA, the water demand associated with the Project is considered accounted for in the UWMP. Therefore, it is reasonable to conclude that the data from the UWMP can be relied upon to meet current and projected demands (see Water Code Section 10910 (c)(2)).

The UWMP has identified SCWA's Zone 40 water demand in normal, single dry, and multiple dry years in 5-year increments for the 25-year projection (2010 to 2035), as shown in Tables 7-1, 7-2, and 7-3 of the UWMP. As indicated above, the Project's water demands are included as part of the Zone 40 demands in these tables. A summary of the pertinent data from these tables is presented in Table 3 below.

Table 3 SCWA Zone 40 Water Demands in Five-Year Increments

Water Year	2010	2015	2020	2025	2030	2035
Normal Year (Table 7-1, UWMP) (1)	34,511	44,425	50,662	57,583	67,565	77,712
Single Dry Year (Table 7-2, UWMP) (2)	34,511	44,425	50,662	57,583	67,565	77,712
Multiple Dry Year (3) (Table 7-3, UWMP)	34,511	44,425	50,662	57,583	67,565	77,712
Multiple Dry Year (3) (Table 7-3, UWMP)	34,511	44,425	50,662	57,583	67,565	77,712
Multiple Dry Year (3) (Table 7-3, UWMP)	34,511	44,425	50,662	57,583	67,565	77,712

Notes:
(1) Normal/Average year is a year in the historical sequence that most closely represents median runoff levels and patterns. Average is defined as the median runoff over the previous 30 years or more. By this definition, 1993 is a normal/average year for the Sacramento River watershed.
(2) Single-dry year is generally considered to be the lowest annual runoff for a watershed since the water year beginning in 1903. 1977 is a single-dry year for the Sacramento River watershed.
(3) Multiple-dry year period is generally considered to be the lowest average runoff for a consecutive multiple year period (three years or more) for a watershed since 1903. 1989-1992 is a multiple-dry year period for the Sacramento River watershed.

[4] This unit water demand factor represents a weighted average demand for a typical mixed land uses area that includes residential, commercial, recreation, and open space. Without detailed land use information, it is a relatively reliable method for water demand estimation for general water supply planning purposes.

IDENTIFY EXISTING WATER SUPPLIES FOR THE PROJECT [Section 10910(d)]

SECTION 10910(d)(1)

Section 10910(d)(1) requires identification of existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed Project and a description of the quantities of water obtained by SCWA pursuant to these water supply entitlements, water rights, or water service contracts in previous years.

Use of Groundwater

The Project water demands will ultimately be met by a combination of groundwater and surface water. Initial demands for the Project will likely be met by groundwater extracted from the North Vineyard [a.k.a. Excelsior] Well Field (NVWF) south of Mather Field and possibly the Mather Housing wells located at Mather Field. Groundwater from NVWF will be conveyed to and treated at the Anatolia Water Treatment Plant (WTP) located to the northwest of the project area. After treatment, the groundwater will be distributed to the Project area through the existing and future water distribution system. Surface water will not be available to the Project and surrounding areas until the North Service Area (NSA) pipeline and terminal storage tanks are constructed. The NSA pipeline is the transmission pipeline that will convey treated surface water from SCWA's Vineyard Surface Water Treatment Plant (VSWTP) to the NSA.

SCWA currently exercises, and will continue to exercise, its rights as a groundwater appropriator to extract groundwater from the groundwater basin (Central Basin) underlying Zone 40 for delivery to its customers[5]. The UWMP has identified Zone 40 current and projected groundwater pumping in normal, single dry, and multiple dry years in 5-year increments for the 25-year projection (2010 to 2035), as shown in Tables 4-11 through 4-16 of the UWMP. A summary of the pertinent data from these tables is presented in Table 4 below.

Table 4 Zone 40 Current and Projected Groundwater Pumping in Five-Year Increments

Water Year	2010 (Table 4-11, UWMP)	2015 (Table 4-12, UWMP)	2020 (Table 4-13, UWMP)	2025 (Table 4-14, UWMP)	2030 (Table 4-15, UWMP)	2035 (Table 4-16, UWMP)
Normal Year (1)	35,000	20,000	15,000	20,000	25,000	15,000
Single Dry Year (2)	39,930	46,300	48,800	61,300	64,500	68,600
Multiple Dry Year (3)	36,232	32,500	30,500	38,500	37,200	36,800
Multiple Dry Year (3)	37,464	35,000	33,500	42,000	41,200	41,300
Multiple Dry Year (3)	38,080	36,250	35,000	43,750	43,200	43,550

Notes:
(1) Normal/Average year is a year in the historical sequence that most closely represents median runoff levels and patterns. Average is defined as the median runoff over the previous 30 years or more. By this definition, 1993 is a normal/average year for the Sacramento River watershed.
(2) Single-dry year is generally considered to be the lowest annual runoff for a watershed since the water year beginning in 1903. 1977 is a single-dry year for the Sacramento River watershed.
(3) Multiple-dry year period is generally considered to be the lowest average runoff for a consecutive multiple year period (three years or more) for a watershed since 1903. 1989-1992 is a multiple-dry year period for the Sacramento River watershed.

[5] The groundwater basin underlying Zone 40 has not been adjudicated.

For the Zone 40 portion of the Central Basin, a long-term average annual yield of 40,900 AF/year has been identified in both the WFA and WSMP. Additionally, as a signatory to the WFA and a member of the Sacramento Central Groundwater Authority (Groundwater Authority), SCWA recognizes the Water Forum-defined long-term sustainable average annual yield of the underlying groundwater basin of 273,000 AF/year.

Use of Surface Water

The SCWA conjunctive use program includes the delivery of surface water within the Zone 40 boundaries as part of a comprehensive program to maintain the long-term, regional balance of the groundwater basin (see WSMP). Currently SCWA has obtained two sources of surface water supplies totaling up to 75,751 AF/year available on a long-term average:

- Appropriative Water

  In February 2008, the State Water Resources Control Board (SWRCB) approved SCWA's appropriative right permit application to divert water from the American and Sacramento Rivers (Permit 21209). Water under this permit is considered "intermittent water" that is typically available during the winter months of normal or wet years. These flows could range up to 71,000 ac-ft/yr. The long-term average availability of this supply is 21,700 AF/year. Note that the long-term availability for appropriative water in WSMP and UWMP is updated.

- CVP Water

  CVP water is described under three different contracts, as follows.

  - SMUD 1 Assignment - 15,000 AF/year of SMUD's CVP contract water has been assigned to SCWA under the terms of an agreement with SMUD. The long-term availability of SMUD1 water is 13,000 AF/year.
  - SMUD 2 Assignment - 15,000 AF/year of SMUD's CVP contract water has been assigned to SCWA under the terms of an agreement with SMUD. The long-term availability of SMUD2 water is 13,000 AF/year.
  - CVP Water Public Law 101-514 ("Fazio" Water)
    SCWA has entered into a contract with the U.S. Bureau of Reclamation (USBR) for 22,000 AF/year of Central Valley Project (CVP) supplies from the American River pursuant to Public Law (PL) 101-514 (often referred to as "Fazio water"). Of this 22,000 AF/year, 7,000 AF/year has been subcontracted to the City of Folsom for diversion from Folsom Lake. The remaining 15,000 AF/year will be diverted by SCWA from the Sacramento River. The long-term average availability of this supply is 13,551 AF/year.

There are two future surface water supplies, POU water and water transfers, planned for in the WSMP to meet build-out water demand. The timing for acquiring these two surface water supplies will be determined by demand growth in Zone 40.

- POU water refers to surface water obtained through a water wholesale agreement with the City of Sacramento (City) whereby the City will sell surface water to SCWA for use in the portion of Zone 40 that lies within the City's American River POU. The amount of water required to serve the POU area is estimated to be 9,300 ac-ft/yr.
- Water transfers refers to surface water obtained through a water purchase and transfer agreement that SCWA would enter into with other entities that currently hold surface water rights upstream of SCWA's points of diversion. According to the WSMP, the amount of water needed is estimated to be 5,200 ac-ft/yr.

Contract documents, agreements, and applications for appropriative water and CVP water supplies are available for review (see footnote 1). Table 5 (or Table 4-3 in UWMP) shows all the surface water entitlements, water rights, and water services contracts to meet the build-out water demand in Zone 40.

Table 5 Water Supply Entitlements, Water Rights, and Water Service Contracts to Meet Zone 40 Build-out Water Demand

Water Supply Sources	Wholesaler Supplied Volume (Yes/No)	Status of Contract, Permit, and Agreement	Availability in Wet Years	Availability in Dry Years	Long-term Average	Reliability
Supplier-produced groundwater to serve Zone 40 [1]	no	Existing	27,300	Up to 69,900	40,900	High
Wholesaler – (City of Sacramento) to serve portion of Zone 40 in City of Sacramento's American river POU[1]	yes	Planned	9,300	9,300	9,300	High
Supplier-produced surface water to Serve Zone 40: U.S. Bureau of Reclamation – CVP Supply (SMUD 1, SMUD 2, and Fazio Water) [1]	yes	Existing	45,000	8,700	38,000	Moderate
Supplier-produced surface water to Serve Zone 40: Appropriative Water – SWRCB Permit 21209 [1]	no	Existing	Up to 71,000	0	21,700	Low
Other Water - Water Transfer [1]	no	Planned	0	9,600	5,200	Moderate to High
Recycled water for Zone 40 [1]	yes	Existing	4,400	4,400	4,400	High
Remediated groundwater to serve Rio del Oro in Zone 40	no	Existing	8,900	8,900	8,900	High
Zone 40 Subtotal			165,900	110,800	128,400	

Notes:

1. *Source: The Zone 40 Water Supply Master Plan. Groundwater pumping rates in wet and dry years are modeling results determined by the build-out demand and the availability of surface water. Groundwater pumping rates can be lower or higher than the numbers identified in the table as long as the long-term average is maintained below 40,900 ac-ft/yr.*

Table 6 presents the quantities of surface water supply pursuant to these water rights and contract entitlements in five-year increments beginning in the year 2010 through 2035 under normal, single dry, and multiple dry years.

Table 6 Zone 40 Current and Projected Surface Water Supply in Five-Year Increments

Water Year	2010 (Table 4-11, UWMP)	2015 (Table 4-12, UWMP)	2020 (Table 4-13, UWMP)	2025 (Table 4-14, UWMP)	2030 (Table 4-15, UWMP)	2035 (Table 4-16, UWMP)
Normal Year (1)	12,320	35,000	42,500	50,000	66,800	81,200
Single Dry Year (2)	7,390	8,700	8,700	8,700	18,000	27,600
Multiple Dry Year (3)	11,088	22,500	27,000	31,500	45,300	59,400
Multiple Dry Year (3)	9,856	20,000	24,000	28,000	41,300	54,900
Multiple Dry Year (3)	9,240	18,750	22,500	26,250	39,300	52,650

Notes:
(1) Normal/Average year is a year in the historical sequence that most closely represents median runoff levels and patterns. Average is defined as the median runoff over the previous 30 years or more. By this definition, 1993 is a normal/average year for the Sacramento River watershed.
(2) Single-dry year is generally considered to be the lowest annual runoff for a watershed since the water year beginning in 1903. 1977 is a single-dry year for the Sacramento River watershed.
(3) Multiple-dry year period is generally considered to be the lowest average runoff for a consecutive multiple year period (three years or more) for a watershed since 1903. 1989-1992 is a multiple-dry year period for the Sacramento River watershed.

SECTION 10910(d)(2)

Section 10910(d)(2) requires SCWA to demonstrate that water supplies required to serve the Project actually exist. Section 10910(d)(2) defines what constitutes "proof".

Section 10910(d)(2)(A)

This subsection requires written contracts or other proof of entitlement to the water supplies identified for the Project. The contracts and agreements for the surface water supplies are available for review at the offices of the County of Sacramento, Municipal Services Agency, Department of Water Resources (see footnote 1).

Initial water demands in the Project will likely be met with groundwater. SCWA will exercise its right as a groundwater appropriator to extract groundwater from the basin for delivery to the Project. In the long-term, the water demands of the Project will be met in accordance with the conjunctive use program described in the WSMP.

Section 10910(d)(2)(B)

This subsection requires a copy of the capital outlay program for financing the delivery of the identified water supply to the Project. The documents described below are available for review at the offices of the County of Sacramento, Municipal Services Agency, Department of Water Resources (see footnote 1).

A financing plan for the construction of groundwater and surface water facilities needed to realize the conjunctive use program identified in the WSMP has been approved by SCWA's Board of Directors (Board). The financing plan, as outlined in Chapter 7 of the WSMP, identifies the necessary water facility projects and estimated costs associated with implementation of said conjunctive use program (Capital Improvement Program or CIP).

In addition to the WSMP, the Feasibility Report for Sacramento County Water Financing Authority Series 2007 Revenue Bonds (Sacramento County Water Agency Freeport Project) (MWH, April 2007), and the Sacramento County Water Agency FY 2009/10 Water Rate Study Report (FCS Group) evaluated and updated the total cost and fee requirements of the Zone 40 conjunctive use program incorporating all future Zone 40 expenditures for major capital facilities (i.e., surface water treatment plants, groundwater treatment plants, major transmission mains, etc.) and annual operation and maintenance costs associated therewith. Funding to meet SCWA's capital and annual funding requirements was then implemented by the Board through the issuance of revenue bonds for certain projects and the adoption of user fee and development fee increases over time (most recently in 2009).

SCWA's capital outlay program includes the means for financing facilities to deliver the identified water supply to the Project. Specifically, all facilities needed to serve the Project are included in the CIP that was financed through the above described revenue bonds, user fee and development fee. The development fee and user fee, as described in Titles 3 and 4 of the Sacramento County Water Agency Code, will continue to provide revenue to finance all aspects of the Zone 40 conjunctive use program (including repayment of debt financing). Both fee programs are evaluated annually and adjusted, if necessary, to accommodate changes in the service area, water demands, needed capital projects, and required debt financing.

Section 10910(d)(2)(C)

This subsection requires identification of any federal, state, and local permits required for construction of the facilities identified for delivering the water supply to the Project.

Since adoption of the WSMP, SCWA has made significant progress in the development of its conjunctive use water supply program. SCWA, in cooperation with East Bay Municipal Utility District (EBMUD), has completed the Freeport Regional Water Project (FRWP). SCWA's portion of the project consists of participation in a large diversion facility on the Sacramento River just north of the community of Freeport, and a recently completed transmission pipeline that will convey surface water to:

1. SCWA's new VSWTP that is currently nearing completion at the northeast corner of the intersection of Florin Road and Knox Road for treatment prior to delivery to SCWA's customers, and
2. The Folsom South Canal where EBMUD will discharge their flows for conveyance to their service area in the East Bay.

The VSWTP is anticipated to be on line in late 2011. In order to deliver treated surface water to the Project and other surrounding projects, SCWA will need to construct a major water transmission pipeline, the NSA pipeline. SCWA approved an initial study/mitigated negative

declaration for this project pursuant to CEQA in September 2010. It is SCWA's intent to secure approval of the necessary permits and construction documents for this project so that it can be constructed prior to demand for water within the NSA exceeding the capacity of the groundwater system currently serving customers in this area. The timing of construction of the NSA pipeline cannot be precisely predicted at this time, as it will be dependent on demand growth in the NSA.

The various federal, state, and local permits for the construction of the FRWP and the VSWTP have been obtained. Copies of these permits are available for review at the offices of the County of Sacramento, Municipal Services Agency, Department of Water Resources (see footnote 1). Construction of the NSA pipeline and related facilities required for the delivery of surface water to the Project will also require a variety of permits as necessary. Additional site-specific environmental review and approval may also be needed for water storage tanks and other appurtenances that will be constructed in conjunction with the NSA pipeline. Any additional conveyance pipelines needed to complete the treated water system will be constructed within existing and future public right-of-way and easements. At this time, SCWA does not foresee any regulatory or legal impediments to completing any necessary further environmental review and obtaining those permits when the need arises.

Section 10910(d)(2)(D)

This subsection requires identification of any regulatory approvals required for delivery of the water supply to the Project.

Water production, treatment, and storage facilities will be added to SCWA's public water system permit issued by the California Department of Public Health (DPH) and the design of these facilities will require review and approval by DPH. No other regulatory approvals are anticipated.

IDENTIFY PARTIES DEPENDENT UPON PROPOSED SUPPLY [Section 10910(e)]

SECTION 10910(e)

Section 10910(e) states:

"If no water has been received in prior years by the public water system…, under the existing water supply entitlements, water rights, or water service contracts [identified to serve the proposed project], the public water system,…shall also include in its water supply assessment pursuant to subdivision (c), an identification of the other public water systems or water service contract holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts to the same source of water as the public water system,…, has identified as a source of water supply within its water supply assessments."

The intent of this section is to identify any potential conflicts that may arise from the exercise of a water supply entitlement, water right, or water service contract to serve a proposed project if such water supply entitlement, water right, or water service contract has not been previously exercised.

Use of Groundwater

The water demands of the Project will be met with groundwater and surface water. SCWA has previously exercised its rights as a groundwater appropriator to meet the water demands of its customers and will continue to exercise those rights to provide treated groundwater supplies to the Project.

Use of Surface Water

The surface water supplies associated with SCWA's conjunctive use program fall into four categories:

1) Water supplies available through a current USBR CVP contract.
2) Water supplies available through SWRCB Permit 21209.
3) Water available through the City of Sacramento for use within the American River Place of Use (POU).
4) Surface water transfers identified in the WSMP.

The source of supply for surface water is the USBR CVP and SWRCB Permit 21209. Thus, the parties that could most directly be affected are other CVP contractors. Additionally, until such time as the SWRCB Bay Delta Water Rights Hearings are concluded, other parties that could be affected include: CVP contractors, State Water Project (SWP) contractors, water rights holders subject to Term 91 conditions, and riparian diverters downstream of SCWA's point of diversion. The point of diversion is at a site near the community of Freeport on the Sacramento River.

The source of supply for that portion of SCWA that lies within the POU is the City of Sacramento. Delivery of this water to customers within the POU has been included in the City of Sacramento's long-range plan for perfecting their American River water rights. The diversion location, timing, and volume of delivery are currently under negotiation.

Surface water transfers would require SCWA to enter into purchase and transfer agreements with other entities that currently hold surface water rights upstream of SCWA's points of diversion. According to the WSMP, the amount of water needed is estimated to be 5,200 AF/year. The timing for the acquisition of this water supply is yet to be determined.

DOES SUPPLY FOR PROJECT INCLUDE GROUNDWATER? [Section 10190(f)]

SECTION 10910(f)

The water demands of the Project will partially be met with groundwater extracted from the Central Basin. Consequently, Section 10910(f) requires additional information about groundwater to be presented in this WSA.

Section 10910(f)(1)

Section 10910(f)(1) requires a review of groundwater information contained in the UWMP relevant to the identified water supply for the Project. The appendix section of the UWMP includes a copy of the Central Sacramento County Groundwater Management Plan (CSCGMP, or Central Basin GMP) for the groundwater basin from which SCWA extracts groundwater; the Central Basin GMP was adopted by the Sacramento Central Groundwater Authority

(Groundwater Authority) in November 2006. The Central Basin GMP contains detailed information about the groundwater basin underlying the Central Basin (including Zone 40), groundwater supplies, and basin management objectives.

Section 10910(f)(2)

Section 10910(f)(2) requires a description of the groundwater basin and the efforts being taken to prevent long-term overdraft.

For the Project, SCWA would pump groundwater from the South American Sub-basin as defined by the California Department of Water Resources (DWR) Bulletin 118. According to Bulletin 118, the South American Sub-basin is defined as the area bounded on the west by Interstate 5 and the Sacramento River, on the north by the American River, on the south by the Cosumnes and Mokelumne rivers and on the east by the Sierra Nevada. The Central Basin covers a major portion of this basin.

Groundwater in the Central Basin is generally classified as occurring in a shallow aquifer (Laguna or Modesto Formation) and in a deep aquifer (Mehrten Formation). The Laguna or Modesto Formation consists of older alluvial deposits of loosely to moderately compacted sand, silt, and gravel deposited in alluvial fans. These deposits are moderately permeable and have a thickness of about 100 to 650 feet. The deeper Mehrten Formation is a sequence of fragmented volcanic rocks which crops out in a discontinuous band along the eastern margin of the basin. It is composed of black volcanic sands, stream gravels, silt, and clay inter-bedded with intervals of dense tuff breccia. The sand and gravel intervals are highly permeable and the tuff breccia intervals act as confining layers. The thickness of the Mehrten Formation is between 200 and 1200 feet. Groundwater is located from 20 to 100 feet below the ground surface depending on when and where the measurement is taken. The base of the potable water portion of the deep aquifer is located approximately 1,400 feet below the ground surface.

Intensive use of groundwater over the past 60 years has resulted in a general lowering of groundwater elevations. Over time, isolated groundwater depressions have grown and coalesced into a single cone of depression that is centered in the southwestern portion of the basin, approximately 15 miles southwest of the project site. Groundwater level trends through much of the basin have generally declined consistently from the 1950s and 1960s to about 1980 by 20 to 30 feet. From 1980 through 1983, water levels recovered by about 10 feet and remained stable until the beginning of the 1987-1992 drought; however, wells in the vicinity of Rancho Cordova appear to have recovered less than other wells in the basin since 1995 (generally less than 10 feet). From 1995 to 2003 most groundwater levels recovered to levels that were generally higher than levels prior to the 1987 through 1992 drought. Much of this recovery can be attributed to the increased use of surface water in the Central Basin, and the fallowing of previously irrigated agricultural lands transitioning into new urban development areas. In the central portion of the Central Basin, where the Project site is located, groundwater level trends observed in California Department of Water Resources monitoring wells generally vary between 40 feet above to 40 feet below mean sea level over the period of the 1950's through the 2000's.

Recharge of the aquifer system occurs along active river and stream channels where extensive sand and gravel deposits exist, particularly along the American, Cosumnes, and Sacramento

rivers. Additional recharge occurs along the eastern boundary of Sacramento County at the transition point from the consolidated rocks of the Sierra Nevada to the alluvial-deposited basin sediments. This recharge is classified as subsurface recharge along with underground flow into and out of the basin with adjacent groundwater basins. Other sources of recharge include deep percolation from applied surface water and precipitation.

As mentioned previously, the estimated long term annual sustainable yield of groundwater from the Central Basin is 273,000 AF/year. Currently, groundwater extractions are estimated to be 250,000 acre-feet per year (excluding remediation).

The determination of the sustainable yield of the Central Basin (273,000 acre-feet per year) was negotiated by the Water Forum Groundwater Negotiating Team (GWNT) and involved a complex process that developed the long-term average annual pumping limit of the basin. The long-term average annual pumping limit is described as the hydro-geologic process under which groundwater can be pumped and not exceed average natural recharge over a long-term period of time. Under sustainable conditions, natural recharge is said to be able to make up for variations in the amount of pumping that occurs over the long-term, given wet and dry periods in the hydrologic record.

First, the GWNT developed future land and water use projections. Then the impacts associated with increased water demands, assuming that demand is met solely by groundwater, were described. These results were then compared with 1990 baseline conditions to provide the level of impact that could be expected if groundwater pumping were increased beyond baseline conditions.

Four quantifiable factors were used to determine the level of impact:

- Water quality degradation
- Dewatering of wells
- Higher cost of pumping
- Ground subsidence

Based on these four factors, a series of groundwater model runs quantified each condition in 10-year increments, beginning in 1990 and ending in 2030. Each model run was set up to reflect future land and water use conditions; then 70 years of historical hydrology were applied to each model run to determine how the aquifer might behave under wet and dry conditions.

After comprehensive review and analysis of the resulting data, the GWNT concluded that using 2005 levels of groundwater pumping (interpolated from the 2000 and 2010 modeling results) would provide the highest quantity of groundwater yield from the basin while minimizing impacts associated with the four factors of concern. Accordingly, the GWNT determined the 2005 pumping rates equated to a long-term pumping average annual pumping limit of approximately 273,000 acre-feet per year for the Central Basin.

Section 3.2 and Appendix E of the WSMP provide detailed descriptions of the Zone 40 conjunctive use program (see footnote 1). SCWA's operational approach for preventing overdraft of the groundwater basin underlying Zone 40 and optimizing the use of both

groundwater and surface water is discussed in detail in these sections. The FEIR for 2002 Zone 40 Water Supply Master Plan (see footnote 1) includes an extensive analysis of the effects of the Zone 40 conjunctive use program on the groundwater basin and on various recharge sources. A summary of the conjunctive use program is as follows:

SCWA's conjunctive use program is a coordinated approach to manage surface water and groundwater supplies to maximize the yield of available water resources. The conjunctive use program for SCWA includes the use of groundwater, surface water, remediated water and recycled water supplies. The program also includes the construction of a surface water diversion structure, a surface-water treatment plant, water conveyance pipelines; and groundwater extraction, treatment and distribution facilities.

This conjunctive use program relies on an abundance of surface water in wet years when as much surface water as possible will be diverted, within entitlement limitations, minimizing the use of groundwater. During these years the groundwater aquifer will be allowed to naturally replenish. In dry years, when surface water availability is reduced, SCWA will pump more groundwater from the replenished aquifer. Using surface water and groundwater conjunctively makes it easier for SCWA to meet demands in a single dry year or in multiple dry years. The goal of the conjunctive use program is to meet all demands during wet and dry years.

SCWA has adopted policies to insure systematic, incremental implementation of its conjunctive use program. These policies are also consistent with the terms of the WFA, which is intended to maintain a long-term sustainable groundwater supply. The policies are included in the SCWA's UWMP and WSMP, which include specific action items to assure implementation, specifically, development of additional surface water supply and treatment facilities to provide water during wet years, development of groundwater facilities to provide groundwater during dry years, in-lieu "banking" of groundwater during wet years, development and implementation of demand management and water conservation strategies, development of water reclamation facilities to meet non-potable demands, and development of a financing plan to implement these action items.

As a part of the Groundwater Authority, SCWA has committed to the implementation of the Central Basin GMP. The Central Basin GMP contains five basin management objectives (BMO) designed to maintain a safe, sustainable and high quality groundwater resource within the Central Basin. These BMOs, in conjunction with the program component action items, focus on managing and monitoring the basin to benefit all groundwater users in the basin and are intended to be specific enough to result in numerical criteria for the basin, but also flexible enough to be modified or adapted to new information on groundwater basin behavior over time. The five BMOs are summarized below:

1. Maintain the long-term average groundwater extraction rate at or below 273,000 acre-feet per year.
2. Maintain specific groundwater elevations within all areas of the basin consistent with the Water Forum "solution."
3. Protect against any potential inelastic land surface subsidence by limiting subsidence to no more than 0.007 feet per 1 foot of drawdown in the groundwater basin.

4. Protect against any adverse impacts to surface water flows in the American, Cosumnes and Sacramento rivers.
5. Water quality objectives:
    a. Total dissolved solids (TDS) concentration of less than 1,000 milligrams per liter (mg/l).
    b. Nitrate (NO_3) concentration of less than 45 mg/l.
    c. Volatile organic compounds (VOC).

The Groundwater Authority intends to achieve these objectives by implementing the following program component action items:

1. Stakeholder involvement; including public outreach, involving other agencies inside and adjacent to the basin, developing relationships with state and federal agencies, and pursuing partnership opportunities.
2. Monitoring program; including groundwater elevation monitoring, groundwater quality monitoring, land surface elevation monitoring, surface water/groundwater interaction monitoring, establishing protocols for collection of groundwater data, and establishing a data management system.
3. Groundwater resource protection; including well construction policies, well abandonment and destruction policies, wellhead protection measures, protection of recharge areas, control of the migration and remediation of contaminated groundwater, and control of saline water intrusion.
4. Groundwater sustainability; including demand reduction.
5. Planning integration; including existing integrated planning efforts, urban water management planning, DWSAP program, land use planning, and integrated groundwater and surface water modeling.

The Central Basin GMP also has an implementation plan that defines specific actions or trigger points and associated remedy activities linked with each of the BMOs. Once a trigger point has been reached, the Groundwater Authority must decide on a course of action.

Water quality analysis of the aquifers underling the Central Basin has shown that groundwater quality found in the upper aquifer system is of higher quality than that found in the lower aquifer system. This is principally because the lower aquifer system (specifically the Mehrten Formation) contains higher concentrations of iron and manganese, and higher concentrations of total dissolved solids (TDS). Notwithstanding these findings, the lower aquifer typically meets water quality standards as a potable water source. Water from the upper aquifer (specifically the Laguna Formation) generally does not require treatment (unless high arsenic values are encountered), other than disinfection for public drinking water systems.

The UWMP addresses water supply and demand issues, water supply reliability, water conservation, water shortage contingencies, and recycled-water usage for the areas within Sacramento County where SCWA provides retail water services, including the Project site. Together, the WSMP and UWMP outline a comprehensive conjunctive use program. Many of the facilities required to implement this conjunctive use program are now, or soon will be, complete and operational.

Section 10910(f)(3)

Section 10910(f)(3) requires a description of the volume and geographic distribution of groundwater extractions from the basin for the last five years.

Table 7 identifies past volumes of groundwater extracted by SCWA in Zone 40 between 2000 – 2010.

Through the water supply master planning process, SCWA identified a system of sixteen separate well fields throughout Zone 40. A distributed groundwater extraction strategy was selected because it would minimize drawdown effects of pumping by spreading extraction over a wide geographic area. The spatial distribution of the SCWA's current and future well fields is shown in Figure 3.

Table 7 Historical Groundwater Pumping in Zone 40, 2000 – 2010

Year	(Acre-Feet)
2000	20,022
2001	22,306
2002	22,949
2003	22,745
2004	25,790
2005	29,184
2006	31,162
2007	31,249
2008	34,225
2009	34,249
2010	32,171

Section 10910(f)(4)

Section 10910(f)(4) requires a description of the projected volume and geographic distribution of groundwater extractions from the basin.

Groundwater use is projected to decrease from the current level once the VSWTP comes online, but it will increase over time as water demand continues to grow in Zone 40. In wet and normal years, groundwater pumping will be minimized because surface water becomes the major water supply source. In dry years, groundwater pumping will increase significantly as surface water availability is considerably reduced. Table 4 identifies projected groundwater pumping necessary to meet Zone 40's water demands from 2015-2035 in normal, single dry, and multiple dry years. Reduction in projected pumping in wet/normal years between 2010 and 2035 reflects the phasing and availability of surface water facilities and supplies from the VSWTP. Over time, groundwater production will stabilize as SCWA's conjunctive use program is fully implemented.

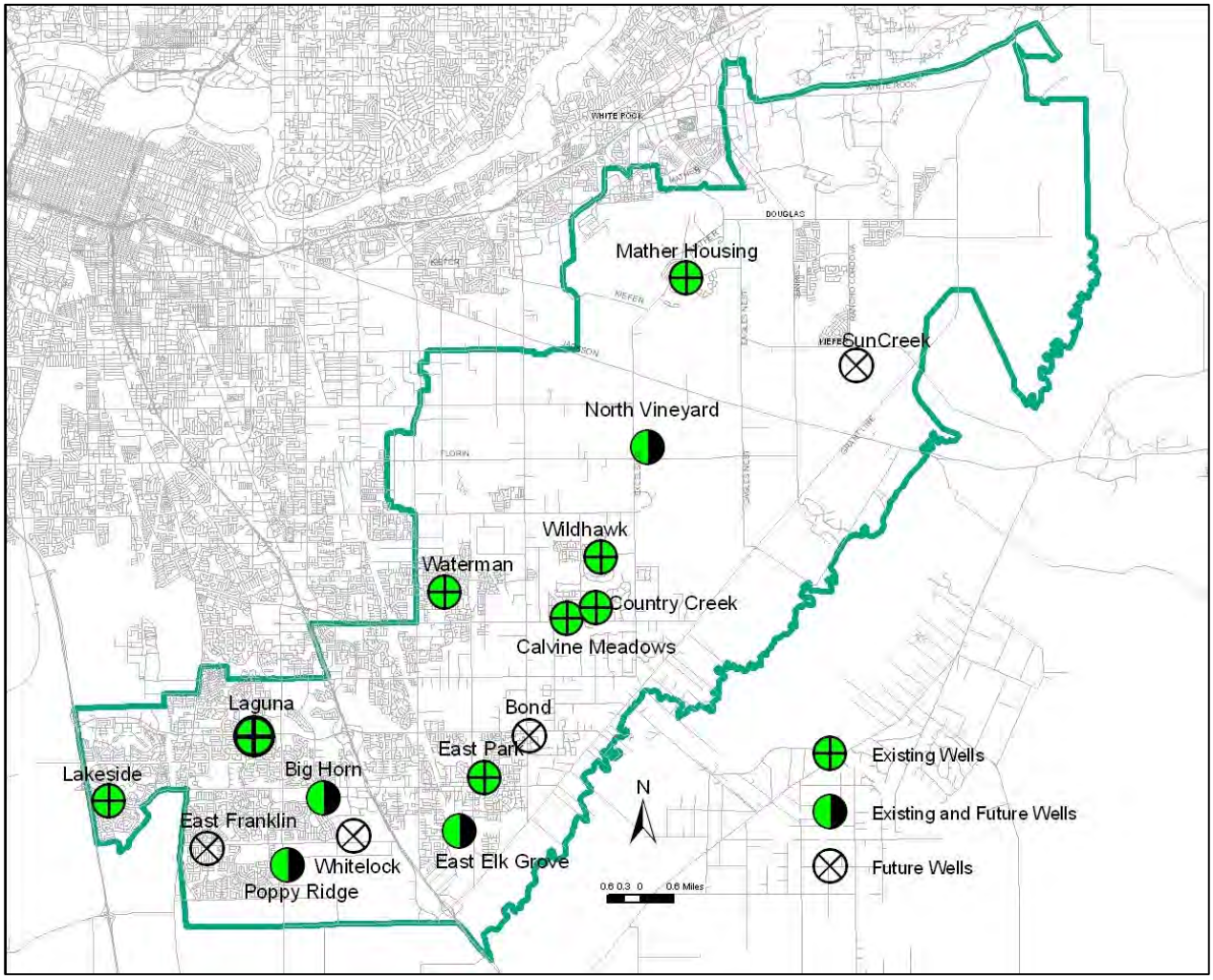


Figure 3 Spatial Distribution of SCWA's Existing and Future Well Fields

Section 10910(f)(5)

Section 10910(f)(5) requires an analysis of the sufficiency of the groundwater basin to meet the demands associated with the Project.

The WFA defined a long-term sustainable average annual yield of 273,000 AF/year for the Central Basin and provided for SCWA's groundwater needs as identified in the WSMP. The WSMP describes a conjunctive use program that identifies and projects a long-term sustainable average annual yield of 40,900 AF/year to meet identified water demands (including the demand associated with the Project).

SCWA's conjunctive use program has been extensively analyzed and documented in the WSMP, the FEIR for 2002 WSMP, certified in February 2006, the FEIR – WFA, certified in 1999, and the WFA (See footnote 1). All referenced documents have been subjected to thorough technical peer review and public scrutiny.

DETERMINATION OF SUFFICIENCY

SCWA determines that it has identified sufficient water supplies to meet the water demands of the Project.

SCWA makes this determination based on the information provided in this WSA and on the following specific facts:

- SCWA's conjunctive use program is a sustainable water supply program that provides a 100-percent reliable water supply while protecting environmental values and stabilizing the groundwater basin underlying Zone 40.
- SCWA's conjunctive use program has been extensively analyzed and documented in the WSMP, the FEIR for 2002 WSMP, certified in February 2006, the FEIR – WFA, certified in 1999, and the WFA (See footnote 1). All referenced documents have been subjected to thorough technical peer review and public scrutiny.
- The Project will be served by water supplies made available through SCWA's conjunctive use program.
- A financing plan for SCWA's conjunctive use program for constructing facilities required for delivering groundwater and surface water to the Project has been approved by the Board through its adoption of the WSMP, Bond Feasibility Reports, and the Sacramento County Water Agency Code.

The UWMP quantifies SCWA's total projected water supplies during normal, single dry, and multiple dry water years over a 25-year projection in five-year intervals. A summary of the pertinent data from these tables as it applies to Zone 40 is presented in Table 8.

Table 8 Zone 40 Water Supply in Five-Year Increments (AF/year)

Water Year	2010	2015	2020	2025	2030	2035
Normal Year (Table 7-1, UWMP)	48,320	58,000	64,400	79,400	103,700	109,500
Single Dry Year (Table 7-2, UWMP)	48,320	58,000	64,400	79,400	103,700	109,500
Multiple Dry Year (1) (Table 7-3, UWMP)	48,320	58,000	64,400	79,400	103,700	109,500
Multiple Dry Year (2) (Table 7-3, UWMP)	48,320	58,000	64,400	79,400	103,700	109,500
Multiple Dry Year (3) (Table 7-3, UWMP)	48,320	58,000	64,400	79,400	103,700	109,500

Notes:
(1) Normal/Average year is a year in the historical sequence that most closely represents median runoff levels and patterns. Average is defined as the median runoff over the previous 30 years or more. By this definition, 1993 is a normal/average year for the Sacramento River watershed.
(2) Single-dry year is generally considered to be the lowest annual runoff for a watershed since the water year beginning in 1903. 1977 is a single-dry year for the Sacramento River watershed.
(3) Multiple-dry year period is generally considered to be the lowest average runoff for a consecutive multiple year period (three years or more) for a watershed since 1903. 1989-1992 is a multiple-dry year period for the Sacramento River watershed.

The UWMP demonstrates that the total projected water supplies for Zone 40 under normal, single dry, and multiple dry years meet the proposed water demands (including existing and other projected future demands) over the next 25 years. A summary of the pertinent data from these tables is presented in Table 9.

Table 9 Zone 40 Water Supply Sufficiency Analysis in Five-Year Increments (AF/year)

Water Year	2010	2015	2020	2025	2030	2035
Normal Year						
Total Supply (Table 7-1, UWMP)	48,320	58,000	64,400	79,400	103,700	109,500
Total Demand (Table 7-1, UWMP)	34,511	44,425	50,662	57,583	67,565	77,712
Sufficiency (Supply Minus Demand)	13,809	13,575	13,738	21,817	36,135	31,788
Single Dry Year						
Total Supply (Table 7-2, UWMP)	48,320	58,000	64,400	79,400	103,700	109,500
Total Demand (Table 7-2, UWMP)	34,511	44,425	50,662	57,583	67,565	77,712
Sufficiency (Supply Minus Demand)	13,809	13,575	13,738	21,817	36,135	31,788
Multiple Dry Year (1)						
Total Supply (Table 7-3, UWMP)	48,320	58,000	64,400	79,400	103,700	109,500
Total Demand (Table 7-3, UWMP)	34,511	44,425	50,662	57,583	67,565	77,712
Sufficiency (Supply Minus Demand)	13,809	13,575	13,738	21,817	36,135	31,788
Multiple Dry Year (2)						
Total Supply (Table 7-3, UWMP)	48,320	58,000	64,400	79,400	103,700	109,500
Total Demand (Table 7-3, UWMP)	34,511	44,425	50,662	57,583	67,565	77,712
Sufficiency (Supply Minus Demand)	13,809	13,575	13,738	21,817	36,135	31,788
Multiple Dry Year (3)						
Total Supply (Table 7-3, UWMP)	48,320	58,000	64,400	79,400	103,700	109,500
Total Demand (Table 7-3, UWMP)	34,511	44,425	50,662	57,583	67,565	77,712
Sufficiency (Supply Minus Demand)	13,809	13,575	13,738	21,817	36,135	31,788

FINAL ENVIRONMENTAL IMPACT REPORT

FOR

THE RANCH PROJECT

(SCH: 2018072011)

DECEMBER 2019

Prepared for:

City of Rancho Cordova
2729 Prospect Park Drive
Rancho Cordova, CA 95670
(916) 851-8700

Prepared by:

De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762
(916) 580-9818

De Novo Planning Group

A Land Use Planning, Design, and Environmental Firm

ATTACHMENT 5

FINAL ENVIRONMENTAL IMPACT REPORT

FOR

THE RANCH PROJECT

(SCH: 2018072011)

DECEMBER 2019

Prepared for:

City of Rancho Cordova
2729 Prospect Park Drive
Rancho Cordova, CA 95670
(916) 851-8700

Prepared by:

De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762
(916) 580-9818

FINAL EIR

Chapter **Page Number**

Executive Summary ES-1

1.0 Introduction 1.0-1

1.1 Purpose and Intended Uses of the EIR 1.0-1

1.2 Environmental Review Process 1.0-2

1.3 Organization of the Final EIR 1.0-3

2.0 Comments on Draft EIR and Responses 2.0-1

2.1 Introduction 2.0-1

2.2 List of Commenters 2.0-1

2.3 Modifications to the Project 2.0-2

2.4 Comments and Responses 2.0-7

3.0 Revisions 3.0-1

3.1 Revisions to the Draft EIR 3.0-1

4.0 Final Mitigation Monitoring and Reporting Program 4.0-1

4.1 Mitigation Monitoring and Reporting Program 4.0-1

Tables **Page Number**

Table 2.0-1: List of Commenters on Draft EIR 2.0-1

Table 2.0-2: Land Use Summary 2.0-2

Table 2.0-3: Population Projections 2.0-3

Table 2.0-4: Quimby Parkland Requirement 2.0-4

Table 2.0-5: General Plan Land Use Designations 2.0-6

Table 4.0-1: Mitigation Monitoring and Reporting Program 4.0-2

This page left intentionally blank.

This Final Environmental Impact Report (Final EIR) was prepared in accordance with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines (Section 15132). The City of Rancho Cordova (City) is the lead agency for the environmental review of The Ranch Project (Project) and has the principal responsibility for approving the Project. This Final EIR assesses the expected environmental impacts resulting from approval of the Project and associated impacts from subsequent development and operation of the Project, as well as responds to comments received on the Draft Environmental Impact Report (Draft EIR).

1.1 PURPOSE AND INTENDED USES OF THE EIR

CEQA REQUIREMENTS FOR A FINAL EIR

This Final EIR for the Project has been prepared in accordance with the State CEQA Guidelines. State CEQA Guidelines Section 15132 requires that a Final EIR consist of the following:

- the Draft EIR or a revision of the draft;
- comments and recommendations received on the Draft EIR, either verbatim or in summary;
- a list of persons, organizations, and public agencies commenting on the Draft EIR;
- the responses of the lead agency to significant environmental concerns raised in the review and consultation process; and
- any other information added by the lead agency.

In accordance with State CEQA Guidelines Section 15132(a), the Draft EIR is incorporated by reference into this Final EIR.

An EIR must disclose the expected environmental impacts, including impacts that cannot be avoided, growth-inducing effects, impacts found not to be significant, and significant cumulative impacts, as well as identify mitigation measures and alternatives to the Project that could reduce or avoid its adverse environmental impacts. CEQA requires government agencies to consider and, where feasible, minimize environmental impacts of proposed development, and an obligation to balance a variety of public objectives, including economic, environmental, and social factors.

PURPOSE AND USE

The City, as the lead agency, has prepared this Final EIR to provide the public and responsible and trustee agencies with an objective analysis of the potential environmental impacts resulting from approval, construction, and operation of the Project. Responsible and trustee agencies that may use the EIR are identified in Sections 1.0 and 2.0 of the Draft EIR.

The environmental review process enables interested parties to evaluate the Project in terms of its environmental consequences, to examine and recommend methods to eliminate or reduce potential adverse impacts, and to consider a reasonable range of alternatives to the Project. While CEQA requires that consideration be given to avoiding adverse environmental effects, the lead

agency must balance adverse environmental effects against other public objectives, including the economic and social benefits of a project, in determining whether a project should be approved.

This EIR will be used as the primary environmental document to evaluate all aspects of construction and operation of the Project. The details and operational characteristics of the Project are identified in Chapter 2.0, Project Description, of the Draft EIR (August 2019).

1.2 ENVIRONMENTAL REVIEW PROCESS

The review and certification process for the EIR has involved, or will involve, the following general procedural steps:

NOTICE OF PREPARATION AND INITIAL STUDY

The City circulated an Initial Study and NOP of an EIR for the Project on July 6, 2018 to trustee agencies, the State Clearinghouse, and the public. A public scoping meeting was held on July 26, 2018 to present the Project description to the public and interested agencies, and to receive comments from the public and interested agencies regarding the scope of the environmental analysis to be included in the Draft EIR. Concerns raised in response to the NOP were considered during preparation of the Draft EIR. The NOP and responses to the NOP by interested parties are presented in Appendix A of the Draft EIR.

NOTICE OF AVAILABILITY AND DRAFT EIR

The City published a public Notice of Availability (NOA) for the Draft EIR on August 16, 2019 inviting comment from the general public, agencies, organizations, and other interested parties. The NOA was filed with the State Clearinghouse (SCH # 2019029106) and the County Clerk, and was published in a local newspaper pursuant to the public noticing requirements of CEQA. The Draft EIR was available for public review and comment from August 16, 2019 through September 30, 2019.

The Draft EIR contains a description of the Project, description of the environmental setting, identification of Project impacts, and mitigation measures for impacts found to be significant, as well as an analysis of Project alternatives, identification of significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. The Draft EIR identifies issues determined to have no impact or a less-than-significant impact, and provides detailed analysis of potentially significant and significant impacts.

RESPONSE TO COMMENTS/FINAL EIR

The City received several comment letters regarding the Draft EIR from public agencies. These comment letters on the Draft EIR are identified in Table 2.0-1, and are found in Section 2.0 of this Final EIR.

In accordance with CEQA Guidelines Section 15088, this Final EIR responds to the written comments received on the Draft EIR, as required by CEQA. This Final EIR also contains minor edits

to the Draft EIR, which are included in Chapter 3.0, Revisions. This document, as well as the Draft EIR as amended herein, constitute the Final EIR.

CERTIFICATION OF THE EIR/PROJECT CONSIDERATION

The City will review and consider the Final EIR. If the City finds that the Final EIR is "adequate and complete," the Rancho Cordova City Council may certify the Final EIR in accordance with CEQA and City environmental review procedures and codes. The rule of adequacy generally holds that an EIR can be certified if:

1) The EIR shows a good faith effort at full disclosure of environmental information; and

2) The EIR provides sufficient analysis to allow decisions to be made regarding the proposed project which intelligently take account of environmental consequences.

Upon review and consideration of the Final EIR, the Rancho Cordova City Council may take action to approve, revise, or reject the Project. A decision to approve the Project, for which this EIR identifies significant environmental effects, must be accompanied by written findings in accordance with State CEQA Guidelines Sections 15091 and 15093. A Mitigation Monitoring and Reporting Program, as described below, would also be adopted in accordance with Public Resources Code Section 21081.6(a) and CEQA Guidelines Section 15097 for mitigation measures that have been incorporated into or imposed upon the project to reduce or avoid significant effects on the environment. This Mitigation Monitoring and Reporting Program has been designed to ensure that these measures are carried out during Project implementation, in a manner that is consistent with the EIR.

1.3 ORGANIZATION OF THE FINAL EIR

This Final EIR has been prepared consistent with Section 15132 of the State CEQA Guidelines, which identifies the content requirements for Final EIRs. This Final EIR is organized in the following manner:

CHAPTER 1.0 – INTRODUCTION

Chapter 1.0 briefly describes the purpose of the environmental evaluation, identifies the lead, agency, summarizes the process associated with preparation and certification of an EIR, and identifies the content requirements and organization of the Final EIR.

CHAPTER 2.0 – COMMENTS ON THE DRAFT EIR AND RESPONSES

Chapter 2.0 provides a list of commenters, copies of written and electronic comments made on the Draft EIR (coded for reference), and responses to those written comments.

CHAPTER 3.0 – REVISIONS

Chapter 3.0 consists of minor revisions to the Draft EIR in response to comments received on the Draft EIR.

CHAPTER 4.0 – FINAL MMRP

Chapter 4.0 consists of a Mitigation Monitoring and Reporting Program (MMRP). The MMRP is presented in a tabular format that presents the impacts, mitigation measure, and responsibility, timing, and verification of monitoring.

2.1 INTRODUCTION

No new significant environmental impacts or issues, beyond those already covered in the Draft EIR for The Ranch Project (Project), were raised during the comment period. Responses to comments received during the comment period do not involve any new significant impacts or add "significant new information" that would require recirculation of the Draft EIR pursuant to CEQA Guidelines Section 15088.5.

CEQA Guidelines Section 15088.5 states that: *New information added to an EIR is not "significant" unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement.*

Sections 2.0 and 3.0 of this Final EIR include information that has been added to the EIR since the close of the public review period in the form of responses to comments and revisions.

2.2 LIST OF COMMENTERS

Table 2.0-1 lists the comments on the Draft EIR that were submitted to the City of Rancho Cordova (City) during the 45-day public review period for the Draft EIR. One comment letter was submitted after the close of the Draft EIR comment period (Letter J). The assigned comment letter or number, letter date, letter author, and affiliation, if presented in the comment letter or if representing a public agency, are also listed. Letters received are coded with letters (A, B, etc.).

TABLE 2.0-1 LIST OF COMMENTERS ON DRAFT EIR

RESPONSE LETTER	*INDIVIDUAL OR SIGNATORY*	*AFFILIATION*	*DATE*
A	Alex Fong	California Department of Transportation, District 3	9-23-2019
B	Laura Taylor	Cordova Recreation & Park District	9-30-2019
C	Plan Review Team	Pacific Gas & Electric Company	8-16-2019
D	Keith Goodrich	Sacramento County Department of Waste Management & Recycling	9-21-2019
E	Matthew Darrow	Sacramento County Department of Transportation	9-13-2019
F	Molly Wright	Sacramento Metropolitan Air Quality Management District	9-30-2019
G	Nicole Goi	Sacramento Municipal Utility District	9-27-2019

RESPONSE LETTER	INDIVIDUAL OR SIGNATORY	AFFILIATION	DATE
H	Gene Whitehouse	United Auburn Indian Community of the Auburn Rancheria	9-10-2019
I	Chris Holm	WALKSacramento	9-30-2019
J	Kim Williams	Elk Grove Unified School District	9-27-2019

2.3 MODIFICATIONS TO THE PROJECT

The tentative subdivision map for The Ranch Project was modified after the Draft EIR was released to the public. In coordination with staff from the City, the Project applicant team made refinements and minor revisions to the tentative subdivision map, SPA Handbook, and technical materials. None of these minor modifications to the Project would result in new significant impacts or mitigation measures, or increase the severity of an impact. The minor changes made to the Project since the Draft EIR was released for public review are reflected in Chapter 3.0, Revisions, of this Final EIR. The changes in Chapter 3.0 are provided in revision marks with underline for new text and ~~strike out~~ for deleted text. The figures which required revising as a result of the recent changes, Revised Draft EIR Figures 2.0-4, 2.0-5, and 2.0-6, are also shown in Chapter 3.0.

Under the revised tentative subdivision map, development was reduced from 1,725 residential units to approximately 1,690 residential units, including 705 age restricted single-family units, 732 non-age restricted single-family units, and up to 253 multifamily units (38 of which would be age-restricted), two commercial parcels totaling 5.33 net acres, a community clubhouse, a park and trail system, open space, and supporting infrastructure. There has also been a small increase in the right-of-way required for Rancho Cordova Parkway, which reduced Lot E by up to 0.35 acres.

See Table 2.0-2 for the land use summary, which is consistent with the most recent tentative subdivision map for the Project.

TABLE 2.0-2: LAND USE SUMMARY

PROPOSED USE	GROSS ACRES	NET ACRES	DWELLING UNITS	NON-RESIDENTIAL (SQUARE FEET)	GROSS DENSITY (DU/AC)	NET ACREAGE AS % OF TOTAL
Single Family Residential – Non-Age Restricted						
Village 1 (60x105)	19.58	14.10	86	-	4.4	2.7%
Villages 2, 3 (50x105)	22.48	15.94	114	-	5.1	3.0%
Village 4 (45x105)	19.05	14.73	116	-	6.1	2.8%
Villages 5, 6, 7 (45x85)	16.57	11.51	113	-	6.8	2.1%
Village 8 (36x78.5)	14.02	8.53	130	-	9.3	1.6%
Villages 9, 10, 11 (35x78)	23.37	13.70	173	-	7.4	2.6%
Subtotal	*115.07*	*78.51*	*732*	-	*6.4*	*14.8%*
Single Family Residential – Age Restricted						

PROPOSED USE	*GROSS ACRES*	*NET ACRES*	*DWELLING UNITS*	*NON-RESIDENTIAL (SQUARE FEET)*	*GROSS DENSITY (DU/AC)*	*NET ACREAGE AS % OF TOTAL*
Village 12 (60x105)	31.93	19.11	117	-	3.7	3.6%
Village 13 (60 x 105)	11.66	6.52	39	-	3.3	1.2%
Villages 14, 15, 17 (50x105)	37.04	27.20	210	-	5.7	5.1%
Village 16, 18, 19 (43x105)	20.18	15.48	144	-	8.0	2.9%
Village 20,22 (56x70)	21.83	14.93	145	-	6.6	2.8%
Village 21 (varies)	7.76	6.25	50	-	6.4	1.2%
Subtotal	*130.40*	*89.49*	*705*	-	*5.4*	*16.8%*
Multifamily Residential						
Village 23	7.14	7.14	215	-	30.1	1.3%
Lot X (Multifamily)	1.26	1.26	38	-	30.0	0.2%
Subtotal	*8.40*	*8.40*	*253*	-	*30.1*	*1.6%*
Commercial						
Villages 24, 25	5.61	5.33	-	32,000	-	1.0%
Subtotal	*5.61*	*5.33*	-	*32,000*	-	*1.0%*
Parks and Community Facilities						
Park and Recreation Center (Lot A)	5.69	4.629	-	21,000	-	0.9%
Private Park (Lots B-C)	3.30	2.98	-	-	-	0.6%
Public Park (Lot D)	10.96	10.78	-	-	-	2.0%
Neighborhood Park (Lot T)	2.19	2.19	-	-	-	0.4%
Passive Park (Lot U)	1.21	1.21	-	-	-	2.3%
Subtotal	*23.35*	*21.78*	-	21,000	-	*4.1%*
Open Space						
Protected Areas (Lots E-F)	199.48	199.48	-	-	-	37.6%
Protected Area / Drainage Basin (Lots G-I)	10.76	10.45	-	-	-	2.0%
Protected Area / Landscape (Lots J-O)	0	14.32				2.7%
Water Quality / Detention (Lots P)	6.11	5.98	-	-	-	1.1%
Open Space (Lots Q-S)	13.53	12.97	-	-	-	2.4%
Public Landscape Lot (Lots V-NN)	-	5.69	-	-	-	1.1%
Private Landscape Lot (Lots OO-DDD)	-	5.56	-	-	-	1.0%
Subtotal	*229.88*	*254.45*	-	-	-	*48.0%*
Roads						
Private Drive (Lots 1-22)	-	1.10	-	-	-	0.2%
Private Right-of-Way (Lots 23-24)	-	32.30	-	-	-	6.1%
Minor Right-of-Way	-	21.30	-	-	-	4.0%
Major Right-of-Way	17.41	17.41	-	-	-	3.3%
Subtotal	*17.41*	*72.11*	-	-	-	*13.6%*
TOTAL	**530.1**	**530.1**	**1,690 (1,437 SF, 253 MF)**	**53,000**	**6.65**	**100.0%**

NOTE: THE GROSS ACREAGES SHOWN HERE EXCLUDE RANCHO CORDOVA PARKWAY AND CHRYSANTHY BOULEVARD ONLY. VILLAGE NET ACREAGE EXCLUDES THE PROTECTED AREA/LANDSCAPE LOTS, PRIVATE AND PUBLIC LANDSCAPE LOTS, PRIVATE DRIVES, AND PRIVATE AND PUBLIC RIGHT-OF-WAYS.

Additionally, as a result of the changes to the tentative subdivision map, the resulting population projections have also changed. Table 2.0-3 summarizes the population projections (using both the American Community Survey [ACS] household sizes and the City's Quimby parkland household sizes used by the City in accordance with Rancho Cordova Municipal Code (RCMC) Chapter 22.40, including factors determined to be appropriate for age-restricted housing:

TABLE 2.0-3: POPULATION PROJECTIONS

	UNITS	*HOUSEHOLD SIZE*	*POPULATION*
ACS Population Projections			
Single Family – Non-Age Restricted	732	2.84	2,078
Multi-Family – Non-Age Restricted	215	2.89	621
Single Family – Age Restricted	705	2.08	1,466
Multi-Family – Age Restricted	38	2.05	77
TOTAL	**1,690**	**--**	**4,242**
Quimby Population Projections			
Single Family – Non-Age Restricted	732	2.95	2,159
Multi-Family – Non-Age Restricted	215	1.54	331
Single Family – Age Restricted	705	2	1,410
Multi-Family – Age Restricted	38	1.04	40
TOTAL	**1,690**	**--**	**3,940**

As shown in the table, the revised Project would result in up to 4,242 persons (or 3,940 persons using the City's Quimby parkland household sizes) compared to 4,319 residents assumed in the Draft EIR. Because the number of proposed units and associated population growth has decreased since the Draft EIR was released, the impacts associated with housing and population would also decrease. For example, the amount of water demand, wastewater generation, automobile trips, and electricity use would decrease compared to what is disclosed within the Draft EIR. The change to the tentative subdivision map would not change the overall development footprint of the Project. The residential villages, commercial lots, and park lots would remain within the development footprint analyzed in the Draft EIR. No changes to the aesthetics, biological resources, cultural and tribal resources, geology and soils, greenhouse hazards and hazardous materials, hydrology and water quality, land use, noise, population and housing, public services and recreation, transportation, and utilities analyses are warranted as potential impacts would slightly decrease, in general, in association with the changes and there would be no appreciable increase in impacts associated with the changes.

As a result of the changes to the Project and public comments, modifications have been made to the Draft EIR, particularly those associated with Draft EIR Section 3.2 (Air Quality), Section 3.6 (Greenhouse Gases, Climate Change, and Energy), and Section 3.13 (Transportation and Circulation) as shown in Chapter 3.0 of this Final EIR

As a result of a comment on the Draft EIR, as well as the changes to the tentative subdivision map, the Quimby parkland requirement has also been recalculated, as shown in Table 2.0-4:

TABLE 2.0-4: QUIMBY PARKLAND REQUIREMENT

	UNITS	*HOUSEHOLD SIZE*	*POPULATION*	*REQUIRED PARKLAND (ACRES)*
Quimby Population Projections				
Single Family – Non-Age Restricted	732	2.95	2,159	10.80
Multi-Family – Non-Age Restricted	215	1.54	331	1.66
Single Family – Age Restricted	705	2	1,410	7.05
Multi-Family – Age Restricted	38	1.04	40	0.20

TOTAL	**1,690**	**--**	**3,940**	**19.7**

Further, as a result of the changes to the tentative subdivision map, the construction schedule for the Project slightly changed. The Project Applicant Team has indicated that the Project will be constructed in a series of four phases, with construction anticipated to commence in January 2020 and conclude in December 2035:

Phase1 (January 2020 – August 2023)

- Site preparation for Phases 0, 1, and 2 components: January 1, 2020 – March 30, 2020
- Grading for Phases 0, 1, and 2 and improvements for Chrysanthy Boulevard and Phase 1: April 1, 2020 – November 1, 2020.
- Paving backbone infrastructure Phase 0 and Phase 1: November 1, 2020 – January 30, 2020
- Building construction: February 1, 2021 – May 1, 2023
- Architectural coating: May 1, 2021 – August 1, 2023
- This phase includes the following:
    - Phase 1 Clubhouse and associated landscaping (Lot A) – 7,000 s.f. of the clubhouse complex and approximately 1/3 of lot improvements
    - Community garden (Lot C)
    - 270 single family residential units
    - 211 single family residential units – age restricted

Phase 2 (April 2022 – November 2026):

- Improvements for Phase 2: April 2022 – September 2022
- Paving: October 2022 – December 2022
- Building Construction: April 2023 – July 2026
- Architectural Coating: August 2023 – November 2026
- This phase includes the following:
    - 197 single family residential units
    - 199 single family residential units – age restricted
    - Phase 2 Clubhouse and associated landscaping (Lot A) – 7,000 s.f. of the clubhouse complex and approximately 1/3 of lot improvements
    - Neighborhood Park (Lot T) – 2.19 acres

Phase 3 (March 2025 – December 2030):

- Site Preparation for Phase 3: February 2025 – April 2025
- Grading: April 2025 – October 1, 2025
- Paving: October 1, 2025 – December 31, 2025
- Building Construction: January 2026 – September 2030
- Architectural Coating: April 2026 – December 2030
- Site Preparation for Rancho Cordova widening: January 2027-October 2027
- Paving for Rancho Cordova widening: October 2027-January 2028
- This phase includes the following:

- 265 single family residential units
- 295 single family residential units – age restricted
- 16 senior multifamily residential units
- Phase 3 Clubhouse and associated landscaping (Lot A) – 7,000 s.f. of the clubhouse complex and approximately 1/3 of lot improvements
- Park (Lot D) - 10.78 acres
- Open Space (Lots Q-S) – 12.97 acres
- Passive Park (Lot B) – 1.58 acres
- Passive Park (Lot U) – 1.21 acres

Phase 4 (March 2030 – December 2035):

- 4A Multifamily - Site preparation for multifamily residential (7.14 acres): March 2030 – April 2030
- 4A Multifamily - Grading and improvements: April 2030 – August 2030
- 4A Multifamily - Paving: August 2030 –October 2030
- 4A Multifamily - Building Construction: April 2031 – January 2033
- 4A Multifamily - Architectural Coating: January 2033 – May 2033
- 4B Commercial - Site preparation for commercial (5.33 acres): March 2034 – April 2034
- 4B Commercial - Grading and improvements: April 2034 – July 2034
- 4B Commercial - Paving: August 2034 –September 2034
- Commercial - Building Construction: April 2034 – August 2035
- Commercial - Architectural Coating: September 2035 – December 2035
- This phase includes the following:
  - 215 multifamily residential units
  - 22 senior multifamily residential units
  - Commercial center

Lastly, as a result of the changes to the tentative subdivision map, the requested General Plan amendment acreages have also been slightly revised. Table 2.0-5 summarizes the proposed General Plan land use designations, as shown on Revised Figure 2.0-6 (revised figures are included in Chapter 3):

TABLE 2.0-5: GENERAL PLAN LAND USE DESIGNATIONS

LAND USE DESIGNATION	*EXISTING*	*PROPOSED*
Planning Area	530.1	--
Low Density Residential (LDR)	--	31.93
Medium Density Residential (MDR)	--	228.96
High Density Residential (HDR)	--	8.40
Commercial (C)	--	5.61
Parks and Open Space (P/OS)	--	38.33
Natural Resources (NR)	--	199.48
Right-of-Way	--	17.41

2.4 COMMENTS AND RESPONSES

REQUIREMENTS FOR RESPONDING TO COMMENTS ON A DRAFT EIR

CEQA Guidelines Section 15088 requires that lead agencies evaluate and respond to all comments on the Draft EIR that regard an environmental issue. The written response must address the significant environmental issue raised and provide a detailed response, especially when specific comments or suggestions (e.g., additional mitigation measures) are not accepted. In addition, the written response must be a good faith and reasoned analysis. However, lead agencies need only to respond to significant environmental issues associated with the project and do not need to provide all the information requested by the commenter, as long as a good faith effort at full disclosure is made in the EIR (CEQA Guidelines Section 15204).

CEQA Guidelines Section 15204 recommends that commenters provide detailed comments that focus on the sufficiency of the Draft EIR in identifying and analyzing the possible environmental impacts of the project and ways to avoid or mitigate the significant effects of the project, and that commenters provide evidence supporting their comments. Pursuant to CEQA Guidelines Section 15064, an effect shall not be considered significant in the absence of substantial evidence.

CEQA Guidelines Section 15088 also recommends that revisions to the Draft EIR be noted as a revision in the Draft EIR or as a separate section of the Final EIR. Chapter 3.0 of this Final EIR identifies all revisions to The Ranch Project Draft EIR.

RESPONSES TO COMMENT LETTERS

Written comments on the Draft EIR are reproduced on the following pages, along with responses to those comments. To assist in referencing comments and responses, the following coding system is used:

- Each letter is lettered or numbered (i.e., Letter A) and each comment within each letter is numbered (i.e., comment A-1, comment A-2).

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY Gavin Newsom, Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 3
703 B STREET
MARYSVILLE, CA 95901
PHONE (530) 741-7616
FAX (530) 741-4245
TTY 711
www.dot.ca.gov/dist3

Making Conservation a California Way of Life.

September 23, 2019

03-SAC-2018-00504
SCH# 2018072011

Ms. June Cowles
Senior Planner
City of Rancho Cordova
Planning Department
2729 Prospect Park Drive
Rancho Cordova, CA 95670

Dear Ms. Cowles:

The Ranch – Draft Environmental Impact Report

Thank you for including the California Department of Transportation (Caltrans) in the application review of the project referenced above. Caltrans' new mission, vision, and goals signal a modernization of our approach to the California's transportation system. We review this local development for impacts to the State Highway System (SHS) in keeping with our mission, vision and goals for sustainability/livability/economy, and safety/health. We provide these comments consistent with the state's mobility goals that support a vibrant economy and build communities.

The Ranch project (Project) is located approximately 4.62 miles southeast of Sunrise Boulevard and U.S. Highway 50 (US 50) interchange, approximately 2.74 miles northwest of the Sunrise Boulevard and State Route 16 intersection, also known as Jackson Highway, and approximately 2 miles west of Grant Line Road, part of the Planned Capitol Southeast Connector.

A-1

The Project includes a general plan amendment special planning area, rezone, development agreement, and a tentative subdivision map for residential and commercial land use developments.

The Project, approximately 530 acres, proposes to create 1,725 residential units, including 737 age restricted single family units, 735 non-age restricted single family units and 253 multi-family units. Of the 253 multi-family units, 38 will be age-restricted. There will be a clubhouse for the age-restricted community, a neighborhood shopping area of 32,000 square feet and recreational opportunities. There will be a dedication of 8.43 acres for multi-family residential units in accordance with the City of Rancho Cordova's Affordable Housing Plan.

The following comments are based on the information provided in the Draft Environmental Impact Report (DEIR) for the Project. Our comments are consistent with the Caltrans comment letter submitted on September 18, 2019, regarding the Application for Rezone for the Project.

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

Ms. Cowles
September 23, 2019
City of Rancho Cordova
Page 2

Traffic Forecasting/Operations

- Based on Figure 3.13-3: Existing (2017) Peak Hour Traffic Volumes (page 3.13-41) and Figure 3.13-6: Existing (2017) Plus Proposed Peak Hour Traffic Volumes (page 3.13-47) in the DEIR, there will be significant impact on the State Route 16 and Sunrise Boulevard intersection. However, the State Route 16 and Sunrise Boulevard Intersection is not listed as significantly impacted; therefore, no mitigations are being proposed. Please evaluate this intersection and provide mitigation(s) as the intersection already operates at or near capacity. A-2
- In reviewing the Application for Rezone and DEIR applications for the Project, we noticed the Existing (2017) Plus Project Roadway Segment Level of Service (LOS) threshold are different between the two applications, specifically, Table 3.13-8 in the DEIR (page 17) and Table 7 in the Application for Rezone (page 3.13-21). As the information presented in both tables are consistent, please verify which LOS threshold is correct. If the Level of Service exceeds the Level of Service threshold, please evaluate this segment and provide mitigation(s) to improve Level of Service. A-3
- The Project will generate approximately 12,646 daily trips, 864 in the AM peak hour and 1,157 trips in the PM peak hour. Since there will be significant number of trips generated, the closest routes, US 50 and State Route 16 will be affected. A-4
    - Please provide a Queue Length Analysis for State Route 16 and Sunrise Boulevard intersection and State Route 16 and Grant Line Road intersection.
    - Please provide a Queue Length Analysis for all off-ramps from US 50 to Sunrise Boulevard, US 50 to Zinfandel Drive, and US 50 to Mather Field Road.
    - Please provide a Merge and diverge analysis for US 50 and Sunrise Boulevard, US 50 and Zinfandel Drive, and US 50 and Mather Field Road.
- This Project is a large project. We recommend instead of using the existing (2017) plus proposed project conditions, the DEIR should reflect existing traffic conditions on project opening day plus proposed project conditions. A-5
- Please provide the Project completion year (full build out) in the DEIR. If the Project is going to be built in phases, please provide the build out year for each phase. A-6
- Please provide detailed maps showing pedestrian facilities (page 3.13-11), bicycle facilities (page 3.13-12), transit facilities (page 3.13-13) and the tunnel crossing for Class I trail on Chrysanthy Boulevard (page 3.13-15). A-7
- Please provide more information and maps about the Signature Service transit service and the Signature Transit Station (page 3.13-33). A-8

Table 3.13-5: Proposed Project Trip Generation, in the DEIR (page 3.13-15) shows a Trip Generation Table in which estimated trips are lower compared to the Trip Generation Table below, using trip generation rates from the Trip Generation Manual, 9th edition. We have concerns that the daily trips are lower by 1,040 trips and the PM trips are less by 55 trips. Please check the trip generation numbers stated in the DEIR with the table we generated below. If you accept this discrepancy, please update the DEIR to reflect the new numbers. A-9

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

Description/ITE Code	Units	Expected Units	Total Generated Trips						
			Daily Trips	AM Peak Hour			PM Peak Hour		
				Total	AM In	AM Out	Total	PM In	PM Out
Single Family Homes - 210	DU	723	6,883	542	136	407	723	455	268
Apartment - 220	DU	250	1,663	128	26	102	155	101	54
Senior Adult Housing-Detached – 251	DU	743	2,734	163	57	106	201	122	78
Shopping Center - 820	KSF^2	32	1,366	31	13	8	119	38	41
subtract pass-by							40		
		Total	12,646	864	231	623	1,157	716	441

A-9 cont'd

Please provide our office with copies of any further actions regarding this Project. We would appreciate the opportunity to review and comment on any changes regarding this development.

If you have any questions regarding these comments or require additional information, please contact Stuart Mori, Intergovernmental Review Coordinator for the City of Rancho Cordova, by phone (530) 634-7606 or via email to stuart.mori@dot.ca.gov.

A-10

Sincerely,

Alex Fong, Branch Chief
Office of Transportation Planning
Regional Planning Branch -- South

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

Response to Letter A: California Department of Transportation, District 3

Response A-1: This comment summarizes the Project location, Project entitlements, and Project description. This comment serves as an introduction to the comment letter. The commenter is referred to Section 2.3, Modifications to the Project, in this chapter regarding changes to the Project. No further response is necessary.

Response A-2: The commenter indicates that based on Figure 3.13-3 and Figure 3.13-6 in the Draft EIR, there will be a significant impact on the State Route 16 and Sunrise Boulevard intersection and further notes that the State Route 16 and Sunrise Boulevard intersection is not listed as significantly impacted; therefore, no mitigations are being proposed. It is noted that Figure 3.13-6 had some minor errors and has been revised as shown in Chapter 3.0, Revisions, of this Final EIR. The intersection referenced by the commenter is referred to as intersection #4 throughout the Draft EIR Section 3.13 (Transportation and Circulation). Intersection #4 is located in unincorporated Sacramento County. As stated in the DEIR on page 3.13-14, the threshold of significance for intersections within the unincorporated area of Sacramento County is LOS E. As shown in Table 3.13-6 on page 3.13-17, of the Draft EIR the Sunrise Boulevard intersection with State Route 16 (Intersection #4) operates at LOS E or better for AM and PM peak-hours for Existing plus Project Conditions. Therefore, the project was not determined to significantly impact the intersection and no change to the analysis or conclusions in the Draft EIR is necessary.

Response A-3: The commenter notes that after reviewing the Application for Rezone and the Draft EIR for the Project, they noticed the Existing (2017) Plus Project Roadway Segment Level of Service (LOS) thresholds are different between the two documents, specifically, Table 3.13-8 in the DEIR (page 17) and Table 7 in the Application for Rezone (page 3.13-21). The referenced tables were reviewed and several minor errors were identified in Table 3.13-8 (the LOS for the Existing Plus Project condition was incorrect for Segments 11 through 17 and the LOS threshold was incorrect for Segments 3, 4, 12, and 13). Draft EIR Table 3.13-8 is updated as shown in Chapter 3.0, Revisions, to correctly reflect the Existing plus Project LOS and the appropriate LOS Threshold for each roadway segment.

Response A-4: The commenter identifies the number of trips they anticipated to be generated based on the calculations described in Response A-9 below. The commenter indicates that State Route 16 and US Highway 50 will be affected and request the following analysis: a Queue Length Analysis for the State Route 16 and Sunrise Boulevard and the State Route 16 and Grant Line Road intersections, a Queue Length Analysis for all off-ramps from US 50 to Sunrise Boulevard, US 50 to Zinfandel Drive, and US 50 to Mather Field Road, and a merge and diverge analysis for US 50 and Sunrise Boulevard, US 50 and Zinfandel Drive, and US 50 and Mather Field Road.

Each of the interchange intersections referenced by the commenter was analyzed in the Draft EIR (see Tables 3.13-6 and 3.13-9) and the Project was determined to not exceed the LOS thresholds at any of the referenced intersections. The City's Public Works Department and transportation engineering staff has reviewed these conclusions and determined that additional analysis of these locations as requested by the commenter is not necessary in relation to the Project. Therefore, no revisions to the Draft EIR are warranted.

It is noted that, apart from the Project, the City will work with Caltrans when improving intersections as part of the City's Capital Improvement Plan, including improvements funded through the Community Facility Fee Impact Fee Program and the Traffic Mitigation Impact Fee

Program. The City will include the requested analyses as part of any design of improvements for the referenced intersections as part of future CIP projects.

Response A-5: The commenter recommended that instead of using the Existing (2017) plus Proposed Project conditions, the Draft EIR should reflect existing traffic conditions on project opening day Project conditions. We understand Caltrans' desire to study conditions of opening day of the project but have not included that scenario as a part of this analysis. The Draft EIR reflects the effect of the Project on the existing environment related to traffic. However, it is noted that the expected completion date of the proposed project is December 2035 and that the analysis does include a cumulative Year 2040 scenario, which reflects cumulative and cumulative plus Project conditions only five years removed from this assumed Project completion date. No revision to the Draft EIR is necessary in response to this comment.

Response A-6: The commenter requests the Project completion year (full build-out) and the build-out year for individual phases. The Project is anticipated to be built-out in 2035. Project phasing is described above in Section 2.3, Modifications to the Project, and in Chapter 3.0, Revisions, of this Final EIR which shows modifications to Draft EIR Chapter 2.0, including Project phasing.

Response A-7: The commenter requests detailed maps showing the pedestrian, bicycle, and transit facilities, including the tunnel crossing for the Class I trail on Chrysanthy Boulevard. The commenter is referred to Draft EIR Figure 2.0-4, as revised in Chapter 3.0, Revisions, of this Final EIR. The tentative subdivision map provided in Figure 2.0-4 identifies the road standards that will be used for the project, including the associated bicycle and pedestrian facilities, depicts the tunnel crossing at Chrysanthy Boulevard, and identifies pedestrian push-button locations for crossing facilities on Chrysanthy Boulevard, Rancho Cordova Parkway, and North Campus Road. The transit stop is addressed under Response A-8.

Additional information regarding the City's planned facilities can be viewed on the City's website (https://www.cityofranchocordova.org/government/public-works/plans-and-projects) in the City of Rancho Cordova's Pedestrian Master Plan (Figure 4.1 identifies regional and local transit stations, routes, and stops within the City, as well as pedestrian overcrossings and parkway access points and Figure 5.1 shows planned pedestrian improvements throughout the City) and in the City of Rancho Cordova's Bicycle Master Plan (Figure 2-1 shows the Existing Bicycle Network with the City, Figure 2-2 shows bicycle parking and support facilities, and Figure 4-3 shows the City's long-range vision of the regional trail system, and Figure 4-4 shows the City's existing bicycle system and proposed improvements).

Response A-8: The commenter requests more information and maps about the Signature Service transit station. The future transit station, located at Rancho Cordova Parkway and Chrysanthy Boulevard intersection, will provide public transit opportunities. The City's Mobility Master Plan (June 2019) addresses the City's need for safe, coordinated, responsive, efficient and flexible public transportation and shared mobility services and acknowledges that transportation preferences are changing. The Mobility Master Plan identifies the need for enhanced bus stops, expanding transit frequency, improving CordoVan service, and providing mobility hubs that provide access to a variety of transportation modes in a single location. The Mobility Master Plan identifies Rancho Cordova Parkway as one of eight priority corridors that should be designed to support multi-modal transportation choices. The future transit station provided by the Project could provide for extension of a bus route, which would accommodate an expansion of traditional transportation, such as a bus route or CordoVan route, or accommodate new mobility services, such as dynamic

transit or future technologies as envisioned by the City's Mobility Master Plan. e. The transit stop is described in the SPA Handbook, which can be viewed online at: https://www.cityofranchocordova.org/government/planning or at the City of Rancho Cordova Planning Department, located at City Hall, 2729 Prospect Park Drive in Rancho Cordova. While the transit stop is not shown on a figure, the intersection of Rancho Cordova Parkway and Chrysanthy Boulevard is located adjacent to Lot NN (north of the intersection) and Village 24 (south of the intersection), as shown on Revised Draft EIR Figure 2.0-4 in Chapter 3, and it is anticipated that the transit stop would be located on or in the immediate vicinity of these lots.

Response A-9: The commenter indicates concern that the daily trips projected for the Project as shown on Draft EIR p. 3.13-15 are lower than the trip rates associated with the Project based on the Trip Generation Manual, 9th Edition. The commenter has calculated trips based on the Trip Generation Manual, 9th Edition and has provided a table identifying trips by ITE code. The commenters calculations total 12,646 daily trips, 864 total AM peak hour trips, and 1,157 total PM peak hour trips. The commenter indicates that the daily trips shown in the Draft EIR are lower by 1,040 trips and the PM trips are lower by 55 trips than the trips calculated by the commenter.

The trip generation rates used to develop the traffic volumes for the Project reflected Section 3.13, Transportation and Circulation, of the Draft EIR are based on the average rates provided in the Trip Generation Handbook, 9th Edition published by the Institute of Transportation Engineers (ITE). The ITE rates were used to determine the number of trips for daily and the AM and PM peak-hours. The initial trip calculation totals are shown below in Table 2.0-6. It is noted that this initial calculation is similar to the daily trips identified by the commenter.

TABLE 2.0-6: PROJECT TRIP GENERATION – INITIAL RATES

Land Use Description	Units	Original Rates Used			Trips Before Reductions		
		Daily Rate	AM Rate	PM Rate	Daily Trips	AM Trips	PM Trips
Single-Family Detached Housing	735	9.52	0.75	1.00	6,997	551	735
Apartment	215	6.65	0.51	0.62	1,430	110	133
Senior Adult Housing-Detached	737	3.68	0.22	0.27	2,712	162	199
Active Adult Apartment	38	3.44	0.20	0.26	112	8	10
Shopping Center	32	42.70	0.96	3.71	1,366	31	119
Total	*1,757*	-	-	-	*12,618*	*862*	*1,196*

Once the initial trips were calculated as shown in Table 2.0-6, reductions were taken for internal capture and pass-by trips as shown in Table 2.0-7.

TABLE 2.0-7: PROJECT TRIP GENERATION – NET RATES (INITIAL RATES WITH REDUCTIONS FOR PASS-BY AND INTERNAL TRIPS)

Land Use Description	Units	Trips Before Reductions			Reduction Percentages			Final Trips Used in Report		
		Daily Trips	AM Trips	PM Trips	Daily	AM	PM	Daily Trips	AM Trips	PM Trips
Single-Family Detached Housing	735	6,997	551	735	97%	99%	97%	6,796	547	716
Apartment	215	1,430	110	133	86%	95%	86%	1,225	105	114
Senior Adult Housing-Detached	737	2,712	162	199	93%	98%	91%	2,519	158	181
Active Adult Apartment	38	112	8	10	100%	100%	100%	112	8	10
Shopping Center	32	1,366	31	119	70%	74%	68%	954	23	81
Total	*1,757*	*12,618*	*862*	*1,196*	-	-	-	*11,606*	*841*	*1,102*

The net trips identified in Table 2.0-7, and reflected in the Draft EIR, better represent the interactions between the residential and retail land uses expected within the Project as well as trips already on the network. The reductions taken for internal capture represent internal trips

between Project land uses and reductions taken for pass-by trips represent trips already on the network making a pass-by stop. The reduction percentages and resultant trips are shown in Table 2.0-7. The reductions used are consistent with ITE methodology; pass-by percentages are consistent with those listed in the Trip Generation Handbook, 3rd Edition published by ITE and the internal capture reductions are consistent with the methodologies shown in Chapter 7 of the Trip Generation Handbook, 2nd Edition published by ITE. The trip rates used in the Draft EIR correctly reflect the anticipated trips associated with the Project. No revisions to the Draft EIR are necessary.

Response A-10: This comment is noted. This comment serves as a conclusion to the comment letter. Any future actions regarding this Project will be forwarded to Caltrans. No further response is necessary.

Cordova Recreation & Park District

September 30, 2019

June Cowles, Senior Planner
City of Rancho Cordova Planning Department
2729 Prospect Park Dr.
Rancho Cordova, CA 95670

Regarding: The Ranch – Draft Environmental Impact Report
Public Review Period August 16 – September 30, 2019

Reviewed by: Cordova Recreation and Park District
Laura Taylor, CRPD Park Planning and Development Manager
Lisbet Gullone, CRPD Contract Planner

ENVIRONMENTAL REVIEW

As a part of the entitlement process for The Ranch, the City of Rancho Cordova circulated a Notice of Availability regarding the Draft Environmental Impact Report (DEIR) for The Ranch on August 22, 2019. The Cordova Recreation and Park District (CRPD or 'the District'), has previously submitted preliminary comments on August 3, 2018, in response to the Notice of Preparation (NOP).

BACKGROUND

The Ranch project has been subject to many modifications and some issues regarding the development of Quimby parkland have not yet been resolved. CRPD has recently reviewed the 4th submittal package, including the following plans and documents: B-1

- Large Lot Tentative Subdivision Map (revised March 2019)
- Small Lot Tentative Subdivision Map (revised July 2019)
- Special Planning Area Handbook (dated August 2019)

The project description in the DEIR does not match the above listed documents. CRPD recommends that the Final Environmental Impact Report (FEIR) should include some of the recent project changes.

CHAPTER 2 - PROJECT DESCRIPTION

Land Use

The latest Tentative Subdivision Map (revised July 2019) is proposing minor adjustments of the unit counts in both the standard villages and the age-restricted villages that have not been reflected in the DEIR. These changes will have little impact on the environmental review. However, the DEIR also provides conflicting information regarding park land. B-2

The 2.19 acre Neighborhood Park in the Parkview Neighborhood has been identified as a passive park in Table 2.0-1 (Land Use Summary) and in the text on page 2.0-8 (under 'RECREATION'). In addition, the description under 'OPEN SPACE' and 'RECREATION' (on page 2.0-7) does not provide the same park information as the recently revised Tentative Subdivision Map (dated July, 2019). The following table illustrates the latest park proposal:

NEIGHBORHOOD	TYPE OF PARK	AREA (Acres)
Parkview (Public Development)	Community Park (Lot D)	10.78
	Neighborhood Park (Lot T)	2.19
	Parking Lot Credit (Lot R)	0.25
Four Seasons (Private Development)	Recreational Center (Lot A)	4.26
	Community Garden (Lot B)	1.58
	Linear Park (Lot C)	1.40
TOTAL		**20.46**

B-3

CRPD recommends that the Final Environmental Impact Report (FEIR) should include an updated Land Use Summary (Table 2.0-1 in the DEIR) and an expanded description of park land (page 2.0-7 in the DEIR).

Project Construction

CRPD and the applicant have not reached an agreement regarding the timeline for construction of the public parks. An updated Phasing Schedule (page 2.0-12 in the DEIR) may therefore need to be included with the Final EIR (FEIR).

B-4

General Plan Amendment

CRPD has not previously reviewed the proposed General Plan Amendment (Figure 2.0-5). In the graphic titled 'Proposed General Plan', the area of the Neighborhood Park has the General Plan Designation 'Low Density Residential' (LDR) and the area of the Community Park has the General Plan Designations; 'Low Density Residential' (LDR) and 'Medium Density Residential' (MDR)..

Before CRPD can take ownership of the two park sites, both properties will need to have the General Plan Designation 'Park and Open Space' (P/OS). CRPD also recommends that the private parks (including the Recreational Center, the Community Garden and the Linear Park) should have the General Plan Designation P/OS.

Figure 2.0-5 (Existing and Proposed General Plan) will need to be revised to reflect these changes. CRPD recommends that an updated General Plan Map should be included with the FEIR.

B-5

CHAPTER 3.1 – AESTHETICS

The DEIR has determined that lighting of sports fields and parking lots (as regulated by Rancho Cordova's Zoning Code and CRPD's Design and Construction Standards), will be a less than significant impact. No further analysis will be required.

Note: This issue was originally raised in CRPD's response to the NOP on August 3, 2018.

B-6

CHAPTER 3.2 – AIR QUALITY

CRPD has noted that the park areas listed on page 3.2-26 need to be updated to reflect the recent project modifications and the Community Park will need to be included with the Construction Phasing Schedule on page 3.2-28.

B-7

CHAPTER 3.3 – BIOLOGICAL RESOURCES

2

Figure 3.3-3 (California Natural Diversity Database) does not provide detailed information regarding the location of protected, endangered or threatened plants and animals. As a result, CRPD has not been able to determine if the future park sites are subject to special mitigation requirements or if biological resources at the park sites will affect the timeline for park construction. CRPD recommends that the FEIR should include maps of existing biological resources at the project site. As an alternative, Mitigation Measure 3.3-3 through 3.3-11 could include a requirement that additional biological resource studies should be completed prior to any site disturbance. B-8

CHAPTER 3.5 – GEOLOGY AND SOILS
As shown on Figure 3.5-1 (Project Site Soils) in the DEIR, the soil at the Quimby park sites is Redding Gravelly Loam. This soil type would generally not present problems for park development. CRPD will require additional soil testing before the park sites are delivered to the District (as specified in the Districts Design and Construction Standards Manual, Section 2.01). B-9

Note: This issue was originally raised in CRPD's response to the NOP on August 3, 2018.)

CHAPTER 3.6 – GREENHOUSE GASES, CLIMATE CHANGE AND ENERGY
CRPD has noted that the construction phases on Table 3.6-3 (Summary of Construction Greenhouse Gas Emissions) is not consistent with the Phasing Plan in the Special Planning Area Handbook (dated August 2019). B-10

CHAPTER 3.7 – HAZARDS AND HAZARDOUS MATERIALS
Since before 1993, the project site has been divided by two power line easements (a 200-foot-wide SMUD easement next to a 75-foot-wide PG&E easement). Both easements include transmission towers and 230 kV overhead lines. The DEIR has addressed development within the power line easements, but has not considered the potential for Electric and Magnetic Field (EMF) radiation.

Even if recent studies have been inconclusive regarding the effect of exposure to overhead power lines, earlier studies have shown that especially children may be negatively affected. As a result, EMF radiation is still part of the public debate. CRPD recommends that this concern is addressed. B-11

CRPD suggests that the FEIR could demonstrate that the issue has been considered by outlining some of the latest scientific studies. The final report could also refer to the earlier actions by the California Public Utilities Commission to mitigate public exposure.

Note: This issue was originally raised in CRPD's response to the NOP on August 3, 2018.

CHAPTER 3.8 – HYDROLOGY AND WATER QUALITY
The DEIR has determined that the project site is not located in the 100-year flood hazard area and that the Sacramento County Water Agency (SCWA) will be able to meet the future water demands of The Ranch development. No further analysis will be required. B-12

Note: This issue was originally raised in CRPD's response to the NOP on August 3, 2018.

CHAPTER 3.9 – LAND USE
The Tentative Parcel Map for The Ranch project has recently been modified (as shown on the Tentative Subdivision Map, revised July, 2019). CRPD therefore recommends that an updated version of Table 2.0-1 (Land Use Summary) on page 2.0-5 in the DEIR should be included with the FEIR. B-13

CHAPTER 3.10 – NOISE

3

The DEIR has determined that (if properly monitored and mitigated), playground noise will be a less than significant impact. No further analysis will be required. B-14

Note: This issue was originally raised in CRPD's response to the NOP on August 3, 2018.

CHAPTER 3.11 – POPULATION AND HOUSING

The DEIR has listed household sizes for different categories of residential land use (Persons Per Household) based on the California Department of Finance and the 2013-2017 American Community Survey. B-15

CRPD recommends that the numbers for Persons Per Household adopted by Rancho Cordova (and applied to the Ranch project) should also be described under 'Persons Per Dwelling Unit' (on page 3.11-2 in the DEIR).

CHAPTER 3.12 – PUBLIC SERVICES AND RECREATION

The Tentative Parcel Map for The Ranch project has recently been modified (see the Tentative Subdivision Map, revised July, 2019). The following table shows the latest unit counts and population projections for the project:

NEIGHBORHOOD	RESIDENTIAL LAND USE	UNITS	POPULATION
Parkview & Gateway	Single Family Residential	732	2,159
	Multi Family Residential	215	331
Four Seasons	Active Adult Single Family	726	1,452
	Active Adult Multi Family	38	39
TOTAL		**1,711**	**3,981**

B-16

Based on the population projections (as specified in Rancho Cordova's Municipal Code), The Ranch project is now required to provide an overall of 19.91 acres of Quimby Parkland (or 10.35 acres of community parks and 9.56 acres of neighborhood parks).

CRPD recommends that the FEIR should include an updated table for park land dedication (Table 3.12-4 in the DEIR) that has been coordinated with the latest Tentative Subdivision Map (revised July, 2019).

FINAL ENVIRONMENTAL IMPACT REPORT

CRPD recommends that the following information should be included with the Final Environmental Impact Report (FEIR):

1. A Land Use Summary (Table 2.0-1 in the DEIR) and description of park land (page 2.0-7 in the DEIR) that has been updated to reflect the latest Tentative Subdivision Map (revised July, 2019).
2. A Phasing Schedule (page 2.0-12 in the DEIR) that is consistent with the Phasing Plan in the latest Special Planning Area Handbook (dated August, 2019) and that also reflects any agreement between CRPD and the property owner. B-17
3. The graphic representation of the proposed General Plan Amendment (Figure 2.0-5) that designates all public and private park land as 'Park and Open Space' (P/OS).
4. Site specific maps of all existing Biological Resources on the project site (including plants and animals) that are subject to mitigation. (As an alternative, a requirement for future Biological

Resource Studies could be added to Mitigation Measures 3.3-3 through 3.3-11.)

5. A report to address public concerns regarding Electric and Magnetic Fields (EMF's) around high voltage power lines or evidence that such concerns are unwarranted.

6. Information regarding the numbers for 'Persons Per Household' that has been adopted by Rancho Cordova (and applied to the Ranch project (shown on page 3.11-2 in the DEIR).

7. A Table that shows 'Parkland Dedication Requirements' (Table 2-12-4 in the DEIR) based on the latest Tentative Subdivision Map (revised July, 2019).

B-17 cont'd

Please contact the District if you have any questions or comments regarding these review comments.

Respectfully,

Laura L. Taylor, ASLA
Park Planning and Development Manager
Cordova Recreation and Park District
Attachments: Review letter, dated August 3, 2018

Copy: Patrick Larkin, General Manager for Cordova Recreation and Park District
Elizabeth Sparkman, Community Development Director, Rancho Cordova
Lisbet Gullone, Contract Planner CRPD

5

Response to Letter B: Cordova Recreation & Park District

Response B-1: The commenter notes that the Cordova Recreation & Park District (CRPD) submitted preliminary Notice of Preparation (NOP) comments regarding the Project. The comment also provides background information regarding the modifications to the Project submittal packages (from March 2019 to August 2019), and notes that the Project description in the Draft EIR does not match the listed documents. The commenter further notes that the Quimby parkland has not yet been resolved, and concludes that the Final EIR should include some of the most recent Project changes. This comment is noted. Please see Section 2.3, Modifications to the Project, regarding changes to the Project and associated modifications to Draft EIR Chapter 2.0, Project Description, including changes to the proposed land uses, park land dedication requirements, and and park land dedication.

Response B-2: The commenter notes that the latest tentative subdivision map (revised July 2019) proposes minor adjustments to the unit county that have not been reflected in the Draft EIR. The commenter also notes that these changes will have little impact on the environmental review. This comment is noted. Please see Section 2.3, Modifications to the Project, regarding further modifications to the tentative subdivision map and the associated revised unit count and updated parkland calculations.

Response B-3: The commenter provides a table which illustrates the park proposal shown in the July 2019 tentative subdivision map. The commenter also recommends that the Final EIR include an updated land use summary (Table 2.0-1 of the Draft EIR) and an expanded description of parkland. Please see Section 2.3, Modifications to the Project, regarding the changes to the land use summary table as a result of the latest tentative subdivision map. The revised land use summary table is shown in Table 2.0-2 of this chapter and updated parkland calculations are provided in Table 2.0-4.

Response B-4: The commenter notes that the CRPD and applicant have not reached an agreement regarding the timeline for construction of the public parks. The commenter notes that an updated phasing schedule may therefore need to be included within the Final EIR. Please see Section 2.3, Modifications to the Project, regarding revisions to the Project phasing schedule.

Response B-5: The commenter notes that before CRPD can take ownership of the two park sites (Neighborhood Park and Community Park), both properties will need to have a General Plan designation of Park and Open Space (P/OS). The CRPD also recommends that the Recreation Center, Community Garden, and Linear Park have the P/OS designation. Further, the commenter notes that Figure 2.0-5 (Existing and Proposed General Plan) will need to be revised to reflect the requested changes. This comment is noted. Please see Section 2.3, Modifications to the Project, regarding the updated General Plan land use map; the proposed General Plan land use designations are P/OS on the proposed park sites (Lots A, B, C, D, T, and U) and select open space lots (Lots Q, R, and S).

Response B-6: The commenter notes that the Draft EIR concludes that lighting of sports fields and parking lots will be less than significant and that no further analysis will be required. The commenter has correctly cited the text of the Draft EIR. No further response is necessary.

Response B-7: The commenter notes that the park areas listed on page 3.2-26 of Chapter 3.2, Air Quality, will need to be updated to reflect the recent Project modifications and the Community Park will need to be included within the Construction Phasing Schedule on page 3.2-28. This comment is noted.

The air quality modeling has been reflected to update the changes to the Project description. Please see Chapter 3.0, Revisions, of this Final EIR for changes to Chapter 3.2 of the Draft EIR.

Response B-8: The commenter notes that Figure 3.3-3 does not provide detailed information regarding the location of protected, endangered, or threatened plants and animals. The commenter recommends that the Final EIR include maps of existing biological resources at the project site. As an alternative, the commenter suggests that Mitigation Measures 3.3-3 through 3.3-11 include a requirement that additional biological resource studies should be completed prior to any site disturbance.

According to the California Natural Diversity Database (CDFW, 2019), the following special-status species have been documented on or within one-mile of the Project site: American badger, Boggs lake hedge-hyssop, California linderiella, legenere, Sacramento Orcutt grass, slender Orcutt grass, valley elderberry longhorn beetle, vernal pool fairy shrimp, vernal pool tadpole shrimp, and western spadefoot. Figure 3.3-3 of the Draft EIR does not show the detailed species at the project site because the California Department of Fish and Wildlife (CDFW) advises against showing the exact data and locations in publicly available documents. The City will provide the CRPD with the California Natural Diversity Database search results that identifies the location of species, but due to the CDFW's guidance, the information requested will not be provided within this Final EIR. It is also noted that Figure 3.3-4 on page 3.3-85 of Chapter 3.3 shows the biological community and aquatic resources found on-site.

Due to the transient or seasonal nature of some of the species, it is possible that while their presence has not been documented on the Project site, the species may be present on the Project site in the future if the habitat on the Project site would provide appropriate conditions for the species. Tables 3.3-1 and 3.3-2 address the potential of special-status species to be present on the Project site. Potential environmental impacts associated with each special-status species that has potential to be present on the Project site are addressed under Impact 3.3-1 (invertebrates), 3.3-2 (reptile and amphibian), 3.3-3 (fish), 3.3-4 (birds), 3.3-5 (mammals), and 3.3-6 (plants) in Chapter 3.3 of the Draft EIR and, where appropriate, mitigation measures are provided to reduce potential impacts to special-status species. In Chapter 3.3, the Draft EIR addresses the potential for various special-status species and sensitive habitats to be found on-site, including the park areas. Where appropriate, the Draft EIR includes appropriate mitigation measures to reduce impacts to special-status species, including species and site-specific surveys, where appropriate. All mitigation measures should be implemented for the proposed park sites. It is noted that of the mitigation measures referenced by the commenter, Mitigation Measures 3.3-3 through 3.3-9 and 3.3-11 are applicable Avoidance and Mitigation Measures (AMMs) identified in the South Sacramento Habitat Conservation Plan (SSHCP) and Mitigation Measure 3.3-10 was provided to address the potential for American badger to occur on the Project site.

It is anticipated that CRPD will apply as a Participating Special Entity to the SSHCP. The City and the South Sacramento Conservation Agency will assist CRPD in understanding the application process and AMM requirements as park designs are developed. The City and Project application will share SSHCP application materials for the Project with the CRPD. No revision to the Draft EIR is necessary in response to this comment.

Response B-9: The commenter notes that the soils at the Quimby park site would generally not present problems for development. The commenter also notes that the CRPD would require additional soil testing before the park sites are delivered to the CRPD. Laboratory soil tests were completed as part of

the Geotechnical Engineering Report (Wallace-Kuhl, 2016). The commenter has correctly summarized the text of the Draft EIR. No further response is necessary.

Response B-10: The commenter notes that the construction phase on Table 3.6-3 of Chapter 3.6, Greenhouse Gases, Climate Change, and Energy, is not consistent with the Phasing Plan in the Special Planning Area Handbook. This comment is noted. The air quality and greenhouse gas modeling has been reflected to update the changes to the Project description. Please see Chapter 3.0, Revisions, of this Final EIR for changes to Chapter 3.2 of the Draft EIR.

Response B-11: The commenter provides information regarding the SMUD and PG&E easements which cross the project site. The commenter notes that the Draft EIR has addressed development within the power line easements, but has not considered the potential for electric and magnetic field (EMF) radiation. The commenter also suggests that the Final EIR demonstrate that EMF radiation has been considered by outlining some of the latest scientific studies, and earlier actions by the California Public Utilities Commission (CPUC) to mitigate public exposure.

On January 15, 1991, the CPUC began an investigation to consider the CPUC's potential role in mitigating health effects, if any, of EMFs created by electric utility power lines and by cellular radiotelephone facilities. By this investigation, all interested parties were notified that the CPUC would take appropriate action on EMFs in response to a conclusion, based on scientific evidence, if it indicates that a health hazard actually exists, and that a clear cause and effect relationship between utility property or operations and public health is established.

Due to the lack of scientific or medical conclusions about potential health effects from utility electric facilities and power lines, the CPUC issued Decision 93-11-013, establishing EMF policy for regulated utilities, which included consideration of no-cost and low-cost magnetic field reduction measures on new and upgraded projects. The interim EMF requirements apply to PG&E, Southern California Edison, San Diego Gas & Electric, Sierra Pacific Power, and Pacific Power & Light. Municipal utilities, like the SMUD and the Los Angeles Department of Water and Power, are not under CPUC jurisdiction, although they may voluntarily follow the same measures.

The CPUC Decision 06-01-042, issued on January 27, 2006, affirmed that the CPUC's November 1993 decision on low-cost/no-cost policy to mitigate EMF exposure for new utility transmission and substation project should be continued. However, this decision does not apply to existing facilities and does not establish any numeric standards or thresholds, rather the policy encourages low-cost and no cost EMF mitigation, using a recommended benchmark of 4% of total project cost. Methods for reducing magnetic fields described in the CPUC's 2006 EMF Design Guidelines include increasing the distance from electrical facilities, reducing conductor spacing, and phasing circuits to reduce magnetic fields. Further, the 2006 decision re-re-affirmed that health hazards from exposures to EMF have not been established and that state and federal public health regulatory agencies have determined that setting numeric exposure limits is not appropriate.

The CPUC has not identified a significant scientifically verifiable relationship between EMF exposure and negative health consequences. However, the January 2006 decision directs the Commission's Energy Division to pursue and review all available studies regarding EMF, and to review scientific information and report on new findings. Should such studies indicate negative EMF health impacts, the Commission will reconsider its EMF policies, and open a new rulemaking if necessary.

In 2016, the CPUC conducted an EMF investigation to independently measure EMF levels along the San Diego Gas & Electric Company (SDG&E) Sunrise Powerlink underground 230-kilovolt (kV) transmission line located under Alpine Boulevard within the community of Alpine in unincorporated San Diego County. The Sunrise Powerlink 230-kV circuits in Alpine Boulevard pass in the vicinity of Alpine Elementary School and EMF levels at the elementary school have been a specific area of concern to the community. The results of this investigation are summarized in the CPUC's Electromagnetic Field Investigation: Alpine Boulevard – Sunrise Powerlink report (Alpine Report) dated dated June 6, 2016). The Alpine Report found that numerous laboratory, clinical, and epidemiological studies have been conducted over several decades to evaluate the public health impacts of EMF exposure and that laboratory studies on EMF exposures do not support a conclusion of health impacts from EMF exposure, and clinical studies have found that EMF exposure does not appear to affect general physiology. The Alpine Report further found that while epidemiological research indicates there is a weak association between childhood leukemia and certain levels of magnetic field exposure, there is no consensus among scientists about the level of magnetic field exposure that could constitute a health risk. There are no adopted federal, state of California, or local regulatory standards that provide any guidance regarding public exposures to EMF or guidelines for setbacks from transmission lines that apply to the Project. The CPUC has undertaken extensive studies of this issue since the 1990s and is the preeminent source on this subject in California and has determined that health hazards from exposures to EMF have not been established. The Alpine Report affirms that there is no scientific consensus that EMF exposure is actually hazardous to health, nor is there an accepted standard of exposure.

Neither the CPUC, PG&E, nor SMUD stipulate requirements for any setbacks from the edge of transmission line rights-of-way, nor have they established any limitations for land uses adjacent to the right of ways in order to maintain public safety. Based on the above information, the proposed open space, drainage areas, and protected preserve areas that would be located below the existing on-site PG&E and SMUD facilities would not pose a hazard to public safety or health associated with EMF exposure.

Further, the California Supreme Court held that, as a general rule, CEQA does not apply to impacts of the environment on a project, with several statutory exceptions including "how a project might exacerbate existing environmental hazards." (California Building Industry Assoc. v. Bay Area Air Quality Management District (2015) 62 Cal. 4th 369). The existing transmission lines are not a hazard as health hazards associated with exposures to EMF have not been established, as determined by the CPUC in 1993 and 2006 and affirmed in the 2016 Alpine Report. The Project would not exacerbate any existing condition relative to the transmission lines that would make the transmission lines hazardous. No changes to the impact analysis or significance conclusions in the Draft EIR are warranted.

This information has been incorporated in Section 3.7 (Hazards and Hazardous Materials) of the Draft EIR. See Chapter 3.0, Errata, of this Final EIR for the revisions and inserted text.

Response B-12: The commenter notes that the Draft EIR has determined that the Project site is not within the 100-year flood hazard area and the Sacramento County Water Agency (SCWA) will be able to meet the future demands of the Project. The commenter notes that no further analysis is required. The commenter has correctly summarized the text of the Draft EIR. No further response is necessary.

Response B-13: The commenter notes that the Land Use Summary table on page 2.0-5 of the Draft EIR should be updated to reflect the modified tentative subdivision map. This comment is noted. Please see

Section 2.3, Modifications to the Project, for the updated Land Use Summary Table. The changes to this table are also shown in Chapter 3.0 of this Final EIR.

Response B-14: The commenter notes that the Draft EIR has determined that playground noise will be a less than significant impact. The commenter notes that no further analysis is required. The commenter has correctly summarized the text of the Draft EIR. No further response is necessary.

Response B-15: The commenter notes that the Draft EIR has listed household sizes for different categories of residential land use based on the California Department of Finance and the 2013-2017 American Community Survey. The comment recommends that the numbers for Persons Per Household adopted by Ranch Cordova should also be described under "Persons Per Dwelling Unit" (on page 3.11-2 of the Draft EIR). This comment is noted.

The Draft EIR identifies two approaches for calculating the population resulting from the Project. The ratios used for the Quimby parkland calculation are based on the ratios prescribed by RCMC Chapter 22.40, Park and Recreation Dedication and Fees, as applied by the City to address the Quimby requirement (see also Section 2.3, Modifications to the Project,). As discussed on page 3.11-2 of Section 3.11 (Population and Housing), the average number of persons residing in a dwelling unit in Rancho Cordova is 2.84 (California Department of Finance, 2018). The 2013-2017 American Community Survey 5-Year Estimates data provides more detail regarding household sizes in the City, reporting average household sizes of 2.84 persons per owner-occupied households, 2.89 persons per renter-occupied households, 2.08 persons per owner-occupied householders 60 years and older, and 2.05 persons per renter-occupied householders 60 years and older. These rates were applied to the Project for use in the Draft EIR in order to provide a conservative estimate of the Project's potential population that is consistent with the recent ACS data, which is a more recent source than the household sizes identified in RCMC Chapter 22.40.

As a result of the recent changes to the tentative subdivision map, the population projections have been recalculated. Please see Section 2.3, Modifications to the Project, for the population estimates. The Quimby population projections and ACS population projections are shown in Table 2.0-3 of this chapter. The Draft EIR has also been revised to reflect the updated population projections.

Response B-16: The commenter notes that the revised Project is required to provide an overall of 19.1 acres of Quimby Parkland. The commenter also recommends that the Final EIR include an updated table for park land dedication. This comment is noted. Please see Section 2.3, Modifications to the Project, for the population estimates. The Quimby population projections and American Community Survey population projections are shown in Table 2.0-3 of this chapter. The Draft EIR has also been revised to reflect the updated population projections. As shown, the total Quimby population would be 3,940 persons, which corresponds to a Quimby parkland requirement of 19.7 acres. Table 2.0-4 summarizes the Quimby parkland requirement for each component of the Project.

Response B-17: The commenter lists information which should be included in the Final EIR, including: (1) an updated land use summary and park land description; (2) an updated phasing schedule that reflects any agreement between CRPD and the property owner; (3) a graphic of the proposed General Plan amendment that designates all public and private park land as P/OS; (4) site- specific maps of existing biological resources that are subject to mitigation; (5) a report to address EMFs around high voltage lines or evidence that such concerns are unwarranted; (6) information

regarding persons per household that has been applied to the project; and (7) a table that shows parkland dedication requirements based on the latest tentative subdivision map. This comment is noted and serves as a summary and conclusion to the comment letter. Please see Section 2.3, Modifications to the Project, as well as Responses B-8, B-11, B-15, and B-16.

Pacific Gas and Electric Company

Plan Review Team
Land Management

PGEPlanReview@pge.com

6111 Bollinger Canyon Road 3370A
San Ramon, CA 94583

August 16, 2019

June Cowles
City of Rancho Cordova
2729 Prospect Park Dr
Rancho Cordova, CA 95670

Ref: Gas and Electric Transmission and Distribution

Dear Ms. Cowles,

Thank you for submitting the Ranch DEIR plans for our review. PG&E will review the submitted plans in relationship to any existing Gas and Electric facilities within the project area. If the proposed project is adjacent/or within PG&E owned property and/or easements, we will be working with you to ensure compatible uses and activities near our facilities.

C-1

Attached you will find information and requirements as it relates to Gas facilities (Attachment 1) and Electric facilities (Attachment 2). Please review these in detail, as it is critical to ensure your safety and to protect PG&E's facilities and its existing rights.

Below is additional information for your review:

1. This plan review process does not replace the application process for PG&E gas or electric service your project may require. For these requests, please continue to work with PG&E Service Planning: https://www.pge.com/en_US/business/services/building-and-renovation/overview/overview.page.

C-2

2. If the project being submitted is part of a larger project, please include the entire scope of your project, and not just a portion of it. PG&E's facilities are to be incorporated within any CEQA document. PG&E needs to verify that the CEQA document will identify any required future PG&E services.

3. An engineering deposit may be required to review plans for a project depending on the size, scope, and location of the project and as it relates to any rearrangement or new installation of PG&E facilities.

Any proposed uses within the PG&E fee strip and/or easement, may include a California Public Utility Commission (CPUC) Section 851 filing. This requires the CPUC to render approval for a conveyance of rights for specific uses on PG&E's fee strip or easement. PG&E will advise if the necessity to incorporate a CPUC Section 851filing is required.

C-3

This letter does not constitute PG&E's consent to use any portion of its easement for any purpose not previously conveyed. PG&E will provide a project specific response as required.

Sincerely,

Plan Review Team
Land Management

PG&E Gas and Electric Facilities Page 1

Pacific Gas and Electric Company

Attachment 1 – Gas Facilities

There could be gas transmission pipelines in this area which would be considered critical facilities for PG&E and a high priority subsurface installation under California law. Care must be taken to ensure safety and accessibility. So, please ensure that if PG&E approves work near gas transmission pipelines it is done in adherence with the below stipulations. Additionally, the following link provides additional information regarding legal requirements under California excavation laws: http://usanorth811.org/wp-content/uploads/2017/05/CA-LAW-English.pdf

1. Standby Inspection: A PG&E Gas Transmission Standby Inspector must be present during any demolition or construction activity that comes within 10 feet of the gas pipeline. This includes all grading, trenching, substructure depth verifications (potholes), asphalt or concrete demolition/removal, removal of trees, signs, light poles, etc. This inspection can be coordinated through the Underground Service Alert (USA) service at 811. A minimum notice of 48 hours is required. Ensure the USA markings and notifications are maintained throughout the duration of your work.

2. Access: At any time, PG&E may need to access, excavate, and perform work on the gas pipeline. Any construction equipment, materials, or spoils may need to be removed upon notice. Any temporary construction fencing installed within PG&E's easement would also need to be capable of being removed at any time upon notice. Any plans to cut temporary slopes exceeding a 1:4 grade within 10 feet of a gas transmission pipeline need to be approved by PG&E Pipeline Services in writing PRIOR to performing the work.

3. Wheel Loads: To prevent damage to the buried gas pipeline, there are weight limits that must be enforced whenever any equipment gets within 10 feet of traversing the pipe.

Ensure a list of the axle weights of all equipment being used is available for PG&E's Standby Inspector. To confirm the depth of cover, the pipeline may need to be potholed by hand in a few areas.

Due to the complex variability of tracked equipment, vibratory compaction equipment, and cranes, PG&E must evaluate those items on a case-by-case basis prior to use over the gas pipeline (provide a list of any proposed equipment of this type noting model numbers and specific attachments).

No equipment may be set up over the gas pipeline while operating. Ensure crane outriggers are at least 10 feet from the centerline of the gas pipeline. Transport trucks must not be parked over the gas pipeline while being loaded or unloaded.

4. Grading: PG&E requires a minimum of 36 inches of cover over gas pipelines (or existing grade if less) and a maximum of 7 feet of cover at all locations. The graded surface cannot exceed a cross slope of 1:4.

5. Excavating: Any digging within 2 feet of a gas pipeline must be dug by hand. Note that while the minimum clearance is only 12 inches, any excavation work within 24 inches of the edge of a pipeline must be done with hand tools. So to avoid having to dig a trench entirely with hand tools, the edge of the trench must be over 24 inches away. (Doing the math for a 24 inch wide trench being dug along a 36 inch pipeline, the centerline of the trench would need to be at least 54 inches [24/2 + 24 + 36/2 = 54] away, or be entirely dug by hand.)

Pacific Gas and Electric Company

Water jetting to assist vacuum excavating must be limited to 1000 psig and directed at a 40° angle to the pipe. All pile driving must be kept a minimum of 3 feet away.

Any plans to expose and support a PG&E gas transmission pipeline across an open excavation need to be approved by PG&E Pipeline Services in writing PRIOR to performing the work.

6. Boring/Trenchless Installations: PG&E Pipeline Services must review and approve all plans to bore across or parallel to (within 10 feet) a gas transmission pipeline. There are stringent criteria to pothole the gas transmission facility at regular intervals for all parallel bore installations.

For bore paths that cross gas transmission pipelines perpendicularly, the pipeline must be potholed a minimum of 2 feet in the horizontal direction of the bore path and a minimum of 12 inches in the vertical direction from the bottom of the pipe with minimum clearances measured from the edge of the pipe in both directions. Standby personnel must watch the locator trace (and every ream pass) the path of the bore as it approaches the pipeline and visually monitor the pothole (with the exposed transmission pipe) as the bore traverses the pipeline to ensure adequate clearance with the pipeline. The pothole width must account for the inaccuracy of the locating equipment.

7. Substructures: All utility crossings of a gas pipeline should be made as close to perpendicular as feasible (90° +/- 15°). All utility lines crossing the gas pipeline must have a minimum of 12 inches of separation from the gas pipeline. Parallel utilities, pole bases, water line 'kicker blocks', storm drain inlets, water meters, valves, back pressure devices or other utility substructures are not allowed in the PG&E gas pipeline easement.

If previously retired PG&E facilities are in conflict with proposed substructures, PG&E must verify they are safe prior to removal. This includes verification testing of the contents of the facilities, as well as environmental testing of the coating and internal surfaces. Timelines for PG&E completion of this verification will vary depending on the type and location of facilities in conflict.

8. Structures: No structures are to be built within the PG&E gas pipeline easement. This includes buildings, retaining walls, fences, decks, patios, carports, septic tanks, storage sheds, tanks, loading ramps, or any structure that could limit PG&E's ability to access its facilities.

9. Fencing: Permanent fencing is not allowed within PG&E easements except for perpendicular crossings which must include a 16 foot wide gate for vehicular access. Gates will be secured with PG&E corporation locks.

10. Landscaping: Landscaping must be designed to allow PG&E to access the pipeline for maintenance and not interfere with pipeline coatings or other cathodic protection systems. No trees, shrubs, brush, vines, and other vegetation may be planted within the easement area. Only those plants, ground covers, grasses, flowers, and low-growing plants that grow unsupported to a maximum of four feet (4') in height at maturity may be planted within the easement area.

11. Cathodic Protection: PG&E pipelines are protected from corrosion with an "Impressed Current" cathodic protection system. Any proposed facilities, such as metal conduit, pipes,

Pacific Gas and Electric Company

service lines, ground rods, anodes, wires, etc. that might affect the pipeline cathodic protection system must be reviewed and approved by PG&E Corrosion Engineering.

12. Pipeline Marker Signs: PG&E needs to maintain pipeline marker signs for gas transmission pipelines in order to ensure public awareness of the presence of the pipelines. With prior written approval from PG&E Pipeline Services, an existing PG&E pipeline marker sign that is in direct conflict with proposed developments may be temporarily relocated to accommodate construction work. The pipeline marker must be moved back once construction is complete.

13. PG&E is also the provider of distribution facilities throughout many of the areas within the state of California. Therefore, any plans that impact PG&E's facilities must be reviewed and approved by PG&E to ensure that no impact occurs which may endanger the safe operation of its facilities.

Pacific Gas and Electric Company

Attachment 2 – Electric Facilities

It is PG&E's policy to permit certain uses on a case by case basis within its electric transmission fee strip(s) and/or easement(s) provided such uses and manner in which they are exercised, will not interfere with PG&E's rights or endanger its facilities. Some examples/restrictions are as follows:

1. Buildings and Other Structures: No buildings or other structures including the foot print and eave of any buildings, swimming pools, wells or similar structures will be permitted within fee strip(s) and/or easement(s) areas. PG&E's transmission easement shall be designated on subdivision/parcel maps as "**RESTRICTED USE AREA – NO BUILDING.**"

2. Grading: Cuts, trenches or excavations may not be made within 25 feet of our towers. Developers must submit grading plans and site development plans (including geotechnical reports if applicable), signed and dated, for PG&E's review. PG&E engineers must review grade changes in the vicinity of our towers. No fills will be allowed which would impair ground-to-conductor clearances. Towers shall not be left on mounds without adequate road access to base of tower or structure.

3. Fences: Walls, fences, and other structures must be installed at locations that do not affect the safe operation of PG&'s facilities. Heavy equipment access to our facilities must be maintained at all times. Metal fences are to be grounded to PG&E specifications. No wall, fence or other like structure is to be installed within 10 feet of tower footings and unrestricted access must be maintained from a tower structure to the nearest street. Walls, fences and other structures proposed along or within the fee strip(s) and/or easement(s) will require PG&E review; submit plans to PG&E Centralized Review Team for review and comment.

4. Landscaping: Vegetation may be allowed; subject to review of plans. On overhead electric transmission fee strip(s) and/or easement(s), trees and shrubs are limited to those varieties that do not exceed 15 feet in height at maturity. PG&E must have access to its facilities at all times, including access by heavy equipment. No planting is to occur within the footprint of the tower legs. Greenbelts are encouraged.

5. Reservoirs, Sumps, Drainage Basins, and Ponds: Prohibited within PG&E's fee strip(s) and/or easement(s) for electric transmission lines.

6. Automobile Parking: Short term parking of movable passenger vehicles and light trucks (pickups, vans, etc.) is allowed. The lighting within these parking areas will need to be reviewed by PG&E; approval will be on a case by case basis. Heavy equipment access to PG&E facilities is to be maintained at all times. Parking is to clear PG&E structures by at least 10 feet. Protection of PG&E facilities from vehicular traffic is to be provided at developer's expense AND to PG&E specifications. Blocked-up vehicles are not allowed. Carports, canopies, or awnings are not allowed.

7. Storage of Flammable, Explosive or Corrosive Materials: There shall be no storage of fuel or combustibles and no fueling of vehicles within PG&E's easement. No trash bins or incinerators are allowed.

8. Streets and Roads: Access to facilities must be maintained at all times. Street lights may be allowed in the fee strip(s) and/or easement(s) but in all cases must be reviewed by PG&E for

Pacific Gas and Electric Company

proper clearance. Roads and utilities should cross the transmission easement as nearly at right angles as possible. Road intersections will not be allowed within the transmission easement.

9. Pipelines: Pipelines may be allowed provided crossings are held to a minimum and to be as nearly perpendicular as possible. Pipelines within 25 feet of PG&E structures require review by PG&E. Sprinklers systems may be allowed; subject to review. Leach fields and septic tanks are not allowed. Construction plans must be submitted to PG&E for review and approval prior to the commencement of any construction.

10. Signs: Signs are not allowed except in rare cases subject to individual review by PG&E.

11. Recreation Areas: Playgrounds, parks, tennis courts, basketball courts, barbecue and light trucks (pickups, vans, etc.) may be allowed; subject to review of plans. Heavy equipment access to PG&E facilities is to be maintained at all times. Parking is to clear PG&E structures by at least 10 feet. Protection of PG&E facilities from vehicular traffic is to be provided at developer's expense AND to PG&E specifications.

12. Construction Activity: Since construction activity will take place near PG&E's overhead electric lines, please be advised it is the contractor's responsibility to be aware of, and observe the minimum clearances for both workers and equipment operating near high voltage electric lines set out in the High-Voltage Electrical Safety Orders of the California Division of Industrial Safety (https://www.dir.ca.gov/Title8/sb5g2.html), as well as any other safety regulations. Contractors shall comply with California Public Utilities Commission General Order 95 (http://www.cpuc.ca.gov/gos/GO95/go_95_startup_page.html) and all other safety rules. No construction may occur within 25 feet of PG&E's towers. All excavation activities may only commence after 811 protocols has been followed.

Contractor shall ensure the protection of PG&E's towers and poles from vehicular damage by (installing protective barriers) Plans for protection barriers must be approved by PG&E prior to construction.

13. PG&E is also the owner of distribution facilities throughout many of the areas within the state of California. Therefore, any plans that impact PG&E's facilities must be reviewed and approved by PG&E to ensure that no impact occurs that may endanger the safe and reliable operation of its facilities.

Response to Letter C: Pacific Gas & Electric Company

Response C-1: This comment serves as an introduction to the comment letter. The attachments provided in this comment letter have been forwarded to the City and Project applicant for their information. This comment is noted. No further response is necessary.

Response C-2: The commenter notes that: the Pacific Gas & Electric (PG&E) plan review process does not replace the application process for PG&E gas or electric service that maybe required for the Project; if a project is being submitted as part of a larger project, the entire scope and PG&E facilities should be included in the CEQA document; and, an engineering deposit may be required to review plans for a project. While this comment does not address the adequacy of the Draft EIR, the commenter is referred to Draft EIR Chapter 2.0 (Project Description), which identifies existing conditions, including known PG&E facilities on the Project site, and Section 3.9 (Land Use), which addresses the Project's consistency with various land use regulations, including regulations associated with electrical transmission lines, under Impact 3.9-1. This comment letter and the associated attachments have been provided to the City and Project applicant for their information. This comment does not address the adequacy of the Draft EIR. No further response is necessary.

Response C-3: The commenter notes that any proposed uses within the PG&E fee strip and/or easement, may include a CPUC Section 851 filing. This requires the CPUC to render approval for a conveyance of rights for specific uses on PG&E's fee strip or easement. PG&E will advise if the necessity to incorporate a CPUC Section 851 filing is required. This comment letter and the associated attachments have been provided to the City and Project applicant for their information. This comment does not address the adequacy of the Draft EIR. No further response is necessary.

DWMR
SACRAMENTO COUNTY
DEPARTMENT OF WASTE MANAGEMENT & RECYCLING
DOING WHAT MATTERS, RESPONSIBLY.

County of Sacramento
Public Works & Infrastructure
Department of Waste Management & Recycling

Doug Sloan, Director

Date: September 21, 2019

To: June Cowles, City of Rancho Cordova Planning Department

From: Dave Ghirardelli, County of Sacramento Department of Waste Management & Recycling (DWMR)

SUBJECT: DWMR Comments on The Ranch DEIR

Please find below DWMR's comments regarding this Draft Environment Impact Report. D-1

Section 3.14.3 Solid Waste

This section contains incorrect information. The first three paragraphs of the Existing Settings subsection indicate Rancho Cordova's waste is transported to Kiefer Landfill. It is not. Republic Services transports Rancho Cordova's residential solid waste to Elder Creek Transfer Station in south Sacramento where it is transferred and hauled an additional 51 miles to Forward Landfill in San Joaquin County. Section 3.6 (Greenhouse Gases, Climate Change, and Energy) and Section 3.13 (Transportation and Circulation) should be reviewed for potential recalculations or reconsiderations. D-2

While Kiefer Landfill currently operates below its permitted maximum, Rancho Cordova has not secured any current or future disposal capacity at Kiefer Landfill. The Impacts and Mitigation Measures subsection needs to be revised to accurately reflect current practices in consideration of the capacity provision in Threshold of Significance number 1.

Lastly, the California Green Building Standards Code (CalGreen) diversion requirement is now 65%, not 50%.

Proximity of Kiefer Landfill

DWMR owns and operates Kiefer Landfill approximately two miles from the proposed development. Kiefer Landfill has served the waste disposal needs of residents and businesses in Sacramento County since 1968 and will continue to do so until approximately 2070 when the permitted capacity is projected to be completed. Kiefer Landfill is a highly engineered, state-of-the-art facility that is strictly regulated and professionally operated. Waste is tipped, set in place, compacted, and covered on a daily basis. As the waste decomposes the landfill gas that is generated is collected and delivered to a 15 megawatt power plant on-site which delivers D-3

9850 Goethe Road, Sacramento CA, 95827 Phone: (916) 875-6789 Fax: (916) 854-8901

electricity to approximately 10,000 homes in Sacramento. Even with the best technology and practices, the management of solid waste has the potential to produce odors, noise, and dust.

DWMR strongly recommends this development include as a condition of entitlement that all parcels, existing and subsequent, be accompanied by a Kiefer Landfill Disclosure, signed by the seller and the buyer. The Disclosure must be recorded on all deeds and written to the following effects: (1) Acknowledging the preexistence and proximity of Kiefer Landfill; (2) Solid waste disposal is a permitted activity at Kiefer Landfill; and (3) Solid waste management practices will sometimes unavoidably create odors, noise, and dust. Sample Disclosures can be provided upon request. D-3 cont'd

Per the comment submittal instructions in the Notice of Availability for this DEIR, a printed copy of this memorandum has been mailed via US Mail to the address indicated.

Thank you for the opportunity to comment on The Ranch DEIR and please keep me informed of events, especially comment deadlines, throughout the process of entitlement for The Ranch. D-4

C: Doug Sloan, Director
Keith Goodrich
Tim Israel

Response to Letter D: Sacramento County Department of Waste Management & Recycling

Response D-1: This comment serves as an introduction to the comment letter and does not warrant a response. This comment is noted. No further response is necessary.

Response D-2: The commenter provides updated information regarding the information in Section 3.14.3 of the Draft EIR. The commenter also requests that the impacts and mitigation measures subsection be revised to reflect the current practices in consideration of the capacity provisions. This comment is noted. The information in Draft EIR Section 3.14.3 has been revised, including the impacts and mitigation measures section, to reflect the information provided by the commenter. Please see Chapter 3.0 of this Final EIR for the revised text.

Additional revisions to other sections of the Draft EIR are not warranted as a result of this comment. Construction waste and debris resulting from the Project would likely go to the nearest landfill, regardless of which landfill is currently used by the City's residential waste collection provider. As such, a change in construction traffic would likely not occur as a result. Because modeled air quality and greenhouse gas emissions for construction are directly related to the number of construction trips, the construction-related air quality and greenhouse gas emissions would also not occur.

For operation of the Project, the transportation analysis completed for the Draft EIR does not include analysis for solid waste disposal that is based on a specific landfill location. Instead, the hauling of waste is embodied within the trip generation rate for various land uses published by the Institute of Transportation Engineers (ITE) Trip Generation Manual. In addition to trip generation rates, the air quality and greenhouse gas analysis also includes average fleet mixes (i.e., ratio of automobiles, heavy duty trucks, medium duty trucks, etc.) for various land uses, including both residential and non-residential. The fleet mixes in the air quality and greenhouse gas emissions modeling software (CalEEMod) are provided by the EMFAC Web Database, which is published by the California Air Resources Board. As such, the hauling of waste, and the associated medium duty trucks (classified as Heavy-Heavy Duty Diesel Solid Waste Collection Trucks by the EMFAC Vehicle Categories) required to haul the waste is not dependent on the location of the landfill, and the hauling of waste from the site is built into the transportation, air quality, and greenhouse gas analysis completed for the Project.

Response D-3: The commenter notes various facts regarding the Kiefer Landfill, which is owned and operated by the County Department of Waste Management & Recycling. The comment also recommends that the Project include as a condition of entitlement that all parcels, existing and subsequent, be accompanied by a Kiefer Landfill Disclosure, signed by the seller and the buyer. According to the commenter, the Disclosure must be recorded on all deeds and written to the following effects: (1) Acknowledging the preexistence and proximity of Kiefer Landfill; (2) Solid waste disposal is a permitted activity at Kiefer Landfill; and (3) Solid waste management practices will sometimes unavoidably create odors, noise, and dust. The commenter's concerns related to Kiefer Landfill operations address impacts of the environment on the Project. As a general rule, CEQA does not apply to impacts of the environment on a project but rather addresses a project's impact on the environment (California Building Industry Assoc. v. Bay Area Air Quality Management District (2015) 62 Cal. 4th 369). Therefore, the Draft EIR is not required to address exposure of the Project to existing sources of odors. It is noted that impacts associated with particulate matter caused by

dust are addressed in Section 3.2, Air Quality, of the Draft EIR and impacts associated with Project exposure to noise are addressed in Section 3.10, Noise, of the Draft EIR. This comment does not address the adequacy of the Draft EIR and no further response is required.

Response D-4: This comment is noted. This comment serves as a conclusion to the comment letter. No further response is necessary.

Department of Transportation
Ron E. Vicari, Director

County of Sacramento

Divisions
Administration
Maintenance & Operations
Engineering & Planning

September 13, 2019

Kelly Whitman
Planning Department
City of Rancho Cordova
2729 Prospect Park Drive
Rancho Cordova, CA 95670

SUBJECT: COMMENTS ON THE RANCH DRAFT ENVIRONMENTAL REPORT

Ms. Whitman:

The County of Sacramento, Department of Transportation has reviewed the Draft Environmental Impact Report (DEIR) for The Ranch project. We appreciate the opportunity to review the DEIR, and have following comment.

1. The County would ask the City of Rancho Cordova to enter into a reciprocal funding agreement to pay fair share cost for the cross jurisdictional impacts.

E-1

Should you have any questions, please feel free to contact me at (916) 874-7052.

Sincerely,

Matthew G. Darrow, PE, TE, PTOE.
Principal Civil Engineer
Department of Transportation

MGD/mp

Cc: Ron Vicari, DOT
Dan Shoeman, DOT
Reza Moghissi, DOT
Lupe Rodriguez, DOT
Rick Carter, DOT
LU Li, DOT

4111 Branch Center Road • Sacramento, California 95827 • phone (916) 874-6291 • fax (916) 874-7831 • www.saccounty.net

Response to Letter E: Sacramento County Department of Transportation

Response E-1: The commenter requests that the City of Rancho Cordova enter into a reciprocal funding agreement with the County to pay fair share costs for the cross-jurisdictional impacts. The City has a Master Operations Agreement with the County and will enter into a reciprocal funding agreement with the County to address the improvements identified in Draft EIR Section 3.13, particularly the fair-share of improvements identified in Mitigation Measures 3.13-1 and 3.13-2.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

September 30, 2019

SENT VIA EMAIL

June Cowles, Senior Planner
City of Rancho Cordova Planning Department
2729 Prospect Park Drive
Rancho Cordova, California 95670

RE: The Ranch – Draft Environmental Impact Report

Dear Ms. Cowles,

The Sacramento Metropolitan Air Quality Management District (SMAQMD) thanks the City of Rancho Cordova for the opportunity to evaluate The Ranch Draft Environmental Impact Report (DEIR). We have reviewed the project in a manner consistent with the California Health and Safety Code Section 40961 requirement that the District "represent all the citizens of the Sacramento District in influencing the decisions of other public and private agencies whose actions may have an adverse impact on air quality." We offer the following comments. F-1

Operational Emissions

Greenhouse Gas Emissions

Mitigation measures for Impact 3.6-2 should be quantified in the DEIR text, to demonstrate that they reduce emissions to a less–than–cumulatively–considerable level. Further for all mitigation measures, descriptive text should be as detailed as possible, as stated in SMAQMD's *Guide to Air Quality Assessment in Sacramento County* (Guidance), available on our website. Mitigation measures should clearly identify who is responsible for implementation, funding, monitoring, enforcement, and any required maintenance activities. Most of the measures in the DEIR are from CalEEMod but are not detailed or specific enough to ensure that they provide the same emission reductions assumed for the measure in the model. F-2

Many of the measures are listed as "included in project design," and this should be clarified, since the DEIR project description is unspecific and does not guarantee their implementation. Mitigation measure text should clearly describe where the measures are designated for implementation and monitoring, for example whether they would be included in the *Ranch Special Planning Area Handbook*, or whether they would be included as conditions of approval for all projects built in the Ranch planning area.

CalEEMod guidance refers users to the California Air Pollution Control Officers Association (CAPCOA) guidance, *Quantifying Greenhouse Gas Mitigation Measures* for more detail on the measures. Both CalEEMod and this guidance are resources for fully quantifying

777 12th Street, 3rd Floor | Sacramento, CA 95814-1908
916/874-4800 | 916/874-4899 fax
www.airquality.org

measures. SMAQMD staff would be happy to assist with the process of quantifying measures and providing appropriate specificity. F-2 cont'd

Criteria Pollutant Emissions
Mitigation measures that are incorporated into the DEIR's CalEEMod run should be included in the DEIR as mitigation measures for operational criteria pollutant emissions. This will help ensure that mitigated impacts that are projected in the DEIR reflect actual conditions to the greatest extent possible. *This is particularly important because the mitigation measures greatly affect whether operational NOx emissions exceed the SMAQMD threshold.* Because these measures would largely be the same measures that would be used for operational GHG emissions, this should be a straightforward process. F-3

Additionally, because internal capture rate is applied to the trip rates used in the "Operational-Mobile" portion of the CalEEMod run, the CalEEMod run must also reflect that these trips are all primary trips and not diverted or pass-by trips. Also because of the internal capture rate application, the "Increase Diversity" mitigation measure in CalEEMod should not be included, as it appears to double-count trip reductions. F-4

Moreover, the DEIR CalEEMod run for this project uses 50 g/L, and cites Rule 442 as justification. Rule 442 covers flat coatings only, while other coatings have higher volatile organic compound (VOC) content. The average VOC content for architectural coatings in our district is approximately 75 g/L, and a CalEEMod override of 75 g/L may be an appropriate number to use for architectural coatings in our district; however, to ensure a conservative and fully defensible estimate, you may wish to use the 100 g/L CalEEMod default for the DEIR. F-5

Further, the DEIR CalEEMod override for the consumer products general emission factor is not adequately documented. It is unclear how exactly the 29.10% reduction identified in the CalEEMod parameters was determined. Please note that the general emission factor is based on 2008 statewide VOC emissions data divided by statewide square footage (see Appendix E3 of the *CalEEMod User Guide*). In the absence of a valid, fully documented general emission factor modification, the CalEEMod default should be used. F-6

SMAQMD staff ran CalEEMod for the project, using the higher numbers for VOC content in architectural coatings, removing redundant trip capture settings, and without the general emission factor override for consumer products. Outputs showed project emissions that exceed the SMAQMD threshold of significance for reactive organic gas (ROG) or VOC emissions, even when mitigation measures were incorporated into the CalEEMod run. This run otherwise used project settings as described in Appendix B.1 of the DEIR. With these revised settings, CalEEMod outputs show that this project exceeds SMAQMD thresholds for criteria pollutants, and the DEIR should provide for mitigation accordingly. F-7

Construction Emissions
Because construction greenhouse gas (GHG) emissions will exceed SMAQMD thresholds, the measures in SMAQMD's *Guidance for Construction GHG Emissions Reductions* should be F-8

included as mitigation. It is true that the SMAQMD guidance on CEQA review references amortizing the construction emissions along with the operational emissions prior to applying mitigation. Operational GHGs are significant, however, and including the guidance on construction GHG emissions reductions as mitigation would provide for more solidly admissible GHG impact mitigation. F-8 cont'd

Further, SMAQMD's *Basic Construction Emission Control Practices* (BCECP), available on our website, should be explicitly included as mitigation for construction criteria pollutant emissions. Construction criteria pollutant emissions were modeled incorporating best management practices, and including BCECP will help ensure that emissions that are projected in the DEIR reflect actual conditions to the greatest extent possible. F-9

Toxics and Sensitive Receptors
The analysis of potential to expose sensitive receptors to toxic air contaminants references the California Air Resources Board (CARB) *Air Quality and Land Use Handbook*. We recommend that the DEIR also reference more recent guidance, CARB's 2017 *Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways*. F-10

Conclusion
Thank you for your consideration. All projects are subject to SMAQMD rules and regulations at the time of construction. A list of the most common rules that apply at the construction phase of projects is available on our website. If you have questions about these comments, please contact me at mwright@airquality.org or 916-874-4207 F-11

Sincerely,

Molly Wright

Molly Wright, AICP
Air Quality Planner / Analyst

c: Paul Philley, AICP, Program Coordinator

Response to Letter F: Sacramento Metropolitan Air Quality Management District

Response F-1: This comment serves as an introduction to the comment letter and does not warrant a response. This comment is noted. No further response is necessary.

Response F-2: The commenter recommends that mitigation measures for Impact 3.6-2 should be quantified in the DEIR text, to demonstrate that they reduce emissions to a less-than-cumulatively—considerable level and that descriptive text for all mitigation measures should be as detailed as possible, as stated in SMAQMD's Guide to Air Quality Assessment in Sacramento County (Guidance). The commenter further states that mitigation measures should clearly identify who is responsible for implementation, funding, monitoring, enforcement, and any required maintenance activities and addresses providing adequate detail to support the use of the mitigation measures. The commenter also indicates that measures listed as "included in project design" should be clarified since the Draft EIR project description is unspecific and does not guarantee their implementation. The commenter indicates that mitigation measure text should clearly describe where the measures are designated for implementation and monitoring, for example whether they would be included in the SPA Handbook, or whether they would be included as conditions of approval for all projects built in The Ranch Planning Area. The commenter further indicates that CalEEMod guidance refers users to the California Air Pollution Control Officers Association (CAPCOA) guidance, Quantifying Greenhouse Gas Mitigation Measures for more detail on the measures, indicating both CalEEMod and the CAPCOA guidance are resources for fully quantifying measures.

Based on this comment, more detail is provided regarding the assumptions associated with Project features (see revisions to Draft EIR pages 3.6-25 and 3.6-26 in Chapter 3, Revisions). Project features that have been identified as measures that reduce potential air pollutant or greenhouse gas emissions are features that are shown on the tentative subdivision map, specified in the SPA Handbook, or are a calculation based on the location of the Project. As plans for subsequent phases of the Project are submitted to the City, each set of plans will be reviewed for consistency with the tentative subdivision map, SPA Handbook, and the Project Description provided in the Draft EIR.

Table 3.6-7 in Draft EIR Section 3.6, is revised as identified in Chapter 3, Revisions, of this Final EIR to include the numerical GHG emissions estimate for the Project emissions and Project emissions after mitigation to demonstrate the reduction in emissions associated with application of the proposed mitigation measures. The revisions to Table 3.6-7 also address the amount of carbon offset required to meet the SMAQMD's 1,100 MT CO_2e/year threshold (i.e. reduce emissions to a less-than cumulatively considerable level).

Regarding quantification of individual mitigation applied in CalEEMod, CalEEMOD (v.2016.3.2) is the modeling tool utilized to develop the quantification of Project emissions estimates (including for both the unmitigated and mitigated scenarios). The reductions in GHG emissions that occur from implementation of the Project mitigation measures (as provided in Draft EIR Section 3.6 (Greenhouse Gases, Climate Change, and Energy) have been performed using CalEEMOD based on the SMAQMD Guidance document (i.e. SMAQMD's *Guide to Air Quality Assessment in Sacramento County*) as well as the *SMAQMD's Sacramento Metropolitan Air Quality Management District Tips for Using CalEEMod* and through early discussion with the SMAQMD (Molly Wright, Air Quality Planner Analyst). Quantification of each individual mitigation measure separately is not feasible, given that the modeling tool (CalEEMod) quantifies the impact of each mitigation measure internally within the model, and modeling outputs do not provide results identifying the individual

reduction associated with each mitigation measure. Rather, emission results are provided by CalEEMOD for each scenario in aggregate. The impact analysis in Draft EIR Section 3.6 identifies anticipated emissions associated with the Project and the effect of implementation of mitigation to reduce Project emissions, based on the CalEEMOD tool. This analysis is adequate to provide decision-makers with information regarding the effect of the mitigation measure identified in the Draft EIR.

The results of the CalEEMod modeling for the mitigated scenario is provided in Draft EIR Table 3.6-6 and Table 3.6-7 and detailed GHG emissions modeling results for each modeling scenario are provided in Appendix B of the Draft EIR, as shown in Chapter 3.0, Revisions, of this Final EIR.

Table 3.6-8 in Draft EIR Section 3.6 (Greenhouse Gases, Climate Change, and Energy) lists each GHG Reduction Measure (as part of Mitigation Measure 3.6-3) that is required to be implemented by the Project applicant, as applicable. Table 3.6-8 includes the name of the GHG Reduction Measure, its applicability to the Project, and implementation details. Funding and maintenance of each applicable GHG Reduction Measure is the responsibility of the Project applicant, and the monitoring and enforcement is the responsibility of the City (the lead agency). Moreover, the Mitigation Monitoring and Reporting Program (MMRP) included as part of this Final EIR details all of the requirements for each of the applicable GHG reduction measures included as part of Mitigation Measure 3.6-3.

Mitigation Measure 3.6-3 includes 1) Project features that are already incorporated into Project design, 2) additional measures that are applied to the Project, and 3) the purchase of carbon offsets to reduce Project GHG emissions to below the applicable SMAQMD threshold of 1,100 MT CO_2e/year. Each measure that is considered a Project feature and is incorporated into the Project description is reflected on the Project application materials, which include the Tentative Subdivision Map and the SPA Handbook. The revisions to Draft EIR Table 3.6-8, as provided in Chapter 3, Revisions, include additional details where necessary to identify how the measure is incorporated into the Project (e.g., included in the SPA Handbook, shown on the tentative subdivision map, or how the measure will be applied when applicable as the Project is developed). As described in the MMRP and in the language of the mitigation measure, it is the responsibility of the Project applicant to implement and demonstrate compliance with the measure and the City is responsible for monitoring and enforcing the measures. In addition, the SPA Handbook has been updated to identify the incorporation of applicable project components into the Project design, consistent with the CalEEMod GHG Reduction Measures contained within Mitigation Measure 3.6-3.

Lastly, with regard to CAPCOA guidance – the CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures* calculation methodology for the applicable GHG Reduction Measures is incorporated into the CalEEMod model. Therefore, a separate calculation of the quantification of the GHG Reduction Measures included in Mitigation Measure 3.6-1 following CAPCOA guidance would be redundant to the quantification that CalEEMod already provides as shown within the Draft EIR in Section 3.6 (Greenhouse Gases, Climate Change, and Energy). No further response is required.

Response F-3: The commenter recommends that mitigation measures that are incorporated into the Draft EIR CalEEMod run should be included in the Draft EIR as mitigation measures for operational criteria pollutant emissions, helping to ensure that mitigated impacts projected in the Draft EIR reflect actual conditions to the greatest extent possible. The commenter indicates that this is particularly important because the mitigation measures greatly affect whether operational NOx emissions

exceed the SMAQMD threshold. Because these measures would largely be the same measures that would be used for operational GHG emissions, this should be a straightforward process.

The commenter correctly identifies that Project features that are already incorporated into Project design are considered under the unmitigated scenarios within Section 3.6 (Greenhouse Gases, Climate Change, and Energy). However, as stated within the Draft EIR, and as previously stated in Response F-2, a number of project features that are considered as "mitigation measures" by CalEEMod are in fact already incorporated into Project design. The features are proposed as part of the Project and while CalEEMOD uses the term "mitigation" in relation to determining reductions in emissions associated with these features, the Project components are not mitigation but are part of the Project Description, as identified in Chapter 2.0 of the Draft EIR and as revised in Chapter 3, Revisions, of this Final EIR. Additional information regarding these Project features has been provided in Sections 3.2 and 3.6 of the Draft EIR, as revised in Chapter 3.0 of this Final EIR. The additional information includes references to the component of the Project that includes or depicts the features, such as features shown on the Tentative Subdivision Map or features identified in the SPA Handbook. An 'unmitigated' CalEEMOD scenario that does not include all features that are proposed as part of the Project would provide incorrect data and information regarding the potential effects of the Project and is not an appropriate scenario to use as such a scenario would not accurately depict the Project, as proposed by the applicant. Therefore, to ensure that actual conditions are reflected to the greatest extent possible, Project features that are already incorporated into Project design, as described in Draft EIR Chapter 2.0, Project Description, are considered to be included under the 'unmitigated scenario', which reflects emissions associated with the Project as proposed by the applicant, as opposed to the 'mitigated scenario', which reflects mitigation measures identified by the City through the CEQA process to further avoid, minimize, or reduce the potential impact.

The Project, as proposed, would not generate emissions that exceed the thresholds for criteria pollutants as discussed under Draft EIR Impact 3.2-1. All Project components that reduce Project emissions are identified in Draft EIR Chapter 2.0, as well as Draft EIR pages 3.2-29 and 3.2-30. As individual phases or components of the Project move forward, each phase and component will be reviewed for consistency with the Project as addressed in the Draft EIR. Should the Project propose a change to the Project features, the City will determine whether the requested modification requires additional analysis and will proceed with reviewing the modification consistent with the requirements of CEQA. As discussed under Response F-2, Project features that reduce potential impacts are either shown on the Tentative Subdivision Map, identified in the SPA Handbook, or are standards required by SMAQMD. As previously described, the Project as proposed and described in the Project Description, would not exceed the SMAQMD thresholds for criteria pollutants. No mitigation is required and no changes to the Draft EIR are warranted in response to this comment.

Response F-4: The commenter indicates that because an internal capture rate is applied to the trip rates used in the "Operational-Mobile" portion of the CalEEMod run, the CalEEMod run must also reflect that these trips are all primary trips and not diverted or pass-by trips. Also because of the internal capture rate application, the "Increase Diversity" mitigation measure in CalEEMod should not be included, as it appears to double-count trip reductions.

Based on this comment, we have updated the CalEEMod modeling to remove the extraneous calculation of applying the internal capture rate to the Project's operational mobile emissions. Additionally, we have removed the "Increase Diversity" mitigation measure, to ensure that the

model would not double-count trip reductions from this measure. See the updated CalEEMod modeling results provided in Chapter 3.0, Revisions, for further detail.

Response F-5: The commenter indicates that while the Draft EIR CalEEMod run for the project uses 50 g/L, and cites Rule 442 as justification for volatile organic compound (VOC) content associated with architectural coatings, Rule 442 covers flat coatings only, while other coatings have higher VOC content. The commenter indicates that the average VOC content for architectural coatings in the district is approximately 75 g/L, and a CalEEMod override of 75 g/L may be an appropriate number to use for architectural coatings in the district. The commenter states that to ensure a conservative and fully defensible estimate, "you may wish to use the 100 g/L CalEEMod default for the Draft EIR" but does not provide any details substantiating the use of 100g/L as an assumption.

Based on this comment, the CalEEMod modeling was revised to reflect an average architectural coating VOC content level of 75 g/L, consistent with the average rate for architectural coatings within the SMAQMD jurisdictional boundaries. See the updated CalEEMod modeling results provided in Chapter 3.0, Revisions, for further detail.

Response F-6: The commenter states that the CalEEMod override used in the Draft EIR for the consumer products general emission factor is not adequately documented, noting that it is unclear how exactly the 29.10% reduction identified in the CalEEMod parameters are determined and also notes that the general emission factor is based on 2008 statewide VOC emissions data derived by statewide square footage (citing Appendix E3 of the CalEEMod User Guide) and recommends that, in the absence of a valid, fully documented general emission factor modification, the CalEEMod default should be used.

The Draft EIR CalEEMod override for the consumer products general emission factor was reviewed to determine if adjustments were required. This factor was derived based on the combination of two adjustments, which were made consistent with the guidance provided with the CalEEMod User's Guide Appendix E: Technical Source Documentation. First, an adjustment to this factor was made to reflect updated consumer products general emission values. Specifically, the default consumer products general emission factor for California within CalEEMod relies on outdated (year 2008) data from CARB. More recent data (for year 2016) for this factor is available from CARB.[1] This data demonstrates that the State of California has seen a reduction in VOC products emission rates from 2008 to 2016, from 239.6 g/L to 208.7 g/L. This is equivalent to a reduction of approximately 12.9% for consumer products VOC emission rates and it is appropriate to reflect this more recent data. The second adjustment to this factor was made because the Project has a substantially lower persons per dwelling unit value as compared with the factor used within the CalEEMod default factor (which refers to a factor relevant for the State of California as a whole). Specifically, the State of California persons per dwelling unit factor used by CalEEMod is 2.97 for Year 2018.[2] However, the person per dwelling unit factor for the Project is approximately 2.50; the lower average persons per dwelling unit is a result of the age-restricted component of the Project, which will have smaller household sizes than non-restricted units. The reduction in the Project population (or average persons per dwelling unit) results in a reduction in the VOC emissions that

[1] See CARB's 2016 Emissions Projection data here: https://www.arb.ca.gov/app/emsinv/2017/emssumcat_query.php?F_YR=2012&F_DIV=-4&F_SEASON=A&SP=SIP105ADJ&F_AREA=CA#5

[2] See California Department of Finance, E-5: Population and Housing Estimates for Cities, Counties, and the State.

would occur with the Project. The difference between the Project's average persons per household compared to the default CalEEMod rate equates to a reduction of 18.6%. These two factors, which are documented and substantiated, provides sufficient information to reduce the default CalEEMod consumer general products emission factor by a combined reduction of 29.1%.[3] The application of this reduction to the default CalEEMod factor of 0.0000214 g/L provides a reduced factor of 0.000015173 g/L (applicable specifically to the Project), which was applied within the CalEEMod model. No revision to the Draft EIR is warranted and further response is required.

Response F-7: The commenter states that SMAQMD staff ran CalEEMod for the project, using higher numbers for VOC content in architectural coatings, removing redundant trip capture settings, and without the general emission factor override for consumer products and indicated that the outputs showed project emissions that exceed the SMAQMD threshold of significance for reactive organic gas (ROG) or VOC emissions, even when mitigation measures were incorporated into the CalEEMod run and that the run otherwise used project settings as described in Appendix B.1 of the DEIR. The commenter indicates that, with their revised settings, CalEEMod outputs show that the Project exceeds the SMAQMD threshold for criteria pollutants, and the DEIR should provide for mitigation accordingly.

As previously identified, Project emissions have been remodeled to reflect an updated tentative subdivision map, as well as updates in response to comments provided during the public comment period (including this comment letter provided by the SMAQMD). Based on the revised settings, the remodeled CalEEMod outputs do not show that reactive organic gas (ROG) or VOC emissions exceed the SMAQMD thresholds of significance. This difference in results between the SMAQMD's modeling and the modeling included in this Final EIR is likely primarily due to the use of the average regional VOC content for architectural coating as described in Response F-5 and the continued use of the 29.1% reduction in the consumer products emissions factor as described in Response F-6 differences. See the updated CalEEMod modeling results provided in Chapter 3.0, Revisions, for further detail.

Response F-8: The commenter recommends that the measures in SMAQMD's Guidance for Construction GHG Emissions Reductions should be included as mitigation because construction GHG emissions will exceed SMAQMD thresholds, the measures in SMAQMD's Guidance for Construction GHG Emissions Reductions should be included as mitigation, noting that operational GHGs are significant including the construction GHG emissions guidance would provide for more solidly admissible GHG impact mitigation.

Based on this comment, SMAQMD's *Guidance for Construction GHG Emissions Reductions* and SMAQMD's Basic Construction Emission Control Practices (BCECP) have been incorporated as mitigation under Draft EIR Section 3.6, Impact 3.6-1 (see Chapter 3.0, Revisions, for further detail).

[3] It should be noted that two reduction adjustments are multiplicative. That is, the total reduction of 29.1% was derived by reducing the default consumer general products emission factor of 0.0000214 g/L by the first factor of 12.9% (this results in a partially modified factor of 0.00001864 g/L), and then reducing this partially modified factor of 0.00001864 g/L by the second factor of 18.6% (ultimately resulting in a factor of final adjusted factor of 0.000015173 g/L). This multiplicative approach is appropriate because the two reduction factors 12.9% and 18.6% are dependent on each other. This is because the reduced VOC consumer general products emissions factor, which reduces emissions per person by 12.9%, relies on a reduced number of assumed persons – by 18.6% - as provided by the second factor, when compared to the CalEEMod default consumer general products emission factor).

Moreover, Mitigation Measures 3.6-1 and 3.6-2 requires the Project to follow best management practices (BMPs) for reducing GHG and criteria air pollutant emissions from construction projects, which would also reduce criteria pollutant emissions. This would further reduce construction related emissions beyond what was reported in the DEIR. No further comment is warranted.

Response F-9: The commenter indicates that SMAQMD's Basic Construction Emission Control Practices (BCECP), available on their website, should be explicitly included as mitigation for construction criteria pollutant emissions, noting that construction criteria pollutant emissions were modeled incorporating best management practices, and including BCECP will help ensure that emissions that are projected in the Draft EIR reflect actual conditions to the greatest extent possible.

The construction emissions discussed under Draft EIR Section 3.2, Impact 3.2-1 were modeled incorporating best management practices as discussed on page 3.2-34 of the Draft EIR. To ensure that the best management practices, including the recommended BCECP, are adhered to throughout Project construction, Mitigation Measure 3.6-2 has been added to the Draft EIR, as shown in Chapter 3.0, Revisions, of this Final EIR. It is noted that SMAQMD's BCECP include measures beyond those modeled in CalEEMOD and would further reduce construction-related emissions beyond what was reported in the Draft EIR.

Response F-10: The commenter requests that more recent guidance is referenced under the analysis of the Project's potential to expose sensitive receptors to toxic air contaminants. The commenter states correctly that the analysis within the DEIR references the California Air Resources Board (CARB) *Air Quality and Land Use Handbook*. The commenter requests that that the DEIR also reference the CARB's 2017 *Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways*. Therefore, we have updated the Drat EIR to include a reference to the more recent CARB document (the CARB's 2017 *Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways*). It is noted that the Project is not located near a high-volume roadway. See Chapter 3.0, Revisions, for detail on the specific changes made to reflect this comment.

Response F-11: The commenter provides closing remarks and indicates that all projects are subject to SMAQMD rules and regulations at the time of construction. This comment is noted and does not necessitate any revision to the Draft EIR.

Powering forward. Together.

SMUD®

Sent Via E-Mail

September 27, 2019

June Cowles
City of Rancho Cordova
2729 Prospect Park Drive
Rancho Cordova, CA 95670

Subject: The Ranch / DEIR / 2018072011

Dear June Cowles,

The Sacramento Municipal Utility District (SMUD) appreciates the opportunity to provide comments on the Draft Environmental Impact Report (DEIR) for the Carli Expansion Mining Use Permit Amendment (Project, SCH 2018072011). SMUD is the primary energy provider for Sacramento County and the proposed Project area. SMUD's vision is to empower our customers with solutions and options that increase energy efficiency, protect the environment, reduce global warming, and lower the cost to serve our region. As a Responsible Agency, SMUD aims to ensure that the proposed Project limits the potential for significant environmental effects on SMUD facilities, employees, and customers. G-1

It is our desire that the Project DEIR will acknowledge any Project impacts related to the following:

- Overhead and or underground transmission and distribution line easements. Please view the following links on smud.org for more information regarding transmission encroachment:
  - https://www.smud.org/en/Business-Solutions-and-Rebates/Design-and-Construction-Services
  - https://www.smud.org/en/Corporate/Do-Business-with-SMUD/Land-Use/Transmission-Right-of-Way G-2
- Utility line routing
- Electrical load needs/requirements
- Energy Efficiency
- Climate Change
- Cumulative impacts related to the need for increased electrical delivery
- The potential need to relocate and or remove any SMUD infrastructure that may be affected in or around the project area

SMUD CSC | 6301 S Street | P.O. Box 15830 | Sacramento, CA 95852-0830 | 1.888.742.7683 | smud.org

More specifically, SMUD would like to have the following details related to the electrical infrastructure incorporated into the project description:

- The DEIR acknowledges the need for electricity. Infrastructure, specifically, transformers that will service this project in addition to neighboring buildings will be required and any existing infrastructure will need to be maintained if areas are developed/redeveloped.
- There are plans of the area to be developed; therefore, there are existing SMUD distribution (12kV), sub-transmission (69kV), and transmission (230kV) facilities within The Ranch project that will need to be maintained if areas are developed/redeveloped.
- Service to this project will require underground facilities throughout the development and may require temporary closure for installment.
- Distribution substations are anticipated in the vicinity of this project.
- No additional sub-transmission routes are anticipated.
- Existing transmission, sub-transmission and distribution line traverses the project site.
- Name correction on page 3.7-1, Section 4.7, from "Sacramento Metropolitan Utilities District" to "Sacramento Municipal Utility District."

G-3

SMUD would like to be involved with discussing the above areas of interest as well as discussing any other potential issues. We aim to be partners in the efficient and sustainable delivery of the proposed Project. Please ensure that the information included in this response is conveyed to the Project planners and the appropriate Project proponents.

Environmental leadership is a core value of SMUD and we look forward to collaborating with you on this Project. Again, we appreciate the opportunity to provide input on this DEIR. If you have any questions regarding this letter, please contact SMUD's Environmental Management Specialist, Jerry Park, at jerry.park@smud.org or 916.732.7406.

G-4

Sincerely,

Nicole Goi
Regional & Local Government Affairs
Sacramento Municipal Utility District
6301 S Street, Mail Stop A313
Sacramento, CA 95817
nicole.goi@smud.org

Cc: Jerry Park

Response to Letter G: Sacramento Municipal Utility District

Response G-1: This comment serves as an introduction to the comment letter and does not warrant a response. This comment is noted. No further response is necessary.

Response G-2: The commenter requests that the Draft EIR acknowledge any Project impacts related to the following:

- Overhead and or underground transmission and distribution line easements.
- Utility line routing
- Electrical load needs/requirements
- Energy Efficiency
- Climate Change
- Cumulative impacts related to the need for increased electrical delivery
- The potential need to relocate and or remove any SMUD infrastructure that may be affected in or around the project area

The overhead and underground transmissions and distribution line easements are discussed throughout the Draft EIR, including but not limited to, Chapter 2.0 (Project Description), Section 3.7 (Hazards and Hazardous Materials), and 3.9 (Land Use). Electrical usage, energy efficiency, and climate change are discussed in Section 3.6 (Greenhouse Gases, Climate Change, and Energy). It is noted that the materials referenced by the commenter related to transmission encroachment were reviewed as part of the preparation of Section 3.9 (Land Use) of the Draft EIR, with the requirements of the SMUD Transmission Guide identified in the Regulatory Framework discussion and analysis of the Project's consistency with the Guide discussed under Impact 3.9-1 (see Electrical Transmission Line Regulations discussion on Draft EIR pages 3.9-13 and 3.9-14).

All cumulative impacts are discussed in Chapter 4.0, Other CEQA-Required Topics. As discussed on pages 4.0-4 through 4.0-6, the Project does not have any peculiar or unique components that would result in a contribution to cumulative impacts that would be greater than those analyzed for the Project site as part of the General Plan EIR; the Project proposes fewer residential units and comparable developed acreage when compared to the assumptions for the Project site evaluated in the General Plan EIR. The Rancho Cordova General Plan EIR determined that implementation of the General Plan, including buildout of the General Plan Planning Area, would result in less than cumulatively considerable cumulative impacts related to electrical, telephone, and cable services. Because the Project does not have any peculiar or unique components that would result in a contribution to cumulative impacts that would be greater than those analyzed for the Project site as part of the General Plan EIR, and because the Project proposes fewer residential units and comparable developed acreage when compared to the assumptions for the Project site evaluated in the General Plan EIR, the Project would not result in increased impacts to this cumulative topic.

The Project is not anticipated to require the relocation or removal of any SMUD infrastructure. No revision to the Draft EIR is warranted in response to this comment.

Response G-3: The commenter requests the following details related to the electrical infrastructure:

- The DEIR acknowledges the need for electricity. Infrastructure, specifically, transformers that will service this project in addition to neighboring buildings will be required and any existing infrastructure will need to be maintained if areas are developed/redeveloped.

- There are plans of the area to be developed; therefore, there are existing SMUD distribution (12kV), sub-transmission (69kV), and transmission (230kV) facilities within The Ranch project that will need to be maintained if areas are developed/redeveloped.
- Service to this project will require underground facilities throughout the development and may require temporary closure for installment.
- Distribution substations are anticipated in the vicinity of this project.
- No additional sub-transmission routes are anticipated.
- Existing transmission, sub-transmission and distribution line traverses the project site.
- Name correction on page 3.7-1, Section 4.7, from "Sacramento Metropolitan Utilities District" to "Sacramento Municipal Utility District."

Infrastructure for electricity, including electrical lines and transformers, would be provided and maintained on-site. Underground facilities and/or distribution substations that are or would likely be required for the Project would be provided in coordination with Project construction. The existing SMUD transmission facilities will be maintained in areas that would be developed as part of the Project and are shown on the Tentative Subdivision Map. The proposed uses in the immediate vicinity of the existing SMUD facilities include the protected preserve area, drainage areas, and open space areas, including open space areas proposed for passive recreation uses. As previously described, the overhead and underground transmissions and distribution line easements are discussed throughout the Draft EIR, including but not limited to, Chapter 2.0 (Project Description), Section 3.7 (Hazards and Hazardous Materials), and 3.9 (Land Use). The Project's need for electricity, as well as energy-efficiency and potential impacts associated with climate change, are addressed in Chapter 2.0 (Project Description) and Section 3.6 (Greenhouse Gases, Climate Change, and Energy) of the Draft EIR.

Additionally, the requested name correction is shown in Chapter 3.0 of this Final EIR.

Response G-4: The commenter notes that SMUD would like to be involved in discussing the areas of interest outlined in Comments G-2 and G-3, and that information included in this response is conveyed to the SMUD project planners and appropriate project components. This comment is noted. As requested, the information in this response letter will be conveyed to SMUD. This comment serves as a conclusion to the comment letter. No further response is necessary.

MIWOK MAIDU United Auburn Indian Community of the Auburn Rancheria

Gene Whitehouse, Chairman | John L. Williams, Vice Chairman | Calvin Moman, Secretary | Jason Camp, Treasurer | Gabe Cayton, Council Member

RECEIVED
SEP 16 2019
BY:

September 10, 2019

June Cowles
City of Rancho Cordova
2729 Prospect Park Dr
Rancho Cordova, CA 95670

Subject: Notice of Availability of the Draft Environmental Impact Report for The Ranch Residential Development, Rancho Cordova, California

Dear June Cowles,

Thank you for providing notification of the Draft Environmental Impact Report regarding the above referenced project. The United Auburn Indian Community (UAIC) of the Auburn Rancheria is comprised of Miwok and Southern Maidu (Nisenan) people whose tribal lands are within Placer County and whose areas of interest based on past lifeways extend into El Dorado, Nevada, Placer, Sacramento, Sutter, and Yuba counties. The UAIC is concerned about development within its traditional territory that has potential to impact the lifeways, cultural sites, and landscapes that may be of historic, ceremonial, or tribal significance. We appreciate the opportunity to comment on this and other projects in UAIC's geographic area of cultural affiliation.

The Cultural and Tribal Cultural Resources section of the DEIR indicates that no Native American resources were observed in the Project area and that UAIC closed consultation, requested that the Tribe be informed of any changes to the Project, and to be contacted if any tribal cultural resources are discovered in the Project area during ground disturbing activities.

H-1

After reviewing the Draft Environmental Impact Report (DEIR), the following portion of Mitigation Measure 3.4-2 is incorrect and should be revised: *Mitigation Measure 3.4-2: The coroner shall make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.*

Pursuant to **California Code of Regulations (CCR), Title 14, Chapter 3, 15064.5 (e),** the coroner does not make recommendations for the treatment or disposing of human remains and associated grave goods. **The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code (PRC) Section 5097.98 (CCR 15064.5 (e) (3)).**

H-2

Tribal Office 10720 Indian Hill Road Auburn, CA 95603 (530) 883-2390 FAX (530) 883-2380

MIWOK MAIDU United Auburn Indian Community of the Auburn Rancheria

Gene Whitehouse, Chairman | John L. Williams, Vice Chairman | Calvin Moman, Secretary | Jason Camp, Treasurer | Gabe Cayton, Council Member

Please refer to the cited chapter above in the CCR and the PRC for the legal language and actions to take if Native American Human Remains are encountered. Thank you again for taking these matters into consideration, and for involving the UAIC in the planning process. Please contact Anna M. Starkey, Cultural Regulatory Specialist, at (916) 251-1565 or email at astarkey@auburnrancheria.com if you have any questions. H-3

Sincerely,

Gene Whitehouse,
Chairman

CC: Matthew Moore, Tribal Historic Preservation Officer

Tribal Office 10720 Indian Hill Road Auburn, CA 95603 (530) 883-2390 FAX (530) 883-2380

Response to Letter H: United Auburn Indian Community of the Auburn Rancheria

Response H-1: This comment serves as an introduction to the comment letter. This comment is noted. The commenter also notes that the Cultural and Tribal Resources section of the Draft EIR indicates that no Native American resources were observed in the Project area, and that the United Auburn Indian Community closed consulting, requested that the Tribe be informed of any changes to the Project, and requested to be contacted if any tribal cultural resources are discovered during Project construction. These requirements are included in Mitigation Measure 3.4-1 in Section 3.4 (Cultural and Tribal Cultural Resources) of the Draft EIR. No further response is necessary.

Response H-2: The commenter includes requested revisions to Mitigation Measure 3.4-2 of the Draft EIR pertaining to who makes the recommendation for treatment and disposal of human remains and grave goods. See Chapter 3.0, Revisions, of this Final EIR for the requested revisions to this mitigation measure. It is noted that an additional revision was made to Mitigation Measure 3.4-2 to clarify that both the Native American Heritage Commission and the Shingle Springs Band of Miwok Indians shall be contacted if human remains are discovered that are Native American in origin.

Response H-3: This comment serves as a conclusion to the comment letter and no further response is necessary. This comment is noted.

WALKSACRAMENTO

10/1/2019 VIA EMAIL

June Cowles, Senior Planner
City of Rancho Cordova Planning Department
2729 Prospect Park Drive
Rancho Cordova, CA 95670

RE: Draft Environmental Impact Report for The Ranch Project (SCH # 2018072011)

Dear Ms. Cowles:

Thank you for providing WALKSacramento with the opportunity to comment on the Draft Environmental Impact Report for The Ranch project. We have reviewed the DEIR for its analysis of walking and biking impacts and mitigations. I-1

Impact 3.6-2: The Project has the potential to generate operation-related GHGs, either directly or indirectly, that may have a significant effect on the environment (Less than Significant with Mitigation)

The DEIR concludes that the sustainability features and other details of the Project mitigate GHG emissions to a less than significant level. The DEIR states that the sustainability features and Project details that contribute to the GHG emission reductions are detailed in Chapter 2.0, Project Description. There are nine sustainability features listed in the chapter and there are sections describing land uses and circulation, but there doesn't seem to be any sustainability features or project details that explain the efficacy of the mitigations. The individual contributions to GHG emissions reduction for each measure are also not stated. I-2

Mitigation Measure 3.6-1 The Ranch GHG Reduction Plan

LUT-9 Improve Walkability Design: Walkable Street Network This reduction measure states the project "is designed with a walkable street pattern, 123.53 intersections per square mile, multiple bicycle/pedestrian connections, an off-street trail system, and bicycle lanes to encourage walkability." The DEIR indicates that intersections per square mile was the only parameter used to model the project's reduction in GHG emissions. We question whether intersections per square mile figure that was used is appropriate and if it accurately reflects a walkable and bikeable street pattern, though. I-3

The Ranch is composed of three major areas – the single-family residential Parkview, the gated active-adult single-family and multi-family Four Seasons, and the commercial and multi-family Gateway. The street patterns in Parkview and Four Seasons are similar, but the I-4

909 12th Street, Suite #203 • Sacramento, CA 95814 • 916-446-9255
www.walksacramento.org

gating of Four Season will have a significant impact on vehicular and pedestrian circulation. While residents of Four Seasons will have be able to walk throughout both the Four Seasons and Parkview communities, residents of Parkview will be unable to use the street and trail network within Four Seasons. Further, Parkview residents and all other people outside of Four Seasons will be able to walk or bike around only three sides of the Four Seasons community. I-4 cont'd

The difference in connectivity and street network for the two groups of people, those living in Four Seasons and those not living in Four Seasons, suggests that a single measurement of walkable design, i.e. intersections per square mile, will not accurately model the GHG emissions reduction resulting from reduced VMT and corresponding increase in walking and biking.

LUT-4 Improve Destination Accessibility: Project close to regional employment or destination center

This reduction measure is based on the expected reduction of GHG emissions due to fewer miles driven to a downtown or major job center as compared to a typical ITE suburban development. The contribution of replacing auto trips with bicycling will be reduced by the diminished connectivity that results from gating nearly half of the project. The LUT-4 modeling should take this into account and the DEIR should include an explanation of the calculations. I-5

SDT-1 Improve Pedestrian Network: On-site pedestrian access network links all of project internally and externally

The DEIR makes the same statement of applicability for improving the pedestrian network as it does for improving the walkable design. As with LUT-9, the measure's efficacy is diminished by the two different project-wide pedestrian/bike networks – one for Four Seasons residents and one for all others. Barriers are increased, rather than minimized, by the gated community. I-6

SDT-2 Provide Traffic Calming Measures: Projects streets and intersections feature traffic calming features

The DEIR doesn't provide the percentage of streets and intersections with traffic calming improvements, nor does it identify the improvements. I-7

Mitigation Measure 3.13-2: Intersection #9, Grant Line Road at Sunrise Boulevard

This measure would restripe the southbound approach at the intersection. The restriping is described as having hatching and being consistent with Optional Through Right and Right-Turn-Only lane configuration included in Figure 9C-4a (CA) of the California MUTCD. The referenced configuration doesn't have any hatching and may be inappropriate for all but the most experienced and fearless bicyclists. We suggest that the I-8

909 12th Street, Suite #203 • Sacramento, CA 95814 • 916-446-9255
www.walksacramento.org

configuration on sheet 2 of Figure 9C-4a would provide a safer environment for bicyclists as it has a hatched buffer between the bike lane and one travel lane. I-8 cont'd

WALKSacramento is working to support increased physical activity such as walking and bicycling in local neighborhoods as well as helping to create community environments that support walking and bicycling. The benefits include improved physical fitness, less motor vehicle traffic congestion, better air quality, and a stronger sense of cohesion and safety in local neighborhoods. I-9

Sincerely,

Chris Holm
Project Analyst

909 12th Street, Suite #203 • Sacramento, CA 95814 • 916-446-9255
www.walksacramento.org

Response to Letter I: WALKSacramento

Response I-1: This comment serves as an introduction to the comment letter and does not warrant a response. This comment is noted. No further response is necessary.

Response I-2: The commenter notes that there are nine sustainability features and Project details that contribute to the greenhouse gas (GHG) emissions reductions. The commenter also notes that the efficacy of the features and Project details are not explained, and the individual contributions to GHG emissions reduction for each measure are not stated.

See Response F-2 regarding Project features that reduce or minimize impacts and quantification of individual measures.

As described under Response F-2, the California Emissions Estimator Model (CalEEMod) (v.2016.3.2) is the modeling tool utilized to develop the quantification of Project emissions estimates (including for both the unmitigated and mitigated scenarios). The reductions in GHG emissions that occur from implementation of the Project features and additional mitigation measures (as described in Draft EIR *Section 3.6 (Greenhouse Gases, Climate Change, and Energy*) and listed in Draft EIR Table 3.6-8) have been calculated using CalEEMod based on the SMAQMD Guidance document (i.e. SMAQMD's *Guide to Air Quality Assessment in Sacramento County*) as well as the *SMAQMD's Sacramento Metropolitan Air Quality Management District Tips for Using CalEEMod*, and through early phone correspondence with the SMAQMD (Molly Wright, Air Quality Planner Analyst).

CalEEMod relies on calculations from a guidance document entitled *Quantifying Greenhouse Gas Mitigation Measures* (2010), developed by the California Air Pollution Control Officers Associated (CAPCOA). CAPCOA is an Association of Air Pollution Control Officers representing all thirty-five local air quality agencies throughout California. The calculations provided within this guidance document provide the basis for the calculations utilized by CalEEMod when modeling project emissions reductions based on project features and/or via mitigation. The following project features were included in the emissions modeling (via CalEEMod) for the Project, with parameters for modeling identified, and with the specific CAPCOA measure identified in the *Quantifying Greenhouse Gas Mitigation Measures* (2010 identified in brackets:

- Density to 6.66 dwelling units per acre (1,690 dwelling units divided by 253.87 residential acres (gross). [Traffic Mitigation, LUT-1];
- Improve walkability design (a ratio of 144.9 intersections per square mile, as shown on the Tentative Subdivision Map.) [Traffic Mitigation, LUT-9];
- Increase transit accessibility (Project site would include on-site transit facilities for the City's Signature Transit Route as identified in the SPA Handbook) – average distance to transit for Project residents would be approximately 0.25 miles.) [Traffic Mitigation, LUT-5];
- Improve pedestrian network (Project site and connecting off-site. The Project would include pedestrian improvements that provide connectivity between the internal components of the Project, as well as to adjacent existing and future developments. The Project would provide for future connections to an extension of Chrysanthy Boulevard and planned development east of the Project site, a connection to an existing trail located north of the site, connections south of the site via a pedestrian connection at North Campus Road, and connections to the existing and future uses to the west of the site.) [Traffic Mitigation, SDT-1];

- Provide traffic calming measures (50% of streets and intersections with improvements as shown on the Tentative Subdivision Map and identified in the SPA Handbook. Traffic calming features incorporated into the Project include street design features, such as narrower streets, limited single-loaded streets, parking on both sides of the street, posted speed limit signs, planter strips with street trees, and horizontal shifts (lane centerline that curves or shifts), and intersection traffic calming features, including marked crosswalks, count-down signal timers where appropriate, curb extensions, channelization islands, median islands, and tight corner radii.) [Traffic Mitigation, SDT-2];
- Install electric vehicle (EV) charging stations throughout the Project site, such that at least 50% of single-family residences and 5% of parking spaces within the commercial, park and recreation, and multi-family land uses will have EV charging stations, as identified in the SPA Handbook. [Traffic Mitigation SDT-3];
- Expand transit network; the Project will provide a transit stop as provided in the SPA Handbook. [Traffic Mitigation, TST-3];
- Plant a minimum of 2,240 new trees throughout the Project site [4.11.2-Sequestration];
- No hearths, as recommended by the SMAQMD in the *SMAQMD Tips for Using CalEEMod* (February 2019.) [Area Mitigation];
- Use low-VOC paint for architectural coatings (75 EF g/L) (Note: this VOC value represents the average VOC level for architectural coatings in the SMAQMD jurisdiction, as provided via correspondence with the SMAQMD.);
- Install energy efficient (i.e. LED or better lighting) for all outdoor lighting, as identified in the SPA Handbook [Energy Mitigation, LE-1];
- Generate 95% or more of electricity via renewable energy (on-site energy generation and/or contract with SMUD) [Energy Mitigation, AE-1, AE-2, AE-3], as identified in the SPA Handbook.;
- Install energy efficient *(i.e. Energy Star)* appliances [Energy Mitigation, BE-4] , as identified in the SPA Handbook.;
- Install low-flow appliances (bathroom faucet, kitchen faucet, toilet, and shower) [Water Mitigation, WUW-1] , as identified in the SPA Handbook.;
- Use water-efficient irrigation systems (automatic rain shut-off, maximum gallon per minute restriction, WiFi connectivity), as identified in the SPA Handbook [Water Mitigation, WUW-4]; and
- Minimize turf for residential uses to 70% less than the maximum allowed turf area, as identified in the SPA Handbook. [Water Mitigation, WUW-5].

Furthermore, the following additional mitigation measures were incorporated into mitigation within the modeling:

- Implement Trip Reduction Program (100% of employees eligible; voluntary) [Traffic Mitigation, TRT-1 and TRT-2];
- Exceed Title 24 (2% improvement) [Energy Mitigation, BE-1]; and
- Apply Water Conservation Strategy (25% reduction in outdoor water consumption) [Water Mitigation WUW-2].

The efficacy of the sustainability features and Project components described in Draft EIR Chapter 2.0 (Project Description) is quantified in aggregate in Section 3.2 (Air Quality) and Section 3.6 (Greenhouse Gases, Climate Change, and Energy) of the Draft EIR. Quantification of individual GHG reduction measures is not feasible, given that the modeling tool (CalEEMod) quantifies the impact of each mitigation measure internally within the model, and modeling outputs do not provide

results identifying the individual reduction impact of each mitigation measure. Rather, emission results are provided for each scenario in aggregate.

See Chapter 3.0, Revisions, of this Final EIR for further detail on the revisions made to the modeling of emissions to reflect public comments as well as the update to Project description, including modifications to the tentative subdivision map and SPA Handbook, since publication of the DEIR as well as additional information provided regarding the various Project features and mitigation applied to the Project under Mitigation Measure 3.6-2. No further response is required.

Response I-3: The commenter questions if the LUT-9 reduction measure is appropriate for the Project and whether the Project reflects a walkable and bikeable street pattern. The commenter also notes that the Draft EIR indicates that intersections per square mile was the only parameter used to model the Project's reduction in GHG emissions.

As shown on page 3.6-31 of the Draft EIR, LUT-9 applies to the Project because the Project is designed with a walkable street pattern, with 144.9 intersections per square mile, multiple bicycle/pedestrian connections, including bicycle/pedestrian-only connections between streets (i.e., at the end of cul-de-sacs) and to trails, an off-street trail system, and bicycle lanes. Intersections per square mile (144.9) is used as one of the CalEEMod inputs (also known as "mitigation" in CalEEMod). This measure corresponds to LUT-9/3.1.9 (Improve Design of Development) identified in the California Air Pollution Control Officers Association's Quantifying Greenhouse Gas Mitigation Measures (CAPCOA Quantification Guide), which provides the methodology used to determine the appropriate reductions for this measure and identifies intersections per square mile as the appropriate input for determining reductions. The only possible input that corresponds to the "Improve Walkability Design" (LUT-9) mitigation in CalEEMod is to enter the number of proposed intersections per square mile, which is consistent with the CAPCOA Quantification Guide's supporting methodology. While the only parameter used to model the LUT-9 GHG reduction available is the intersections per square mile parameter, the Project receives credit for the LUT-9 reduction measure due to the walkable street pattern, off-street trail system and bike lanes, in addition to the CalEEMod-required input of intersection per square mile.

Response I-4: The commenter notes that the Project has three major areas – single-family, age-restricted, and commercial and multifamily. The single-family area and age-restricted non-gated area have similar street patterns, while the gating of Four Seasons would result in significant impacts on circulation. The commenter also notes that residents of the single-family Parkview area would not be able to use the street and train network within Four Seasons and would not be able to walk or bike around one of the four sides of the Four Seasons community. The commenter concludes that the difference in street network suggests that intersections per square mile will not accurately model the GHG emissions reduction resulting from reduced vehicle-miles-travelled (VMT) and corresponding increase in walking and biking.

The commenter is referred to the tentative subdivision map (Draft Figure 2.0-4 as shown in Chapter 3.0, Revisions, of this Final EIR). As shown on the tentative subdivision map, the villages associated with the age-restricted neighborhood will not serve as a barrier between the non-age-restricted community and the various features of the Project, such as the public parks, public open space, and public trail, nor would the age-restricted community separate the non-age-restricted community from off-site community services or amenities, as lands to the south and east of the

Project are currently undeveloped. It is also noted that the pedestrian gates for the age-restricted community are not proposed to be limited to use by the residents of the age-restricted community.

Please see Response I-3. As stated, LUT-9 applies to the Project because the Project is designed with a walkable street pattern, with 144.9 intersections per square mile, multiple bicycle/pedestrian connections, an off-street trail system, and bicycle lanes to encourage walkability. While the only parameter used to model the LUT-9 GHG reduction available is the intersections per square mile parameter, both the age-restricted and non-age-restricted component have a range of walkable features, including a high ratio of intersections as well as many pedestrian connections, such as pedestrian-only connections at the end of cul-de-sacs to either adjoining streets or trails, alleys that provide direct connection to landscaped areas and pathways, the bicycle/pedestrian undercrossing allowing the open space trail users to go under Chrysanthy Boulevard rather than crossing the road, and pedestrian-activated push button crossings along Chrysanthy Boulevard and Rancho Cordova Parkway. Further, as described previously, the age-restricted community does not serve as a barrier to the non-age-restricted components of the Project in terms of accessing public Project destinations and off-site destinations. LUT-9 is appropriately applied to the Project and no revision to the Draft EIR is warranted.

Response I-5: The commenter notes that the LUT-4 reduction measure is based on the expected reduction of GHG emissions due to fewer miles driven to downtown or a major job center. The commenter also notes that the contribution of replacing auto trips with bicycling will be reduced by the diminished connectivity that results from gating nearly half of the Project. The commenter concludes that the LUT-4 modeling should take this into account and the Draft EIR should include an explanation of the calculations.

According to the CAPCOA Quantification Guide, measure LUT-4 applies to areas with high accessibility to destinations. The CAPCOA Quantification Guide also notes that this reduction measure is appropriate for residential, retail, office, industrial, and mixed use projects in urban and suburban contexts. However, we have updated the CalEEMod modeling to remove inclusion of measure LUT-4. Therefore, the updated modeling results no longer reflect inclusion of LUT-4 in air quality and greenhouse gas emissions and energy modeling. No further response is required.

Response I-6: The commenter notes that the effectiveness of the SDT-1 reduction measure is diminished by the two project-wide pedestrian and bicycle networks (one for Four Seasons residents and one for all others). The commenter notes that barriers would be increased, rather than minimized, by the gated community. Please see Responses I-3 through I-5. SDT-1 is used for projects which provide a pedestrian access network to link areas of the Project site encouraging people to walk instead of drive. Project residents of the non-gated and gated areas would be able to walk to nearby commercial and retail opportunities (existing and planned, on and off-site). Residents of the non-age-restricted villages would be able to access lands (when developed in the future) beyond the age-restricted component via Chrysanthy Boulevard, which provides a direct pedestrian connection to the east, via the public trail adjoining the age-restricted community, which provides additional off-site points of access to the south and east. This reduction measure is appropriate for residential, retail, office, industrial, and mixed use projects in urban, suburban, and rural contexts. The Project would provide pedestrian network improvements on-site and connecting to the existing and future pedestrian network of the southern Rancho Cordova area. Therefore, this measure is appropriate for the Project and no changes to the Draft EIR are warranted.

Response I-7: The commenter notes that the Draft EIR does not provide the percentage of streets and intersections with traffic calming improvements, nor does it identify the improvements. As noted on page 3.6-25, 50 percent of the Project streets and intersections are proposed with traffic-calming measures. As discussed on pages 3.6-31 and 3.6-32 of Section 3.6 of the Draft EIR, the Project has been designed to include a range of traffic-calming street design features, such as narrower streets, limited single-loaded streets, parking on both sides of the street, posted speed limit signs, planter strips with street trees, bulb-outs, and horizontal shifts (lane centerline that curves or shifts), and intersection traffic calming features, including pedestrian push-buttons at three intersections, marked crosswalks, count-down signal timers where appropriate, curb extensions, channelization islands, median islands, and tight corner radii. Many of these measures (street widths, planter strips, medians, bulb-outs, and horizontal shifts) are associated with the Project design as shown on the tentative subdivision map and traffic-calming measures are also described in the SPA Handbook. Therefore, this measure is appropriate for the Project and no changes to the Draft EIR are warranted.

Response I-8: The commenter notes that Mitigation Measure 3.13-2 (Intersection #9, Grant Line Road at Sunrise Boulevard) would restripe the southbound approach at this intersection, which is described as having hatching and being consistent with Optional Through Right and Right-Turn-Only lane configurations. According to the commenter, this configuration does not have any hatching and may be inappropriate for all but the most experienced and fearless bicyclists. The commenter suggests that the configuration on sheet 2 of Figure 9C-4a would provide a safer environment for bicyclists as it has a hatched buffer between the bike land and one travel lane. See Chapter 3.0, Revisions, of this Final EIR. The term "hatching" has been revised to be consistent with Figure 9C-4a, which shows that striping (not hatching) should be provided at the bike lane area for right-turn automobile lanes. It is also noted that the Project applicant did not propose this improvement/mitigation measure. Instead, this improvement is planned by the City, and the applicant would pay the fair share for this planned improvement as described in Mitigation Measure 3.13-2 as revised.

Response I-9: The commenter provides closing remarks. This comment serves as a conclusion to the comment letter and does not require a response.

Members of the Board:
Beth Albiani
Nancy Chaires Espinoza
Carmine S. Forcina
Chet Madison, Sr.
Dr. Crystal Martinez-Alire
Anthony "Tony" Perez
Bobbie Singh-Allen

Susan Bell
Chief Facilities Officer
Facilities and Planning

Robert L. Trigg Education Center
9510 Elk Grove-Florin Road, Elk Grove, CA 95624

(916) 686-7711
FAX: (916) 686-7754

September 27, 2019

June Cowles, Senior Planner
City of Rancho Cordova Planning Department
2729 Prospect Park Drive
Rancho Cordova, CA 95670

Dear Ms. Cowles:

The Elk Grove Unified School District (EGUSD) appreciates the opportunity to review and comment on the Draft Environmental Impact Report (DEIR) for The Ranch Project.

The Ranch Project would entail development of residential and commercial land uses on approximately 528 acres south of Douglas Road and west of Grant Line Road, within the city of Rancho Cordova. The entire project is within the boundaries of the EGUSD. The project requires approval by the City of Rancho Cordova City Council of the following documents: a Project EIR, General Plan Amendment and a Rezone Amendment for a Special Planning Area, a Development Agreement, a Large and Small Lot Map, and a Tentative Subdivision Map. J-1

EGUSD requests that the following comments be considered and included in the Final Environmental Impact Report (EIR).

Correction to Page 3.7-20:
Please note that Impact 3.7-3 has an incorrect statement. This section states "The Project is not located within one-quarter mile of an existing or proposed school…". However, EGUSD has a proposed 70-acre high school/middle school campus directly to the south of this Project. North Campus Road will run along the southern boundary of the age-restricted community-portion of this project and the high school/middle school will be on the other side of this road. J-2

Correction to Page 3.12-4:
Please note that the first paragraph in the section states the EGUSD "has been in existence for over 41 years. EGUSD has been in existence since 1959, over 60 years. J-3

Corrections to Page 3.12-5 and 6:
The paragraph at the bottom of page 3.12-5 and at the top of page 3.12-6 contains several inaccuracies. The paragraph follows with corrections/clarification in red. J-4

Elk Grove Unified School District—Excellence by Design

The EGUSD building program is funded by approximately 50% state and 50% local sources. The district ~~can receive~~ receives local funding through developer impact fees, and tax revenues from a Mello-Roos special tax ~~districts,~~ and General Obligation bonds. Developer impact fees provide approximately 40%~~are the major source of funding~~ for ~~the~~ district building projects resulting from growth. Based on its facility needs assessment, EGUSD demonstrated the need to levy Level II developer fees that are higher than the statutory fee. As of ~~July 2018~~ April 2019, Level II fees for residential construction are ~~$5.65~~ $5.94 per square foot and $0.56 per square foot for commercial construction. Developer fees may be used to finance new schools and equipment, and to reconstruct existing facilities to maintain adequate housing for all the district's students. ~~Mello-Roos districts are defined tax areas usually associated with new residential subdivisions, which are often used for additional school taxes.~~ EGUSD's Mello-Roos District covers the entire 320 square miles of the district and proceeds are used throughout the district to help build new schools and modernize older schools.

J-4 cont'd

Correction to Page 3.12-15:
Please correct the second sentence of the last paragraph as follows:
As required by state, law the Project applicant would pay the state-mandated school impact fees to EGUSD. As of ~~August 2018~~ April 2019, Level II fees for residential development are ~~$5.65~~ $5.94 per square foot.

J-5

EGUSD appreciates the City of Rancho Cordova's consideration of the comments and requests in this letter. EGUSD shall coordinate with the City and The Ranch property owners and developers to ensure the future residents of the area are provided with quality school facilities to meet their educational needs.

J-6

Regards,

Kim Williams

Kim Williams
Planning Manager

Elk Grove Unified School District—Excellence by Design

Response to Letter J: Elk Grove Unified School District

Response J-1: This comment serves as an introduction to the comment letter and does not warrant a response. This comment is noted. No further response is necessary.

Response J-2: The commenter notes that Impact 3.7-3 has an incorrect statement, and notes that the Elk Grove Unified School District (EGUSD) has a proposed 70-acre high school/middle school campus south of the Project site. See Chapter 3.0, Revisions, of this Final EIR for the requested revisions to this impact discussion.

Response J-3: The commenter notes that the first paragraph on page 3.12-4 of the Draft EIR states that the EGUSD has been in existence for over 41 years. The commenter notes that EDUSD has been in existence since 1959, over 60 years. See Chapter 3.0, Revisions, of this Final EIR for the requested revisions to this page.

Response J-4: The commenter notes that the paragraph at the bottom of page 3.12-5 and the top of page 3.12-6 contains several inaccuracies. The commenter also includes clarifications regarding this text in red font with strike-through formatting. See Chapter 3.0, Revisions, of this Final EIR for the requested revisions to these pages.

Response J-5: The commenter notes that the second sentence of the last paragraph on page 3.12-15 should be corrected with the April 2019 Level II fees for residential development. See Chapter 3.0, Revisions, of this Final EIR for the requested revisions to these pages.

Response J-6: This comment serves as a conclusion to the comment letter. The City, Project applicant, and School District will continue to coordinate regarding the proposed Project. This comment is noted. No further response is necessary.

This section includes minor edits and changes to the Draft EIR. These modifications resulted from responses to comments received during the public review period for the Draft EIR, as well as City staff initiated edits to clarify the details of the project.

Revisions herein do not result in new significant environmental impacts, do not constitute significant new information, nor do they alter the conclusions of the environmental analysis that would warrant recirculation of the Draft EIR pursuant to State CEQA Guidelines Section 15088.5.

In coordination with staff from the City of Rancho Cordova, the Project applicant team continues to make refinements and minor revisions to the tentative subdivision map. Modifications are described in the revisions to Draft EIR Chapter 2.0, Project Description. None of these minor modifications to the Project would result in new significant impacts or mitigation measures, or increase the severity of an impact. The minor changes made to the Project since the Draft EIR was released for public review are also addressed in the Master Response in Chapter 2.0 of this Final EIR.

Other minor changes to various sections of the Draft EIR are also shown below. These changes are provided in revision marks with underline for new text and ~~strike out for deleted text~~.

3.1 REVISIONS TO THE DRAFT EIR

1.0 INTRODUCTION

No changes were made to Section 1.0 of the Draft EIR.

2.0 PROJECT DESCRIPTION

The following changes were made to pages 2.0-2 and 2.0-3 of Chapter 2.0 of the Draft EIR:

> Consistent with California Environmental Quality Act (CEQA) Guidelines Section 15124(b), a clear statement of objectives and the underlying purpose of the Project shall be discussed. The principal objective of the Project is the approval and subsequent implementation of The Ranch Project. The quantifiable objectives of the Project include development of the approximately 530-acre site with: 1,690~~725~~ residential units, including 705~~37~~ age restricted single-family units, 732~~5~~ non-age restricted single-family units, and up to 253 multifamily units, 38 of which would be age-restricted multifamily units, with a club house for the age-restricted senior community, and other recreational opportunities; dedication of 5.33~~16~~ net acres for commercial use for development of a neighborhood-serving shopping center of approximately 32,000 square feet (s.f.); and dedication of 8.40~~3~~ net acres for multi-family residential uses in accordance with the City of Rancho Cordova's Affordable Housing Plan.

The following changes were made to pages 2.0-4 through 2.0-9 of Chapter 2.0 of the Draft EIR:

> The Project proposes an approximately 530-acre residential community. Development would include approximately 1,690~~725~~ residential units, including 705~~37~~ age restricted single-family units, 732~~5~~ non-age restricted single-family units, and up to 253 multifamily units (38 of which would be age-restricted), two commercial parcels totaling 5.33~~16~~ net acres, a community clubhouse, a park

and trail system, open space, and supporting infrastructure. Figure 2.0-4 depicts the Project characteristics and Table 2.0-1 summarizes the proposed uses.

TABLE 2.0-1: LAND USE SUMMARY

PROPOSED USE	*GROSS ACRES*	*NET ACRES*	*DWELLING UNITS*	*NON-RESIDENTIAL (SQUARE FEET)*	*GROSS DENSITY (DU/AC)*	*NET ACREAGE AS % OF TOTAL*
Single Family Residential – Non-Age Restricted						
Village 1 (60x105)	19.58	14.10	86	-	4.4	2.7%
Villages 2, 3 (50x105)	22.48	15.949	114	-	5.1	3.0%
Village 4 (45x105)	19.05	14.7357	116	-	6.1	2.87%
Villages 5, 6, 7 (45x85)	16.57	11.5110.98	113	-	6.8	2.1%
Village 8 (36x78.5)	14.0211	8.5347	1302	-	9.34	1.6%
Villages 9, 10, 11 (35x78)	23.3762	13.706	1734	-	7.4	2.6%
Subtotal	*115.0741*	*78.5177.87*	*7325*	-	*6.4*	*14.87%*
Single Family Residential – Age Restricted						
Village 12 (60x105)	31.938	19.1127	1172	-	3.75	3.6%
Village 13 (~~varying lot sizes~~60 x 105)	11.6641	6.527.32	4339	-	3.38	1.24%
Villages 14, 15, 17,~~-19~~ (50x105)	37.0443.98	27.2032.2	210256	-	5.78	56.1%
Village 16, 18, 19 (430x105)	20.187.96	6.3715.48	14464	-	8.0	2.91.2%
Villages 18 (40x110)	5.37	4.34	43	-	8.0	0.8%
Village 20,22 (56x70)	217.830	145.9378	14555	-	7.16.6	2.81.1%
Village 21 (~~35x110~~varies)	7.767.93	6.25	5068	-	6.48.6	1.2%
~~Village 22 (56x70)~~	~~14.5~~	~~9.38~~	~~96~~	-	~~6.6~~	~~1.8%~~
Subtotal	*130.4093*	*89.490.91*	*70537*	-	*5.46*	*16.87.1%*
Multifamily Residential						
Village 23	7.147	7.147	215	-	30.10	1.34%
Lot ~~A~~X (Multifamily)	1.26	1.26	38	-	30.0	0.2%
Subtotal	*8.403*	*8.403*	*253*	-	*30.10*	*1.6%*
Commercial						
Villages 24, 25	5.641	5.335.16	-	32,000	-	1.0%
Subtotal	*5.6141*	*5.3316*	-	*32,000*	-	*1.0%*
Parks and Community Facilities						
Park and Recreation Center (Lot A)	~~5.17~~5.69	4.624.19	-	21,000	-	0.98%
Private Park (Lots B-C)	3.30	2.98	-	-	-	0.6%
Public Park (Lot D)	10.96	10.78	-	-	-	2.0%
~~Passive~~ Neighborhood Park~~/Open Space~~ (Lot T)	2.190	2.190	-	-	-	0.42%
Passive Park (Lot U)	1.21	1.21	-	-	-	2.3%
Subtotal	*23.351.53*	*21.780.05*	-	21,000	-	*4.13.6%*
Open Space						
Protected Areas (Lots E-F)[1]	199.1350	199.1350	-	-	-	37.6%
Protected Area / ~~Landscape~~ Drainage Basin (Lots G-~~O~~I)	10.760	26.3710.45	-	-	-	25.0%
Protected Area / Landscape (Lots J-O)	0	14.32				2.7%
Water Quality / Detention (Lots P)	6.11	5.98	-	-	-	1.1%
Open Space (Lots Q-S~~, U~~)	~~14.74~~13.53	~~14.18~~12.97	-	-	-	2.48%
Public Landscape Lot (Lots V-NN~~GGG~~)	-	5.697.75	-	-	-	1.15%
Private Landscape Lot (Lots OO~~HHH-XXX~~DDD)	-	5.562.57	-	-	-	1.0.5%
Subtotal	*~~231.05~~229.53*	*254.106.35*	-	-	-	*48.05%*
Roads						
Private Drive (Lots 1-225)	-	1.10	-	-	-	0.2%
Private Right-of-Way (Lots 236-247)	-	32.30	-	-	-	6.1%
Minor Right-of-Way	-	21.30.59	-	-	-	4.03.9%
Major Right-of-Way[1]	17.7634	17.7634	-	-	-	3.3%

PROPOSED USE	*GROSS ACRES*	*NET ACRES*	*DWELLING UNITS*	*NON-RESIDENTIAL (SQUARE FEET)*	*GROSS DENSITY (DU/AC)*	*NET ACREAGE AS % OF TOTAL*
Subtotal	*17.7634*	*72.461.33*	-	-	-	*13.67%*
TOTAL	**530.10**	**530.10**	**1,690725 (1,43772 SF, 253 MF)**	**53,000**	**6.6677**	**100.0%**

[1]THE TENTATIVE SUBDIVISION MAP (OCTOBER 2019) ACREAGES WERE AMENDED AS FOLLOWS: MAJOR RIGHT-OF-WAY CATEGORY WAS INCREASED BY 0.35 ACRE AND LOT E ACREAGE WAS DECREASED BY 0.35 ACRE TO REFLECT ADDITIONAL RIGHT-OF-WAY FOR RANCHO CORDOVA PARKWAY ANTICIPATED TO BE REQUIRED OF THE PROJECT.

NOTE: THE GROSS ACREAGES SHOWN HERE EXCLUDE RANCHO CORDOVA PARKWAY AND CHRYSANTHY BOULEVARD ONLY. VILLAGE NET ACREAGE EXCLUDES THE PROTECTED AREA/LANDSCAPE LOTS, PRIVATE AND PUBLIC LANDSCAPE LOTS, PRIVATE DRIVES, AND PRIVATE AND PUBLIC RIGHT-OF-WAYS.

RESIDENTIAL

The Project includes three primary residential components: an unrestricted single-family community, an age-restricted community with both single family and multifamily components, and a non-age restricted multifamily parcel.

Single Family – Unrestricted

The single-family community, comprised of Villages 1 through 11, is located in the northwest area of the Project site, abutting residential neighborhoods to the north and Rancho Cordova Parkway to the west. This area would include 7325 single family residences within 11 residential neighborhoods. Village 1 would have 86 residential lots with a typical dimension of 60' by 105'. Villages 2 and 3 would have 114 residential lots with a typical dimension of 50' by 105'. Village 4 would have 116 residential lots with a typical dimension of 45' by 105'. Villages 5, 6, and 7 would have 113 residential lots with a typical dimension of 45' by 85'. Village 8 would have 1302 residential lots with a typical dimension of 36' by 78.5'. Villages 9, 10, and 11 would have 1734 residential lots with a typical dimension of 35' by 78'.

Multifamily – Unrestricted

An 7.147-acre multifamily lot (Village 23) is designated High Density Residential and would accommodate approximately 215 multifamily units.

Single Family and Multifamily – Four Seasons Age-Restricted

The Four Seasons age-restricted single-family community is located in the southeast portion of the Project site, and borders the approved Sunridge Specific Plan to the south and east. The Four Seasons community is separated from the unrestricted single-family community by the wetlands preserve that traverses the Project site from the northeast to the southwest. Village 12 would have 1172 residential lots with a typical dimension of 60' by 105'. Village 13 would have 3943 residential lots with ~~varying lot sizes~~a typical dimension of 60' by 105'. Villages 14, 15, and 17~~, and 19~~ would have 21056 residential lots with a typical dimension of 50' by 105'. Villages 16, 18, and 19 would have 14464 residential lots with a typical dimension of 430' by 105'. ~~Village 18 would have 43 residential lots with a typical dimension of 40' by 110'.~~ Villages 20 and 22 would have 14555 residential lots with a typical dimension of 56' by 70'. Village 21 would have ~~68~~ 50 residential lots with a typical dimension of 4435' by 110'. ~~Village 22 would have 96 residential lots with a typical dimension of 56' by 70'.~~ Additionally, a 21,000 s.f. community clubhouse would be developed in this area. Lot A near the community clubhouse would also allow for 38 multifamily residential units.

COMMERCIAL

Two commercial parcels (Villages 24 and 25) are located in the northwest portion of the site along Rancho Cordova Parkway, near the entrances to the unrestricted single-family community with primary access from from Rancho Cordova Parkway. The parcels are approximately 1.00 and 4.33~~16~~ net acres and would accommodate approximately 32,000 s.f. of commercial uses.

POPULATION AND EMPLOYMENT

The Project would accommodate a population of approximately 4,~~3~~242~~19~~ residents and 106 employees. The Project residents estimate was calculated using the following persons per housing unit rates: 2.84 persons per non-age restricted single-family unit, 2.89 persons per non-age-restricted multifamily unit, 2.08 persons per age-restricted single-family units, and 2.05 persons per age-restricted multifamily units.[1] The Project employees estimate was calculated using a rate of one employee per 500 s.f.[2]

OPEN SPACE

The Project would preserve approximately 199.1~~5~~ acres as a nature preserve that would be deeded to a third-party conservation entity. The Project includes approximately 14.8 acres of existing aquatic resources, including 1.85 acres of depressional seasonal wetlands, 9.97 acres of vernal pools, 1.15 acres of riverine seasonal wetlands, 1.53 acres of intermittent drainages, and 0.30 acres of drainage basin outfalls. The Project applicant would incorporate protections for the preservation of wetland resources within the preserve, including preserve fencing, long-term funding and management of the preserve in perpetuity, and protection of the preserve from drainage and runoff generated from development areas through the construction of several detention basins throughout the site.

RECREATION

Park and recreation facilities totaling ~~20.05~~21.78 acres (7.60~~17~~ net acres of private facilities provided in Lots A, B, and C and 1~~4~~2.1~~8~~8 net acres of public parks provided in Lots D, ~~and~~ T, and U) would be provided by the Project. The Project would use a combination of land dedication and in-lieu fees to comply with the requirements of Chapter 22.40 of the City of Rancho Zoning Ordinance. In addition to the proposed park lots, the Project would provide parks and recreation facilities on approximately 0.2575 acres within Village 23 to serve the proposed multifamily use.

Approximately 2.5 miles of public trails would be developed throughout the Project site, as described below under Pedestrian and Bicycle Connectivity. Trails along the preserve boundaries would be designed in accordance with the South Sacramento Habitat Conservation Plan (SSHCP) standards.

As part of the public recreational facilities, a public park (10.78 net acres) would be provided within the single family (unrestricted) community. The utility corridor would be located along the eastern boundary of the park and would provide an additional 12.97~~7.86~~ net acres of public open space

[1] The persons per housing unit rates are based on the persons per household rates from the 2013-2017 American Community Survey 5-Year Estimates data for the City of Rancho Cordova, California, Table S0102. The American Community Survey includes average household size based on tenure for both the general population and the 60+ year old cohort.

2 Table LU-6 of the General Plan projects 15,026 employees associated with 7,513,133 s.f. of commercial uses under General Plan buildout conditions; these projections yield a rate of 1 employee per 500 s.f. (15,026 divided by 7,513,133 s.f.).

(Lots Q through S) that would include passive uses that would complement the park site. A 2.19-acre ~~passive~~ neighborhood park (Lot T) and 1.21-acre passive park (Lot U) would also be developed in the single family (unrestricted) community.

Within the age-restricted portion of the Project, approximately 7.6017 acres would be dedicated for recreational purposes. The recreation center (4.6219 net acres) would include a clubhouse serving as a recreation, community gathering, activity, and information hub for residents. A separate 1.58-acre community garden (Lot B) and a 1.4-acre linear park (Lot C) would be provided within the age-restricted community. In addition, multiple paseos would be provided throughout the age-restricted community to provide connectivity and off-road walkability.

The following changes were made to pages 2.0-12 through 2.0-15 of Chapter 2.0 of the Draft EIR:

GENERAL PLAN AMENDMENT

The Project site is currently designated Planning Area by the General Plan Land Use Map and is identified as part of the Suncreek/Preserve Planning Area by the City's General Plan. Table 2.0-2 summarizes the proposed General Plan land use designations:

TABLE 2.0-2: GENERAL PLAN LAND USE DESIGNATIONS

LAND USE DESIGNATION	*EXISTING*	*PROPOSED*
Planning Area	530.1	--
Low Density Residential (LDR)	--	31.937
Medium Density Residential (MDR)	--	228.963.85
High Density Residential (HDR)	--	8.4081
Commercial (C)	--	5.6110.16
Parks and Open Space (P/OS)	--	38.3303
Natural Resources (NR)	--	199.485
Right-of-Way	--	17.418

The existing and proposed land use designations are shown in Figure 2.0-5.

REZONE

The Project site is currently zoned Agriculture, 80-Acre Minimum (AG-80). The entire Project site would be rezoned from AG-80 to Special Planning Area (SPA). The Ranch SPA ~~zoning~~ Handbook will establish development standards and design guidelines to ensure quality and consistency in the design and implementation of the Project. The SPA document is regulatory in nature and will serve as zoning for the Project site. Development plans, subdivision maps, and site plans for the Project must be consistent with both the SPA and the City of Rancho Cordova General Plan.

SPECIAL PLANNING AREA HANDBOOK

The purpose of The Ranch SPA Handbook is to guide future development within The Ranch Project site and allow for a more creative implementation of the General Plan. Chapter 2, Regulatory Framework, describes the Project's relationship to the existing regulatory framework, including the City's General Plan and Zoning Code. Sections 3.1 and 3.2 address land use designations and zoning, respectively. Section 3.3 addresses permitted land uses, density, and establishing design requirements for each neighborhood area (Gateway Neighborhood, Parkview Neighborhood, and

Four Seasons Neighborhood). Section 3.4, Architectural Styles, describes architectural styles permitted by the SPA Handbook. Section 3.5, Development Standards, addresses lot size, width, depth, and coverage, coverage, building heights, and setbacks for single family, multifamily, and commercial uses. Section 3.6 describes the Project's sustainability features. Section 3.7 establishes construction and operational noise standards. Section 3.8~~6~~, Circulation Design Standards, establishes the circulation plan, including street sections, transit, and sections. The Parks + Open Space Design Program, Section 3.9~~7~~, establishes the overall park and open space plan, as well as addressing requirements and design for public and private parks, landscape standards, and signage and entry monumentation. Section 3.10~~8~~, Wetland Preserve, establishes standards and requirements related to the open space and wetland area proposed for preservation. Section 3.11~~9~~, Infrastructure, addresses provision of sanitary sewer, water service, and drainage, and phasing of the SPA.

PROJECT CONSTRUCTION

The Project Applicant Team has indicated that the Project will be constructed in a series of four~~ive~~ phases, as outlined below, with construction anticipated to commence in January 2020 and conclude in December 2035.

Phase 1 (January 2020 – August 2023)

- Site preparation for Phases 1 and 2 components: January 1, 2020 – March 30, 2020
- Grading for Phases 1 and 2 and improvements for Chrysanthy Boulevard and Phase 1: April 1, 2020 – November 1, 2020.
- Paving backbone infrastructure and Phase 1: November 1, 2020 – January 30, ~~2020~~2021
- Building construction: February 1, 2021 – May 1, 2023
- Architectural coating: May 1, 2021 – August 1, 2023
- This phase includes the following:
    - Phase 1 Clubhouse and associated landscaping (Lot A) – 7,000 s.f. of the clubhouse complex and approximately 1/3 of lot improvements
    - Community garden (Lot C)
    - 270 single family residential units
    - 211~~32~~ single family residential units – age restricted

Phase 2 (April 2022 – November 202~~5~~):

- Improvements for Phase 2: April 2022~~1~~ – September 2022
- Paving: October 2022 – December 2022
- Building Construction: April 2023 – July 2026~~5~~
- Architectural Coating: August 2023 – November 2026~~5~~
- This phase includes the following:
    - 197 single family residential units
    - 199~~210~~ single family residential units – age restricted
    - Phase 2 Clubhouse and associated landscaping (Lot A) – 7,000 s.f. of the clubhouse complex and approximately 1/3 of lot improvements
    - Neighborhood Park (Lot T~~C~~) – 2.19~~1.4~~ acres
    - ~~Open Space (Lot Q) – 2.1 acres~~

Phase 3 (March 2025 ~~– April 2029~~ December 2030):

- Site Preparation for Phase 3: February 2025 – April 2025
- Grading: April 2025 – October 1, 2025
- Paving: October 1, 2025 – December 31, 2025
- Building Construction: January 2026 – September 2030~~28~~
- Architectural Coating: April 2026 – December 2030~~28~~
- Site Preparation for Rancho Cordova widening: January 2027-October 2027
- Paving for Rancho Cordova widening: October 2027-January 2028
- This phase includes the following:
  - 265~~6~~ single family residential units
  - 295~~8~~ single family residential units – age restricted
  - 16 senior multifamily residential units
  - Phase 3 Clubhouse and associated landscaping (Lot A) – 7,000 s.f. of the clubhouse complex and approximately 1/3 of lot improvements
  - Park (Lot D) - 10.78 acres
  - Open Space (Lots Q-S) – 12.97 acres
  - Passive Park (Lot B) – 1.58~~9~~ acres
  - Passive Park (Lot ~~T~~U) – 1.21 acres

Phase 4 (March 2030 – ~~June~~ December 2035~~3~~):

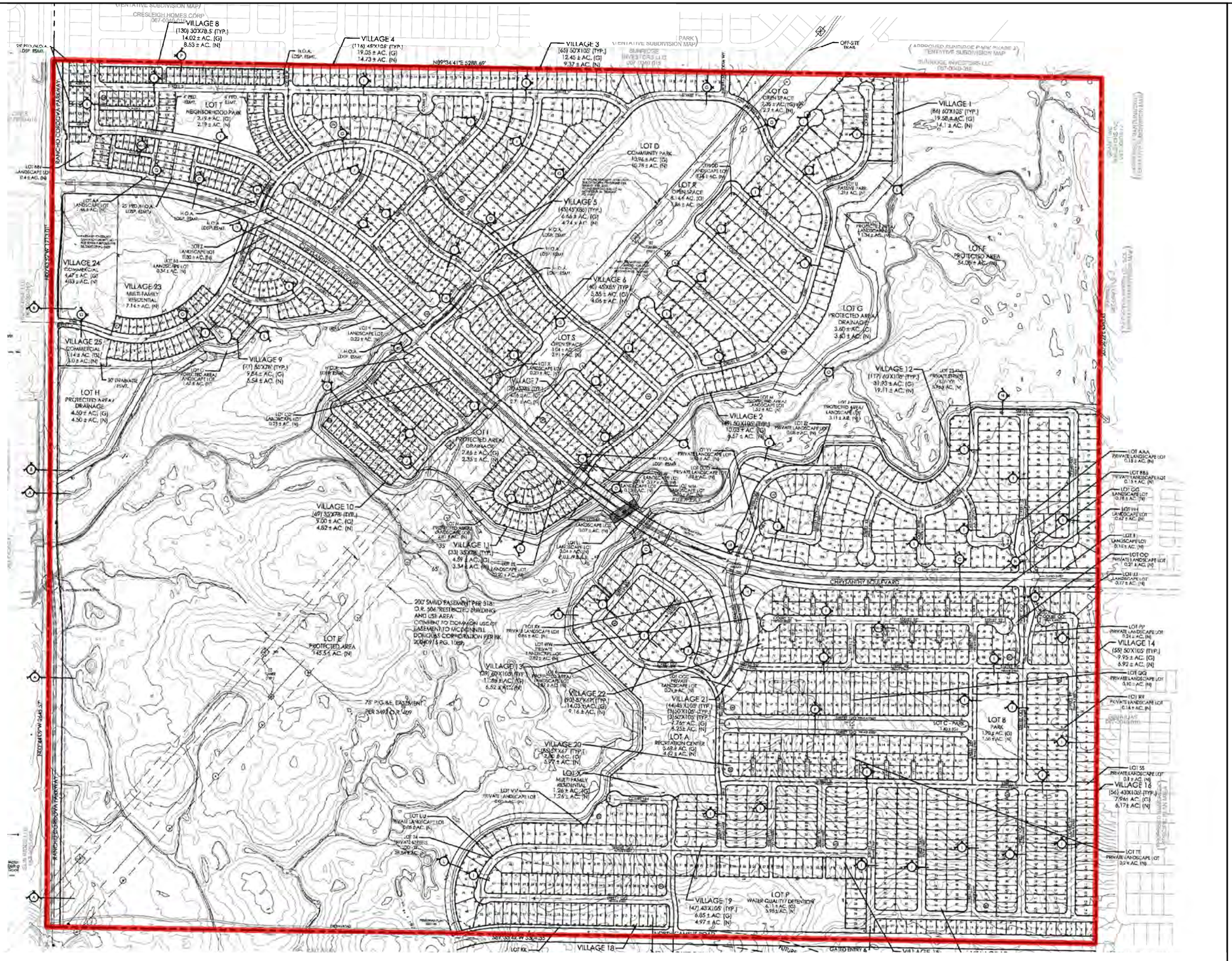
- 4A Multifamily - Site preparation for multifamily residential (7.14~~2~~ acres): March 2030 – April 2030
- 4A Multifamily - Grading and improvements: April 2030 – August 2030
- 4A Multifamily - Paving: August 2030 –October 2030
- 4A Multifamily - Building Construction: April 2031 – January 2033
- 4A Multifamily - Architectural Coating: January 2033 – May 2033
- 4B Commercial - Site preparation for commercial (5.33 acres): March 2034 – April 2034
- 4B Commercial - Grading and improvements: April 2034 – July 2034
- 4B Commercial - Paving: August 2034 –September 2034
- Commercial - Building Construction: April 2034 – August 2035
- Commercial - Architectural Coating: September 2035 – December 2035
- This phase includes the following:
  - 215 multifamily residential units
  - 22 senior multifamily residential units
  - Commercial center

~~Phase 5 (March 2034 – December 2035):~~

- ~~Site preparation for commercial (5.2 acres): March 2034 – April 2034~~
- ~~Grading and improvements: April 2034 – July 2034~~
- ~~Paving: August 2034 –September 2034~~
- ~~Building Construction: April 2034 – August 2035~~
- ~~Architectural Coating: September 2035 – December 2035~~
- ~~This phase includes the following:~~
  - ~~Commercial center~~

3.0 REVISIONS

Figures 2.0-4, 2.0-5, and 2.0-6 are revised as shown on Revised Draft EIR Figure 2.0-4, Revised Draft EIR Figure 2.0-5, and Revised Draft EIR Figure 2.0-6.



Data sources: Sacramento County; Wood Rogers, The Ranch, Small Lot Tentative Subdivision Map, June 2018, revised October 2019. Map date: October 31, 2019.

THE RANCH

Revised Draft EIR
Figure 2.0-4.
Tentative Subdivision Map

Legend

Project Location (APN 067-004-0008)

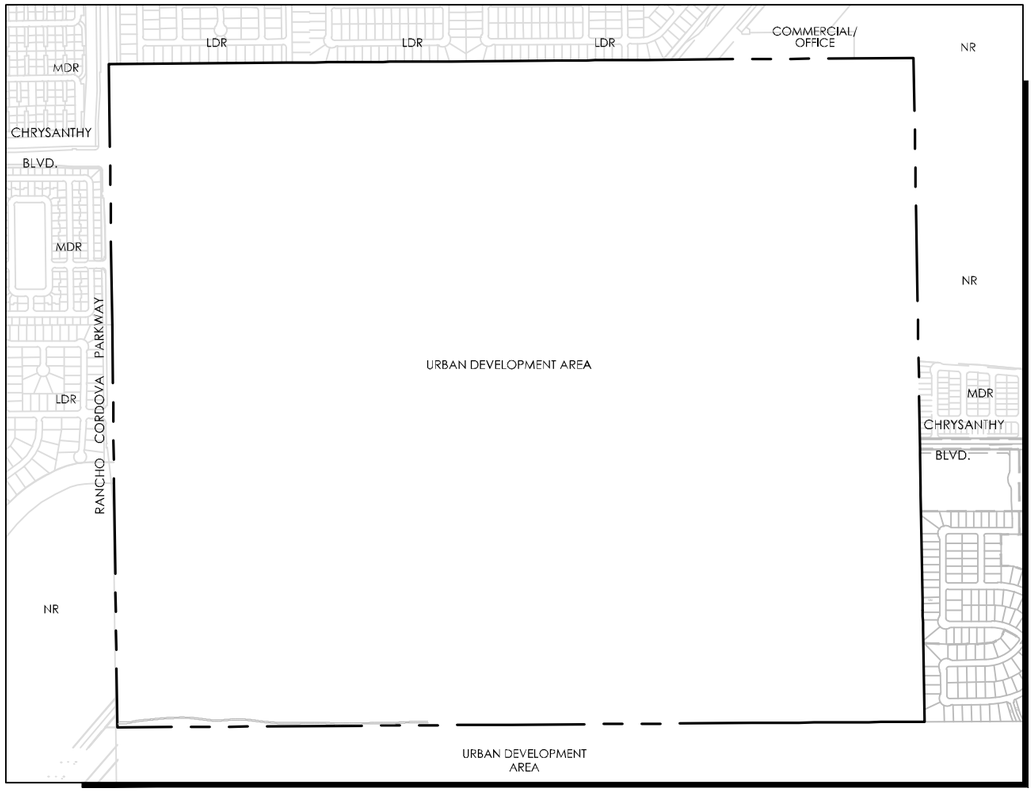
N

0 250 500
Feet

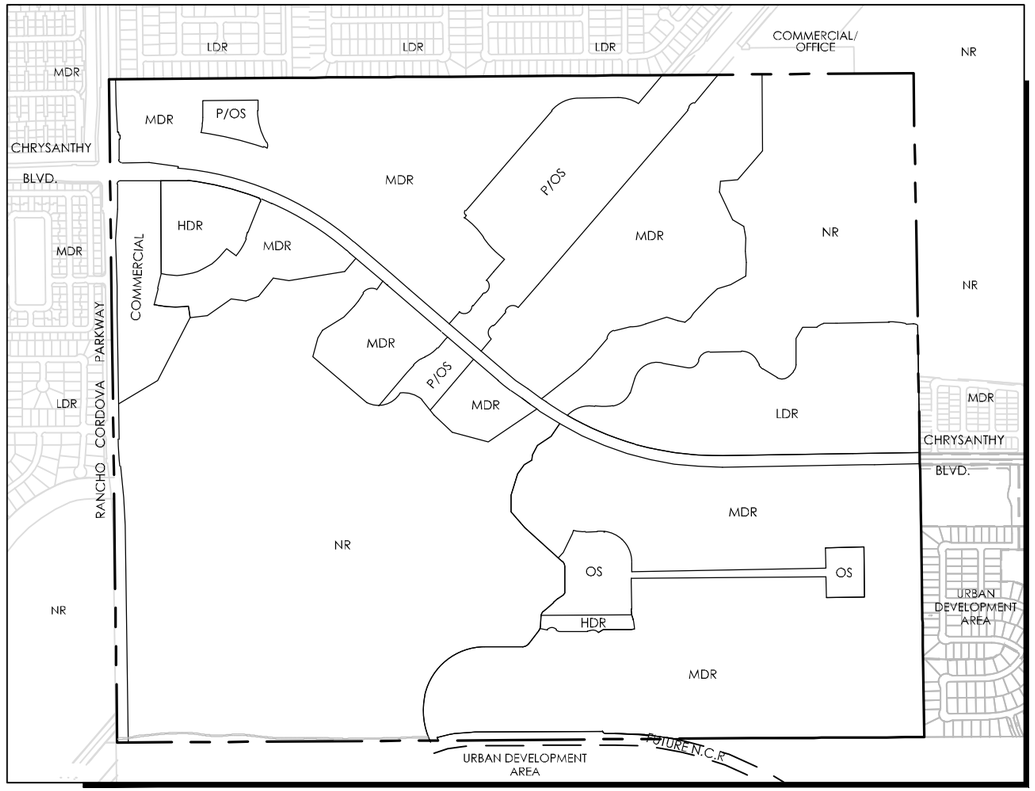
1:6,000

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This page left blank intentionally.



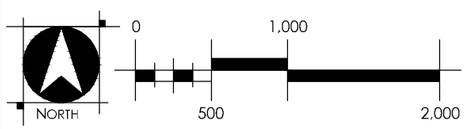
Existing General Plan



Proposed General Plan

GPA SUMMARY TABLE

DESIGNATION	LAND USE	EXISTING	PROPOSED	DIFFERENCE
URBAN DEVELOPMENT AREA		530.1	-	-530.1
LDR	LOW DENSITY RESIDENTIAL	-	31.93	+31.93
MDR	MEDIUM DENSITY RESIDENTIAL	-	228.96	+228.96
HDR	HIGH DENSITY RESIDENTIAL	-	8.40	+8.40
COMMERCIAL	COMMERCIAL	-	5.61	+5.61
P/OS	PARKS AND OPEN SPACE	-	38.33	+38.33
NR	NATURAL RESOURCES	-	199.48	+199.48
MAJOR ROADWAYS	RANCHO CORDOVA PKWY. ,CHRYSANTHY BLVD. & NORTH CAMPUS ROAD	-	17.41	+17.41
		530.1	530.1	0.0



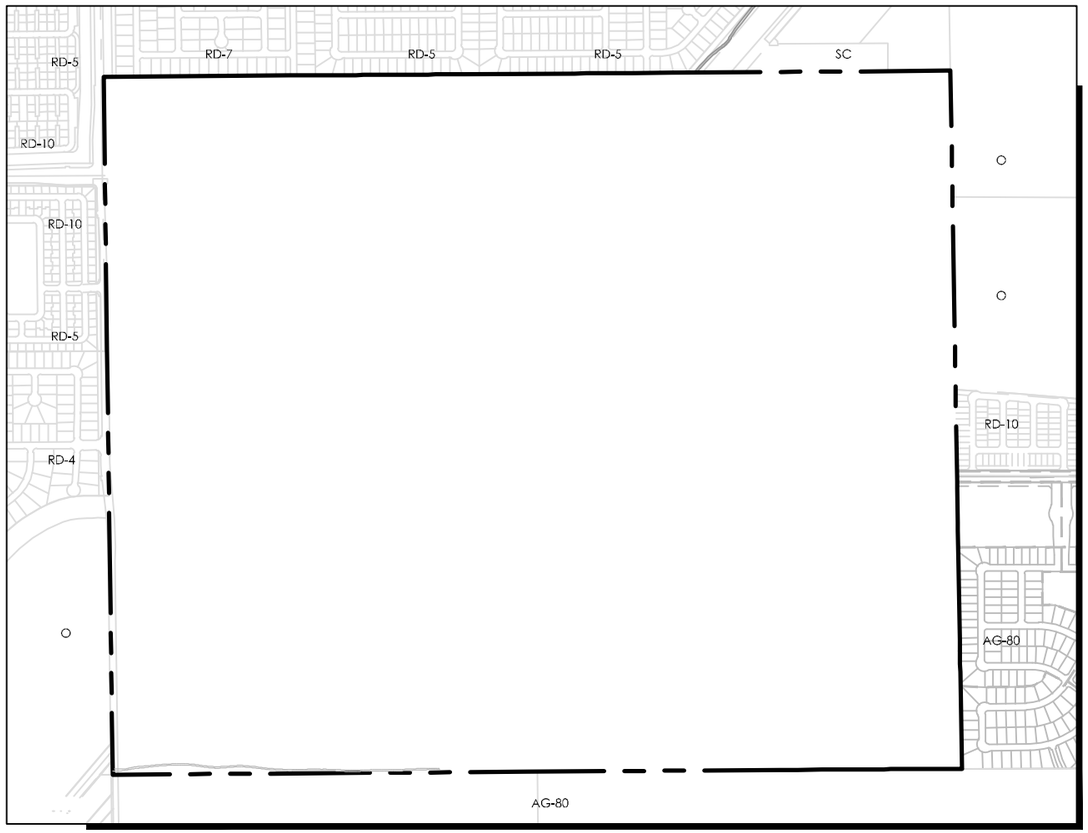
THE RANCH

Revised Draft EIR

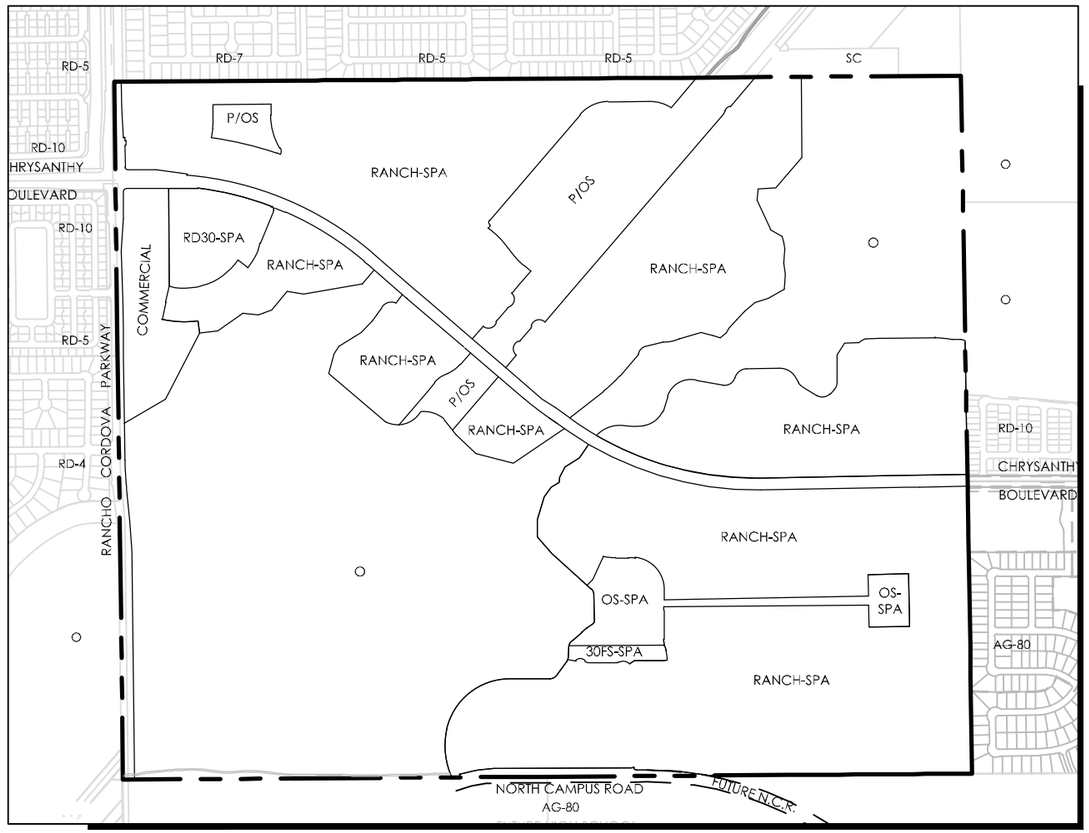
Figure 2.0-5: Existing and Proposed General Plan

Source: K. Hovnanian, 2019; Wood Rodgers, 2019

This page left blank intentionally.



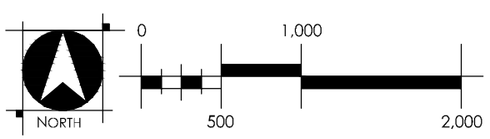
Existing Zoning



Proposed Zoning

REZONE SUMMARY TABLE

DESIGNATION	LAND USE	EXISTING	PROPOSED	DIFFERENCE
AG-80	AGRICULTURE, 80-ACRE MINIMUM	530.1	-	-530.1
SPA	SPECIAL PLANNING AREA	-	530.1	+530.1
		530.1	530.1	



THE RANCH

Revised Draft EIR

Figure 2.0-6: Existing and Proposed Zoning

Source: K. Hovnanian, 2019; Wood Rodgers, 2019

This page left blank intentionally.

3.1 AESTHETICS AND VISUAL RESOURCES

No changes were made to Section 3.1 of the Draft EIR.

3.2 AIR QUALITY

The following changes were made to pages 3.2-26 and 3.2-27 of the Draft EIR:

Operational Emissions

Full buildout of the Project is expected to occur by 2035. The land use inputs for CalEEMod were derived from the Project Description (see Chapter 2.0), which includes information provided by the Project Applicant[3]. The CalEEMod land use inputs include:

- Retail:
  - Regional Shopping Center (32,000 square feet) (5.~~16~~ 33 acres)
- Residential:
  - Apartments Mid Rise (215 Dwelling Units) (~~7.17~~ 7.14 acres)
  - Retirement Community (38 dwelling units) (1.26 acres)
  - Retirement Community (~~737~~ 705 dwelling units) (~~90.91~~89.49 acres)
  - Single Family Housing (~~735~~ 732 dwelling units) (~~77.87~~78.51 acres)
- Recreational:
  - City Park (Lot D - ~~9.1~~10.78 acres) (including an 8,000 square foot restroom) (~~9.28~~10.78 acres)
  - City Park (Lot A - ~~3.07~~4.62 acres) (including a 21,000 square foot clubhouse) (~~3.69~~4.62 acres)
  - City Park (0.5 acres)
  - City Park (Lot T - 2.19 acres)
  - Parking – Other Asphalt Surfaces (3.5 acres)
  - Parking – Parking Lot (1.5 acres)

Vegetation change was modeled to estimate the reduction in carbon accumulation provided by the existing biomass (e.g. grasses) that would be removed upon Project buildout. It was assumed that, out of the approximately 530.1 acres within the project site, approximately 278.~~76~~62 acres within the Project site would remain ~~undeveloped~~ as open space, grass, or vegetated areas, upon project buildout. Areas identified as residential, commercial, and rights-of-way in Table 2.0-1 are not included in the vegetated lands calculation. The Grassland vegetation land use subtype was used a proxy for the current land type within the Project site.

Carbon sequestration was also modeled from the planting of new trees within the Project site. Based on information provided by the Project applicant, it was assumed that 2,240 new trees would be planted within the project site.

Separately, minor adjustments were made to several of the default emission factors provided by CalEEMod. These are as follows:

- Consumer products:

[3] Passive park uses are treated as open space and therefore and not modeled.

- The "general category" emission factor was adjusted from default value (reduced by a total of 29.10%), based on the following differences between Project attributes and the inputs used to develop the default value (the default value utilizes statewide factors from year 2008):
  - The Project is estimated to have a persons per dwelling unit (persons/du) value of 2.504, versus the current statewide average of 2.97[4]. This is a difference of 18.60%.
  - The CARB estimated total statewide year 2016 ROG emissions of 208.71 tons/year, which is 12.89% less than the amount estimated for year 2008 (239.6 tons/year).

- Architectural Coatings:
  - The residential and non-residential interior and ~~non-residential interior~~exterior emission factors were reduced from 100 g/L to ~~50~~ 75 g/L, based on the SMAQMD guidance that the average overall VOC content of architectural coatings in the SMAQMD jurisdiction is approximately 75 g/L ~~Rule 442 that provides a maximum VOC limit of 50 g/L for flat coatings. It was assumed that flat coatings are used for interior coatings~~.

The following changes were made to pages 3.2-28 and 3.2-29 of the Draft EIR:

As provided by the Project applicant, approximately 152,708 cubic yards of soil (net) would be exported from the Project site. Additionally, it was assumed that ~~278.76~~approximately 330.4 acres of the Project site would be graded (this includes all of the residential and commercial portions of the Project site, as well as right-of-way).

The Project is anticipated to be developed in approximately four~~ive~~ phases, according to the Project applicant, as described in Chapter 2.0, Project Description, and summarized below~~follows~~:

- Phase 1 (January 2020 – August 2023):
  - Phase I Clubhouse and associated landscaping (Lot A) – 1/3 of the building complex (about 7000 sf);
  - 270 single family residential units;
  - ~~232~~ 211 single family residential units – age restricted.
  - Community garden (Lot C) – 1.4 acres

- Phase 2 (April 2022 – November ~~2025~~2026):
  - 197 single family residential units
  - ~~210~~ 199 single family residential units – age restricted.
    - ~~Neighborhood Park 2.2 ac (lot Q)~~
    - Neighborhood Park (Lot T) – 2.19 acres~~Liner Park Lot C (1.4ac)~~
    - Phase 2 Clubhouse building (~7000 sf)
- Phase 3 (February 2025 – ~~April 2029~~December 2030):
  - ~~268~~ 265 single family residential units
  - 295 single family residential units – age restricted

[4] California Department of Finance, Table 2: E-5 City/County Population and Housing Estimates (1/1/2018).

- 16 senior multi-family residential units
- Park (Lot D) - 10.78 acres
- Open Space (Lots Q-S) – 12.97 acres
- Passive Park (Lot B) – 1.58 acres
- Passive Park (Lot U) – 1.21 acres

- ~~Open Space (Lot T) – 1.2 acres~~
- ~~Rancho Cordova Parkway Widening~~
- ~~Phase 3 clubhouse (~7000 sf)~~

- ~~Lot B (Park)~~
- Phase 4 (March 2030 – ~~June 2033~~December 2035):
  - 215 multi-family residential units
  - 22 senior multi-family residential units
- ~~Phase 5 (March 2034 – December 2035)~~
  - Commercial Center

CalEEMod was used to estimate the construction emissions from construction activities. Based on construction phasing and schedule, the default off-road construction equipment types, amount, and characteristics provided by CalEEMod were used to model Project off-road construction equipment.

The following changes were made to pages 3.2-29 and 3.2-30 of the Draft EIR:

Specifically, the Project would include the following operational project characteristics that would reduce Project operational emissions below the applicable thresholds as provided in Table 3.2-7 through Table 3.2-9. As stated, these represent Project characteristics rather than mitigation. For further detail, see the list of sustainability features and other Project details as provided in Chapter 2.0: Project Description. A summary of the Project characteristics is provided below (note: the associated CalEEMod measure is provided in brackets below):

- Density to 6.~~86~~ 66 dwelling units per acre (1,690 dwelling units divided by 253.87 residential acres (gross). [Traffic Mitigation, LUT-1];

- ~~Increase diversity through single family residential, multi family residential, commercial, parks and recreation, and senior uses [Traffic Mitigation, LUT-3];~~

- Improve walkability design (a ratio of ~~123.53~~144.9 intersections per square mile~~s~~, as shown on the Tentative Subdivision Map.) [Traffic Mitigation, LUT-9];

- ~~Improve destination accessibility (12.3 miles) [Traffic Mitigation LUT-4];~~

- Increase transit accessibility (Project site would include on-site transit facilities for the City's Signature Transit Route as identified in the SPA Handbook) – average distance to transit for Project residents would be approximately 0.25 miles) [Traffic Mitigation, LUT-5];

- Improve pedestrian network (Project site and connecting off-site. The Project would include pedestrian improvements that provide connectivity between the internal components of the Project, as well as to adjacent existing and future developments. The Project would provide for future connections to an extension of Chrysanthy Boulevard and planned development east of the Project site, a connection to an existing trail located north of the site, connections south of

the site via a pedestrian connection at North Campus Road, and connections to the existing and future uses to the west of the site.) [Traffic Mitigation, SDT-1];

- Provide traffic calming measures (50% of streets and intersections with improvements as shown on the Tentative Subdivision Map and identified in the SPA Handbook. Traffic calming features incorporated into the Project include street design features, such as narrower streets, limited single-loaded streets, parking on both sides of the street, posted speed limit signs, planter strips with street trees, and horizontal shifts (lane centerline that curves or shifts), and intersection traffic calming features, including marked crosswalks, count-down signal timers where appropriate, curb extensions, channelization islands, median islands, and tight corner radii.) [Traffic Mitigation, SDT-2];

- Install electric vehicle (EV) charging stations throughout the Project site, such that at least 50% of single-family residences and 5% of parking spaces within the commercial, park and recreation, and multi-family land uses will have EV charging stations, as identified in the SPA Handbook. [Traffic Mitigation SDT-3];

- Expand transit network; the Project will provide a transit stop as provided in the SPA Handbook. [Traffic Mitigation, TST-3];

- Plant a minimum of 2,240 new trees throughout the Project site [4.11.2-Sequestration];

- No hearths, as recommended by the SMAQMD in the *SMAQMD Tips for Using CalEEMod* (February 2019). [Area Mitigation];

- Use low-VOC paint for architectural coatings (75~~50~~ EF g/L) (Note: this VOC value represents the average VOC level for architectural coatings in the SMAQMD jurisdiction, as provided via correspondence with the SMAQMD.);

- Install energy efficient (i.e. LED or better lighting) for all outdoor lighting, as identified in the SPA Handbook. ~~(for outdoor lighting)~~ [Energy Mitigation, LE-1];

- Generate 95% or more of electricity via renewable energy (on-site energy generation and/or contract with SMUD, as identified in the SPA Handbook.) [Energy Mitigation, AE-1, AE-2, AE-3];

- Install energy efficient *(i.e. Energy Star)* appliances, as identified in the SPA Handbook. [Energy Mitigation, BE-4];

- Install low-flow appliances (bathroom faucet, kitchen faucet, toilet, and shower), as identified in the SPA Handbook. [Water Mitigation, WUW-1];

- Use water-efficient irrigation systems (automatic rain shut-off, maximum gallon per minute restriction, WiFi connectivity), as identified in the SPA Handbook. [Water Mitigation, WUW-4]; and

- Minimize turf for residential uses to 70% less than the maximum allowed turf area, as identified in the SPA Handbook. [Water Mitigation, WUW-5].

The following changes were made to pages 3.2-31 to 3.2-32 of the Draft EIR:

Since the SMAQMD operational thresholds for ROG and NOx are only provided in pounds per day, annual operational emissions for these pollutants are provided for informational purposes only. Detailed CalEEMod emissions calculations are presented in Appendix B.

It should be noted that the Project has been designed and planned to incorporate a substantial amount of available mitigation options in CalEEMod. In addition to the CalEEMod mitigation options described above, Mitigation Measure 3.6-2 includes additional requirements that would further reduce air pollutant emissions. However, it is noted that the Project's unmitigated emissions, as shown in Tables 3.2-7 through 3.2-9 below do not exceed SMAQMD thresholds for criteria pollutants, so greenhouse gas Mitigation Measure 3.6-2 is not required to address this impact. Mitigation Measure 3.6-2 requires the Project to include the additional CalEEMod measures identified by SMAQMD as appropriate for reducing emissions, which include:

- Implement Trip Reduction Program (100% of employees eligible; voluntary) [Traffic Mitigation, TRT-1 and TRT-2];
- Exceed Title 24 (2% improvement) [Energy Mitigation, BE-1]; and
- Apply Water Conservation Strategy (25% reduction in outdoor water consumption) [Water Mitigation WUW-2].

The results of the unmitigated and mitigated Project scenarios are provided in Table 3.2-7 through Table 3.2-9, below.

TABLE 3.2-7: PROJECT OPERATIONAL EMISSIONS (TONS/YEAR) - ANNUAL

UNMITIGATED				
EMISSIONS[A]	*ROG*	*NOX*	*PM_{10}*	*$PM_{2.5}$*
Area	~~8.0~~8.1	0.2	0.1	0.1
Energy	0.2	1.4	0.1	0.1
Mobile	~~1.5~~1.6	~~7.8~~8.1	~~8.6~~9.0	~~2.3~~2.4
Total	**~~9.7~~9.9**	**~~9.4~~9.8**	**~~8.8~~9.2**	**~~2.5~~2.6**
Threshold	**N/A**	**N/A**	**14.5**	**15**
Above Threshold?	**N/A**	**N/A**	**No**	**No**
MITIGATED				
EMISSIONS[A]	*ROG*	*NOX*	*PM_{10}*	*$PM_{2.5}$*
Area	8.1	0.2	0.1	0.1
Energy	0.2	1.4	0.1	0.1
Mobile	1.6	8.1	8.7	2.4
Total	**9.8**	**9.7**	**8.9**	**2.6**
Threshold	**N/A**	**N/A**	**14.5**	**15**
Above Threshold?	**N/A**	**N/A**	**No**	**No**

NOTE: [A] NUMBERS PROVIDED HERE MAY NOT ADD UP EXACTLY TO TOTAL DUE TO ROUNDING. [B] MAXIMUM VALUE.

SOURCE: CALEEMOD (V.2016.3.2)

3.0 REVISIONS

TABLE 3.2-8: PROJECT OPERATIONAL EMISSIONS (MAXIMUM POUNDS/DAY) - SUMMER

UNMITIGATED				
EMISSIONS(A)	ROG	NOX	PM_{10}	$PM_{2.5}$
Area	45.9	1.6	0.8	0.8
Energy	0.9	7.6	0.6	0.6
Mobile	11.2	44.0	51.2	13.8
Total	**57.9**	**53.2**	**52.6**	**15.2**
Threshold	**65**	**65**	**80**	**82**
Above Threshold?	**No**	**No**	**No**	**No**
MITIGATED				
EMISSIONS(A)	ROG	NOX	PM_{10}	$PM_{2.5}$
Area	45.9	1.6	0.8	0.8
Energy	0.9	7.5	0.6	0.6
Mobile	11.1	43.5	49.6	13.4
Total	**57.8**	**52.6**	**51.0**	**14.8**
Threshold	**65**	**65**	**80**	**82**
Above Threshold?	**No**	**No**	**No**	**No**
~~Area~~	~~45.4~~	~~1.6~~	~~0.8~~	~~0.8~~
~~Energy~~	~~0.9~~	~~7.7~~	~~0.6~~	~~0.6~~
~~Mobile~~	~~17.6~~	~~43.3~~	~~48.8~~	~~13.2~~
~~**Total**~~	~~**53.9**~~	~~**52.7**~~	~~**50.2**~~	~~**14.6**~~
~~**Threshold**~~	~~**65**~~	~~**65**~~	~~**80**~~	~~**82**~~
~~**Above Threshold?**~~	~~**No**~~	~~**No**~~	~~**No**~~	~~**No**~~

NOTE: (A) NUMBERS PROVIDED HERE MAY NOT ADD UP EXACTLY TO TOTAL DUE TO ROUNDING. (B) MAXIMUM VALUE. SOURCE: CALEEMOD (V.2016.3.2)

TABLE 3.2-9: PROJECT OPERATIONAL EMISSIONS (MAXIMUM POUNDS/DAY) - WINTER

UNMITIGATED				
EMISSIONS(A)	ROG	NOX	PM_{10}	$PM_{2.5}$
Area	45.9	1.6	0.8	0.8
Energy	0.9	7.6	0.6	0.6
Mobile	8.0	45.5	51.2	13.8
Total	**54.7**	**54.7**	**52.6**	**15.2**
Threshold	**65**	**65**	**80**	**82**
Above Threshold?	**No**	**No**	**No**	**No**
~~Area~~	~~45.4~~	~~1.6~~	~~0.8~~	~~0.8~~
~~Energy~~	~~0.9~~	~~7.7~~	~~0.6~~	~~0.6~~
~~Mobile~~	~~17.6~~	~~43.3~~	~~48.8~~	~~13.2~~
~~**Total**~~	~~**53.9**~~	~~**52.7**~~	~~**50.2**~~	~~**14.6**~~
~~**Threshold**~~	~~**65**~~	~~**65**~~	~~**80**~~	~~**82**~~
~~**Above Threshold?**~~	~~**No**~~	~~**No**~~	~~**No**~~	~~**No**~~
MITIGATED				
EMISSIONS(A)	ROG	NOX	PM_{10}	$PM_{2.5}$

Area	45.9	1.6	0.8	0.8
Energy	0.9	7.5	0.6	0.6
Mobile	7.9	45.0	49.6	13.4
Total	**54.6**	**54.1**	**51.0**	**14.8**
Threshold	**65**	**65**	**80**	**82**
Above Threshold?	**No**	**No**	**No**	**No**

NOTE: [A] NUMBERS PROVIDED HERE MAY NOT ADD UP EXACTLY TO TOTAL DUE TO ROUNDING. [B] MAXIMUM VALUE.
SOURCE: CALEEMOD (V.2016.3.2)

The following changes were made to pages 3.2-32 to 3.2-33 of the Draft EIR:

PROJECT CONSTRUCTION

Construction activities associated with construction and implementation of the Project would result in temporary short-term emissions associated with vehicle trips from construction workers, operation of construction equipment, and the dust generated during construction activities. These temporary and short-term emissions would generate additional ozone precursors (ROG and NO_x) as well as PM_{10} and $PM_{2.5}$. Below is an estimated phasing construction schedule for the Project, broken down into ~~five~~ four phases (as provided by the Project applicant)[5]:

- Phase 1:
  - Site Preparation: 1/1/2020 – 3/30/2020
  - Grading: 4/1/2020 – 11/1/2020
  - Paving: 11/1/2020 – 1/30/2021
  - Building Construction: 2/1/2021 – 5/1/2023
  - Architectural Coating: 5/2/2021 – 8/1/2023
- Phase 2:
  - Building Construction: 4/1/2022 – 9/30/2022
  - Paving: 10/1/2022 – 12/31/2022
  - Building Construction: 4/1/2023 – 7/31/2026~~5~~
  - Architectural Coating: 8/1/2023 – 11/30/2026~~5~~
- Phase 3:
  - Site Preparation: 2/1/2025 – 4/27/2025
  - Grading: 4/28/2025 – 10/1/2025
  - Paving: 10/2/2025 – 12/31/2025
  - Building Construction: 1/1/2026 – 9/30/~~2028~~2030
  - Architectural Coating: 4/1/2026 – 12/31/~~2028~~2030
  - Site Preparation and grading for Rancho Cordova widening: 1/1/2027 – 10/1/2027
  - Paving for Rancho Cordova widening: 10/2/2027 – 01/31/2028
  - ~~Site Prep (note: for park – Lot D): 4/1/2028 – 4/1/2029~~
- Phase 4:
  - Site Preparation for ~~Commercial and MFR~~multifamily residential: 3/1/2030 – 4/~~27~~1/2030
  - Grading ~~and Improvements~~for multifamily residential: 4/~~28~~2/2030 – 8/1/2030

[5] Note: Site preparation and grading activities for Phases 1 and 2 are anticipated to be conducted during Phase 1, as provided by the Project applicant.

- Paving for multifamily residential: 8/2/2030 – 10/~~31~~1/2030
- Building Construction for multifamily residential: 4/1/2031 – ~~1~~1/~~1~~1/~~2033~~2033
- Architectural Coating for multifamily residential: 1/~~2~~1/~~2033~~ 2033 – ~~6~~5/~~1~~1/2033

~~• Phase 5:~~

- Site Preparation for commercial ~~center~~: 3/1/2034 – ~~4~~3/~~27~~31/2034
- Grading and Improvements for commercial: 4/2~~8~~/2034 – ~~7~~9/~~31~~28/~~2024~~2034
- Paving for commercial: 8/1/2034 – 9/~~1~~28/2034
- Building Construction for commercial: ~~10~~4/1/2034 – 8/~~3~~1/2035
- Architectural Coating for commercial: 9/1/2035 – ~~12~~11/~~31~~30/2035

The following changes were made to pages 3.2-34 to 3.2-35 of the Draft EIR:

Table 3.2-10 shows the maximum daily and annual construction emissions that would result from the Project. The emissions provided in Table 3.2-10 represent emissions inclusive of the above-specified measures that would reduce Project-related construction emissions consistent with the SMAQMD construction-related best management practices. It should be noted that most components of the mitigation measures provided in Mitigation Measure 3.6-2 (see Section 3.6: Greenhouse Gas Emissions, Climate Change, and Energy) were not modeled, since CalEEMod does not provide the ability to model the emissions reductions from most of the components these measures. Mitigated and unmitigated emissions were nearly equivalent; therefore, Table 3.2-10 provides the results of the unmitigated emissions. Table 3.2-11 provides a summary of the construction emissions for those years with concurrent phases (i.e. for years where construction activities from more than one phase will overlap).

The SMAQMD has established construction emissions threshold of significance of 85 pounds per day for NOx, 80 pounds per day and 14.6 tons per year for PM_{10}, and 82 pounds per day and 15 tons per year for $PM_{2.5}$. The SMAQMD utilizes a screening process and separate model for CO impacts. There is no construction threshold for ROG. As shown in Tables 3.2-10 and 3.2-11, construction emissions of NOx would be at its maximum in year 2020, with a maximum of approximately ~~68.2~~76.5 pounds per day, which is below the 85 pounds per day threshold for NOx. Year 2027 would be the peak year for PM_{10} with a maximum of approximately 36.3 pounds per day and 2027 would be the peak year~~s~~ for ~~PM_{10} and~~ $PM_{2.5}$, with a maximum of approximately 15.7 pounds per day. However, emissions for PM would also be below the applicable daily and annual thresholds for PM as provided by the SMAQMD. As such, Project construction emissions would not be expected to contribute a significant level of air pollution such that regional air quality within the SVAB would be degraded and no mitigation is required. Therefore, Project construction emissions would result in a ***less than significant*** impact.

TABLE 3.2-10: SUMMARY OF MAXIMUM UNMITIGATED CONSTRUCTION DAILY AND ANNUAL EMISSIONS

YEAR	ROG (LBS/DAY)	NOX (LBS/DAY)	PM_{10} (LBS/DAY)	$PM_{2.5}$ (LBS/DAY)	PM_{10} (TONS/YEAR)	$PM_{2.5}$ (TONS/YEAR)
PHASE 1						
2020	5.0	68.3	~~10.5~~20.4	~~6.5~~12.0	~~0.8~~1.5	~~0.5~~0.8
2021	~~14.7~~14.6	~~39.0~~22.7	~~8.9~~8.6	~~3.5~~2.8	1.0~~1.0~~	~~0.4~~0.3
2022	~~14.2~~14.3	~~34.9~~20.8	~~8.7~~8.5	~~3.2~~2.7	1.1~~1.1~~	~~0.4~~0.3
2023	~~13.9~~14.3	~~31.6~~18.7	~~8.5~~8.4	~~3.1~~2.6	0.4~~0.4~~	~~0.1~~0.1
Maximum	**~~14.7~~14.6**	**~~68.2~~68.3**	**~~10.5~~20.4**	**~~6.5~~12.0**	**1.5~~1.1~~**	**~~0.5~~0.8**
Threshold	**None**	**85**	**80**	**82**	**14.6**	**15**

Above Threshold?	**N**	**N**	**N**	**N**	**N**	**N**
PHASE 2						
2022	~~1.8~~3.2	~~15.7~~33.1	~~1.1~~19.8	~~0.8~~11.5	~~0.1~~1.3	~~0.1~~0.8
2023	9.7~~10.5~~	22.4~~22.1~~	4.5~~3.6~~	1.7~~1.5~~	~~0.2~~0.4	~~0.1~~0.2
2024	9.5~~10.3~~	21.2~~20.9~~	4.4~~3.5~~	1.6~~1.4~~	~~0.5~~0.6	~~0.2~~0.2
2025	9.3~~10.1~~	20.0~~19.7~~	4.3~~3.4~~	1.5~~1.3~~	~~0.3~~0.5	~~0.1~~0.2
2026	9.2	19.8	4.3	1.5	0.4	0.1
Maximum	**~~10.5~~9.7**	**~~22.1~~33.1**	**~~19.8~~3.6**	**~~11.5~~1.5**	**~~0.5~~1.3**	**~~0.2~~0.8**
Threshold	**None**	**85**	**80**	**82**	**14.6**	**15**
Above Threshold?	**N**	**N**	**N**	**N**	**N**	**N**
PHASE 3						
2025	4.0~~3.9~~	~~36.6~~36.6	~~9.8~~20.4	~~5.6~~11.3	~~0.5~~1.1	~~0.3~~0.6
2026	~~17.6~~9.4	23.8~~25.8~~	16.8~~5.9~~	4.6~~2.0~~	2.0~~0.7~~	0.6~~0.2~~
2027	11.8~~20.0~~	48.8~~50.8~~	36.1~~15.3~~	15.6~~7.5~~	4.0~~1.7~~	1.7~~0.8~~
2028	10.2~~19.9~~	31.8~~50.6~~	17.4~~15.3~~	5.0~~7.5~~	2.1~~1.5~~	~~0.7~~0.6
2029	9.0	23.0	16.8	4.6	2.1	0.6
2030	8.7	18.8	16.5	4.3	1.6	0.4
~~2029~~	~~2.5~~	~~25.3~~	~~9.3~~	~~5.5~~	~~0.3~~	~~0.2~~
Maximum	**~~20.0~~11.8**	**~~50.8~~48.8**	**~~15.3~~36.1**	**~~7.5~~15.6**	**~~1.7~~4.0**	**~~0.8~~1.7**
Threshold	**None**	**85**	**80**	**82**	**14.6**	**15**
Above Threshold?	**N**	**N**	**N**	**N**	**N**	**N**
PHASE 4						
2030	~~3.1~~2.5	~~14.9~~13.7	~~8.7~~18.6	~~4.9~~10.4	~~0.3~~0.5	~~0.2~~0.3
2031	1.7~~1.7~~	~~9.9~~10.1	4.0~~1.5~~	1.1~~0.5~~	~~0.1~~0.4	~~<0.1~~0.1
2032	1.7~~1.7~~	~~9.9~~10.1	4.0~~1.5~~	~~0.5~~1.1	~~0.2~~0.5	~~0.1~~0.1
2033	~~17.4~~26.5	0.9	0.3	0.1	<0.1	<0.1
2034	5.7	31.5	26.7	14.5	0.8	0.4
2035	26.2	9.2	1.5	0.5	0.1	<0.1
Maximum	**~~17.4~~26.5**	**~~14.9~~31.5**	**~~8.7~~26.7**	**14.5~~4.9~~**	**~~0.3~~0.8**	**~~0.2~~0.4**
Threshold	**None**	**85**	**80**	**82**	**14.6**	**15**
Above Threshold?	**N**	**N**	**N**	**N**	**N**	**N**
~~*PHASE 5*~~						
~~2034~~	~~2.5~~	~~13.7~~	~~8.7~~	~~4.9~~	~~0.6~~	~~0.3~~
~~2035~~	~~3.5~~	~~8.3~~	~~0.2~~	~~0.1~~	~~<0.1~~	~~<0.1~~
~~**Maximum**~~	~~**3.5**~~	~~**13.7**~~	~~**8.7**~~	~~**4.9**~~	~~**0.6**~~	~~**0.3**~~
~~**Threshold**~~	~~**None**~~	~~**85**~~	~~**80**~~	~~**82**~~	~~**14.6**~~	~~**15**~~
~~**Above Threshold?**~~	~~**N**~~	~~**N**~~	~~**N**~~	~~**N**~~	~~**N**~~	~~**N**~~

SOURCE: CALEEMOD (V.2016.3.2)

TABLE 3.2-11: SUMMARY OF MAXIMUM UNMITIGATED CONSTRUCTION DAILY AND ANNUAL EMISSIONS IN YEARS WITH CONCURRENT PHASES

YEAR	*ROG (LBS/DAY)*	*NOX (LBS/DAY)*	*PM_{10} (LBS/DAY)*	*$PM_{2.5}$ (LBS/DAY)*	*PM_{10} (TONS/YEAR)*	*$PM_{2.5}$ (TONS/YEAR)*
2022						
Phase 1	14.6	20.8	8.5	2.7	1.1	0.3
Phase 2	3.2	33.1	19.8	11.5	1.3	0.8
Total	**17.8**	**53.9**	**28.3**	**14.2**	**2.4**	**1.1**

2023						
Phase 1	14.3	18.7	8.4	2.6	0.4	0.1
Phase 2	9.7	22.4	4.5	1.7	0.4	0.2
Total	**24.1**	**41.1**	**12.9**	**4.3**	**0.8**	**0.3**
2025						
Phase 2	9.3	20.0	4.3	1.5	0.5	0.2
Phase 3	4.0	36.6	20.4	11.3	1.1	0.6
Total	**13.3**	**56.6**	**24.7**	**12.8**	**1.6**	**0.8**
2026						
Phase 2	9.2	19.8	4.3	1.5	0.4	0.1
Phase 3	9.4	23.8	16.8	4.6	2.0	0.6
Total	**18.6**	**43.6**	**21.1**	**6.1**	**2.4**	**0.7**
2030						
Phase 3	8.7	18.8	16.5	4.3	1.6	0.4
Phase 4	2.5	13.7	18.6	10.4	0.5	0.3
Total	**11.2**	**32.5**	**35.1**	**14.7**	**2.1**	**0.7**
Maximum	**24.1**	**56.6**	**28.3**	**14.2**	**2.4**	**1.1**
Threshold	**None**	**85**	**80**	**82**	**14.6**	**15**
Above Threshold?	**N/A**	**N**	**N**	**N**	**N**	**N**

SOURCE: CALEEMOD (V.2016.3.2); DE NOVO PLANNING GROUP, 2019

The following changes were made to page 3.2-38 of the Draft EIR:

CONCLUSION

As shown in Tables 3.2-~~11~~7 through 3.2-~~13~~9, modeled Project characteristics demonstrate that the Project's operational emissions to levels would be below the SMAQMD thresholds. The Project would have a ***less than significant*** impact relative to project operational emissions. Additionally, as shown in Tables 3.2-~~11~~10 and 3.2-11, implementation of the SMAQMD construction-related best management practices (as required) would reduce Project-related construction emissions during the construction timeframe and emissions would be below SMAQMD thresholds. ~~Therefore, Project construction emissions would have a ***less than significant*** impact.~~ Lastly, the Project would not generate significant health impacts associated with exposure to increases in criteria pollutant levels, based on the tools that are currently available and SMAQMD's interim guidance. This Project would have a ***less than significant*** impact relative to this topic.

The following changes were made to pages 3.2-40 to 3.2-41 of the Draft EIR:

Impact 3.2-3: The Project has the potential for expose sensitive receptors to substantial toxic air contaminants (Less than Significant)

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air. However, their high toxicity or health risk may pose a threat to public health even at very low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. This contrasts with the criteria pollutants for

which acceptable levels of exposure can be determined and for which the state and federal governments have set ambient air quality standards.

The CARB published the *Air Quality and Land Use Handbook: A Community Health Perspective* (~~2007~~2005) to provide information to local planners and decision-makers about land use compatibility issues associated with emissions from industrial, commercial and mobile sources of air pollution. The CARB Handbook indicates that mobile sources continue to be the largest overall contributors to the State's air pollution problems, representing the greatest air pollution health risk to most Californians. The most serious pollutants on a statewide basis include diesel exhaust particulate matter (diesel PM), benzene, and 1,3-butadiene, all of which are emitted by motor vehicles. These mobile source air toxics are largely associated with freeways and high traffic roads. Non-mobile source air toxics are largely associated with industrial and commercial uses. Table 3.2-11 provides the California Air Resources Board minimum separation recommendations on siting sensitive land uses.

The CARB recommends avoiding placing new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles per day. The Project site is not within 500 feet of any highway or interstate (the closest highway, CA-16, is located more than 2.5 miles to the south of the Project site). Moreover, the Project site is not located adjacent to any major roadways, and Project sensitive receptors would not be located within 500 feet of roadways with traffic volumes of 50,000 vehicles/day or greater. Therefore, the site lies beyond the CARB-recommended buffer area, and future receptors would not be negatively affected by toxic air contaminants generated on nearby roadways.

Separately, the CARB published a technical supplement to the *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) in 2017, entitled *Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways* (2017). This technical supplement provides planners and stakeholders involved in land use planning and decision-making with information on scientifically based strategies to reduce exposure to traffic emissions near high-volume roadways. Development of the Project would not preclude land use planners and decision-makers from incorporating emissions reduction strategies as contained within this technical supplement.

The Project is primarily a residential development, with some light commercial and recreation land uses. These land uses are not typically known to expose the public to substantial concentrations of TACs. In addition, there are no distribution centers, rail yards, ports, refineries, chrome platers, dry cleaners, or gasoline dispensing facilities located in the vicinity of the Project site. There are no major stationary sources of toxic air contaminants identified in the vicinity of the development site that could potentially affect future on-site sensitive receptors, and the Project would not be a large generator of diesel truck trips during Project operation. Therefore, development of the Project would not cause a substantial increase in exposure of sensitive receptors to localized concentrations of TACs. This Project would have a ***less than significant*** relative to this topic.

TABLE 3.2-~~11~~12 CARB MINIMUM SEPARATION RECOMMENDATIONS ON SITING SENSITIVE LAND USES

SOURCE CATEGORY	*ADVISORY RECOMMENDATIONS*
Freeways and High-Traffic Roads	• Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	• Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). • Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land

	uses near entry and exit points.
Rail Yards	• Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. • Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	• Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the CARB on the status of pending analyses of health risks.
Refineries	• Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	• Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloro- ethylene	• Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. • Do not site new sensitive land uses in the same building with perc dry cleaning operations.
Gasoline Dispensing Facilities	• Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities.

SOURCE: AIR QUALITY AND LAND USE HANDBOOK: A COMMUNITY HEALTH PERSPECTIVE" (CARB, 2007)

3.3 BIOLOGICAL RESOURCES

No changes were made to Section 3.3 of the Draft EIR.

3.4 CULTURAL AND TRIBAL RESOURCES

The following changes were made to pages 3.4-15 and 3.4-16 of Section 3.4 of the Draft EIR:

> ***Mitigation Measure 3.4-2:*** *If human remains are discovered during the course of construction during any phase of the Project, work shall be halted at the site and at any nearby area reasonably suspected to overlie adjacent human remains until the Sacramento County Coroner has been informed and has determined that no investigation of the cause of death is required. If the remains are of Native American origin, ~~either of~~ the following steps will be taken:*
>
> - *The coroner shall contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The most likely descendent~~coroner~~ shall make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.*
> - *The Shingle Springs Band of Miwok Indian shall be consulted to go over the process to protect any human remains, particularly if located along the on-site aquatic resources.*
>
> *The landowner shall retain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance when any of the following conditions occurs:*
>
> - *The Native American Heritage Commission is unable to identify a descendent.*
> - *The descendant identified fails to make a recommendation.*
> - *The City of Rancho Cordova or its authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.*

3.5 GEOLOGY AND SOILS

No changes were made to Section 3.5 of the Draft EIR.

3.6 GREENHOUSE GASES, CLIMATE CHANGE, AND ENERGY

The following changes were made to pages 3.2-22 through 3.2-37 of the Draft EIR:

Construction-related activities that would generate GHGs include worker commute trips, haul trucks carrying supplies, materials, and cut and fill to and from the Project site, and off-road construction equipment (e.g., dozers, loaders, excavators). Construction of the land uses on the Project site is expected to occur over several years. Annual unmitigated and mitigated construction emissions are summarized in Table 3.6-2, in units of metric tons per year (MT/year). It is noted that the benefit of the construction mitigation is negligible and provides a small reduction that is only shown at the hundredth or thousandth decimal place, as shown in the modeling results in Appendix B, so the difference is not discernible in the emissions presented in Table 3.6-2. Table 3.6-3 provides a summary of the construction emissions for those years with concurrent phases (i.e. for years where construction activities from more than one phase will overlap). ~~Table 3.6-2 represents both unmitigated and mitigated construction-related GHG emissions, since the measures provided within Mitigation Measure 3.6-1 would not affect the Project construction GHG emissions directly.~~

TABLE 3.6-2: SUMMARY OF UNMITIGATED AND MITIGATED CONSTRUCTION-RELATED GREENHOUSE GAS EMISSIONS (METRIC TONS/YEAR)

CONSTRUCTION YEAR	BIO-CO_2	NON-BIO CO_2	TOTAL CO_2	CH_4	N_2O	CO_2E
PHASE 1						
2020	0	948.8	948.8	0.2	0	953.9
2021	0	~~1,001.8~~713.7	713.7~~1,001.8~~	~~0.2~~0.1	0	~~1,006.1~~715.5
2022	0	~~1,070.7~~759.3	759.3~~1,070.7~~	~~0.2~~0.1	0	~~1,075.1~~761.0
2023	0	~~368.9~~266.4	266.4~~368.9~~	<0.1	0	~~370.3~~267.0
PHASE 2						
2022	0	~~226.0~~291.3	291.3~~226.0~~	0.1	0	~~227.4~~293.6
2023	0	~~579.1~~598.4	598.4~~579.1~~	0.1	0	~~580.8~~600.1
2024	0	~~800.9~~827.4	827.4~~800.9~~	0.1	0	~~803.1~~829.7
2025	0	~~482.5~~812.2	812.2~~482.5~~	0.1	0	~~483.8~~814.5
2026	0	491.5	491.5	0.1	0	492.8
PHASE 3						
2025	0	~~557.2~~622.0	622.0	0.2	0	~~561.3~~626.0
2026	0	~~1,169~~1,150.0	1,150.0~~1,169~~	0.1	0	~~1,171.5~~1,151.9
2027	0	~~1,582.0~~1,562.9	1,562.9~~1,582.0~~	0.2	0	~~1,587.7~~1,568.1
2028	0	~~1,250.3~~1,160.0	1,160.0~~1,250.3~~	~~0.2~~0.1	0	~~1,255.0~~1,162.1
2029	0	1,128.4	1,128.4	0.1	0	1,130.3
2030	0	877.6	877.6	<0.1	0	878.4
~~2029~~	~~0~~	~~111.5~~	~~111.5~~	~~<0.1~~	~~0~~	~~112.4~~
PHASE 4						
2030	0	~~304.3~~238.5	238.5~~304.3~~	<0.1	0	~~304.6~~238.8
2031	0	392.2~~388.4~~	392.2~~388.4~~	<0.1	0	392.6~~388.7~~
2032	0	519.4~~514.2~~	519.4~~514.2~~	<0.1	0	519.9~~514.7~~
2033	0	16.9~~21.7~~	16.9~~21.7~~	<0.1	0	16.9~~21.7~~
~~*PHASE 5*~~						

2034	0	628.2~~313.8~~	~~313.8~~628.2	<0.1	0	628.8~~314.2~~
2035	0	~~282.3~~317.3	317.3~~282.3~~	<0.1	0	317.5~~282.6~~
Threshold	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**1,100**
Above Threshold?	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**Y**

SOURCE: CALEEMOD (V.2016.3.2)

[1] TOTAL EMISSIONS IN THIS YEAR EXCEED THE THRESHOLD AS SHOWN IN TABLE 3.6-3.

NOTES: BIO-CO_2 REFERS TO BIOGENIC SOURCES OF CO_2. THE LOSS OF CARBON SEQUESTRATION FROM THE REMOVAL OF EXISTING VEGETATION IS ADDRESSED UNDER THE OPERATIONAL IMPACT DISCUSSION UNDER IMPACT 3.6-2. THE SMAQMD PROVIDES GHG THRESHOLDS ONLY FOR CO_2E, WHICH IS AN AGGREGATE OF ALL GHG EMISSIONS AS EXPRESSED IN TERM OF CO_2.

TABLE 3.6-3: SUMMARY OF UNMITIGATED AND MITIGATED CONSTRUCTION GREENHOUSE GAS EMISSIONS (METRIC TONS/YEAR) IN YEARS WITH CONCURRENT PHASES

YEAR	*BIO-CO_2*	*NON-BIO CO_2*	*TOTAL CO_2*	*CH_4*	*N_2O*	*CO_2E*
			2022			
Phase 1	0	759.3~~1,070.70~~	759.3~~1,070.70~~	0.1~~0.2~~	0	761.0~~1,075.10~~
Phase 2	0	291.3~~226~~	291.3~~226~~	0.1	0	293.6~~227.4~~
Total	**0**	**1,050.6~~1,296.7~~**	**1,050.6~~1,296.7~~**	**0.2~~0.3~~**	**0**	**1,054.6~~1,302.5~~**
			2023			
Phase 1	0	266.4~~368.9~~	266.4~~368.9~~	<0.1	0	267.0~~370.3~~
Phase 2	0	598.4~~579.1~~	598.4~~579.1~~	0.1	0	600.1~~580.8~~
Total	**0**	**864.8~~948~~**	**864.8~~948.0~~**	**0.1~~0.2~~**	**0**	**867.1~~951.1~~**
			2025			
Phase 2	0	812.2~~482.5~~	812.2	0.1	0	814.5~~483.8~~
Phase 3	0	622.0~~557.2~~	622.0~~557.2~~	0.2	0	626.0~~561.3~~
Total	**0**	**1,434.2~~1,039.7~~**	**1,434.2~~1,039.7~~**	**0.3**	**0**	**1,440.5~~1,045.1~~**
			2026			
Phase 2	0	491.5	491.5	0.1	0	492.8
Phase 3	0	1,150.0	1,150.0	0.1	0	1,151.9
Total	**0**	**1,641.5**	**1,641.5**	**0.2**	**0**	**1,644.7**
			2030			
Phase 3	0	877.6	877.6	<0.1	0	878.4
Phase 4	0	238.5	238.5	<0.1	0	238.8
Total	**0**	**1,116.1**	**1,116.1**	**0.2**	**0**	**1,117.2**
Maximum	**0**	**1,641.5~~1,296.7~~**	**1,641.5~~1,296.7~~**	**0.2~~0.3~~**	**0**	**1,644.7~~1,302.5~~**
Threshold	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**1,100**
Above Threshold?	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**Y**

SOURCE: CALEEMOD (V.2016.3.2); DE NOVO PLANNING GROUP, 2019

It is noted that construction phases would overlap in 2022, 2023, ~~and~~ 2025, 2026, and 2030 and emissions during these years would reflect concurrent development of multiple phases, as shown in Table 3.6-3.

The GHG emissions would be the greatest during year ~~2027~~2026 because that is the year when a large amount of building construction and architectural coatings for Phases 2 and 3~~, site~~

~~preparation, and grading for Phases 3 and 4, as well as grading and paving for the Rancho Cordova Parkway widening,~~ would occur. The GHG emissions threshold would also be exceeded during years ~~2022,~~ 2025, 2026, and 2030 (with Phases ~~1 and 2~~ combined), and during years 2027, 2028, and 2029~~2025, with Phases 2 and 3 combined, 2028, and 2029~~. Refer Section 3.2, Air Quality, for additional details on the construction schedule. Refer to Appendix B.1 for a detailed summary of the CalEEMod modeling assumptions, inputs, and outputs.

As presented in the table, short-term construction emissions of GHG associated with the Project are estimated to be a maximum of approximately ~~1,587.7~~1,644.7 MT CO_2e in a single year (year ~~2027~~2026). Construction GHG emissions are a one-time release and are, therefore, not expected to generate a significant contribution to global climate change in the long-term. Emissions from construction are above the SMAQMD construction phase threshold of 1,100 MT CO_2e/year. The SMAQMD recommends implementation of the mitigation measures in SMAQMD's Guidance for Construction GHG Emissions Reductions, as well as the SMAQMD's Basic Construction Emission Control Practices (BCECP), as reflected in Mitigation Measure 3.6-1 and Mitigation Measure 3.6-2, respectively. However, reductions associated with many of the components of Mitigation Measure 3.6-1 and Mitigation Measure 3.6-2 are not quantifiable by CalEEMod (CalEEMod does not provide the option to mitigate many components of these measures). As previously described, the reductions associated with construction mitigation measures modeled are negligible; nevertheless, SMAQMD-recommended GHG mitigation measures would result in a slight reduction in construction GHGs and quantifiable reductions (which occur at the hundredth and thousandth decimal places and thus are not reflected in Tables 3.6-2 and 3.6-3) are shown in Appendix B.

CONCLUSION

~~Therefore, d~~During the construction phase, the Project would be required to implement mitigation to reduce emissions to less than the SMAQMD construction phase threshold of 1,100 MT CO_2e/year. Separately, ~~T~~the SMAQMD *Guide to Air Quality Assessment in Sacramento County* allows for construction emissions to be amortized over the expected (long-term) operational life of a project. Therefore, construction emissions are amortized (as provided under Impact 3.6-2, below) and are also subject to Mitigation Measure 3.6-3~~1~~ (as provided under Impact 3.6-2). With implementation of Mitigation Measures 3.6-1 and 3.6-2, as provided below, and Mitigation Measure 3.6-3, as provided under Impact 3.6-2)~~Mitigation Measure 3.6-1,~~ the Project would have a ***less than significant*** impact relative to this topic.

MITIGATION MEASURE(S)

Mitigation Measure 3.6-1: *The Project applicant shall implement the following best management practices (BMPs) for reducing GHG emissions from construction projects, as feasible. The City of Rancho Cordova shall be responsible for monitoring implementation of these measures:*

- *Improve fuel efficiency from construction equipment:*
  - *Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than 3 minutes (5 minute limit is required by the state airborne toxics control measure [Title 13, sections 2449(d)(3) and 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site.*

- *Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.*
- *Train equipment operators in proper use of equipment.*
- *Use the proper size of equipment for the job.*
- *Use equipment with new technologies (repowered engines, electric drive trains).*

- *Perform on-site material hauling with trucks equipped with on-road engines (if determined to be less emissive than the off-road engines).*
- *Use alternative fuels for generators at construction sites such as propane or solar, or use electrical power, as feasible.*
- *Use an ARB approved low carbon fuel for construction equipment. (NOx emissions from the use of low carbon fuel must be reviewed and increases mitigated.), as applicable.*
- *Encourage and provide carpools, shuttle vans, transit passes and/or secure bicycle parking for construction worker commutes.*
- *Reduce electricity use in the construction office by using compact fluorescent bulbs, powering off computers every day, and by using efficient heating and cooling units.*
- *Recycle or salvage non-hazardous construction and demolition debris (goal of at least 75% by weight).*
- *Use locally sourced or recycled materials for construction materials (goal of at least 20% based on costs for building materials, and based on volume for roadway, parking lot, sidewalk and curb materials). Wood products utilized should be certified through a sustainable forestry program.*
- *Minimize the amount of concrete for paved surfaces or utilize a low carbon concrete option.*
- *Produce concrete on-site if determined to be less emissive than transporting ready mix.*
- *Use SmartWay certified trucks for deliveries and equipment transport.*
- *Develop a plan to efficiently use water for adequate dust control.*

Mitigation Measure 3.6-2: *The Project applicant shall implement the following Basic Construction Emissions Control Practices (BCECP) BMPs for reducing emissions from construction projects, as feasible. The City of Rancho Cordova shall be responsible for monitoring implementation of these measures:*

- *Control fugitive dust as required by District Rule 403 and enforced by District staff.*
- *Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.*
- *Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.*
- *Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.*
- *Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).*
- *All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.*

- *For diesel-powered fleets working at the construction site:*
  - *Provide current certificate(s) of compliance for CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation [California Code of Regulations, Title 13, sections 2449 and 2449.1]. For more information contact CARB at 877-593-6677, doors@arb.ca.gov, or* www.arb.ca.gov/doors/compliance_cert1.html

Impact 3.6-2: The Project has the potential to generate operation-related GHGs, either directly or indirectly, that may have a significant effect on the environment (Less than Significant with Mitigation)

The Project is anticipated to be fully developed (i.e. achieve buildout) by approximately 2035. However, partial buildout (completion of Phase 1) could occur as soon as 2023. The long-term operational GHG emissions estimate for the Project incorporates the Project's potential area source and vehicle emissions, and emissions associated with utility and water usage, and wastewater and solid waste generation. The modeling also reflects a loss of carbon sequestration from the loss of existing trees and vegetation, as well as the benefits of carbon sequestration from the installation of new trees within the Project site.

Project Operational Characteristics

CalEEMod was used to estimate operational emissions for the Project. As described in Section 3.2, Air Quality, the CalEEMod model only allows some Project characteristics to be modeled as "mitigation" for the purposes of the model; therefore, the "mitigated" Project scenario modeled in the unmitigated CalEEMod run represents reductions associated with Project characteristics that reduce emissions.

A summary of the Project characteristics that reduce GHG emissions is provided below (note: the associated CalEEMod measure is provided in brackets). For further detail, see the list of sustainability features and other Project details as provided in Chapter 2.0, Project Description.

- Density to 6.~~86~~ 66 dwelling units per acre (1,690 dwelling units divided by 253.87 residential acres (gross). [Traffic Mitigation, LUT-1];
- ~~Increase diversity through single family residential, multi-family residential, commercial, parks and recreation, and senior uses [Traffic Mitigation, LUT-3];~~
- Improve walkability design (a ratio of 144.9~~123.53~~ intersections per square miles, as shown on the Tentative Subdivision Map.) [Traffic Mitigation, LUT-9];
- ~~Improve destination accessibility (12.3 miles) [Traffic Mitigation LUT-4];~~
- Increase transit accessibility (Project site would include on-site transit facilities for the City's Signature Transit Route as identified in the SPA Handbook) – average distance to transit for Project residents would be approximately 0.25 miles.) [Traffic Mitigation, LUT-5];
- Improve pedestrian network (Project site and connecting off-site. The Project would include pedestrian improvements that provide connectivity between the internal components of the Project, as well as to adjacent existing and future developments. The Project would provide for future connections to an extension of Chrysanthy Boulevard and planned development east of the Project site, a connection to an existing trail located north of the site, connections south of the site via a pedestrian connection at North Campus Road, and connections to the existing and future uses to the west of the site.) [Traffic Mitigation, SDT-1];

- Provide traffic calming measures (50% of streets and intersections with improvements as shown on the Tentative Subdivision Map and identified in the SPA Handbook. Traffic calming features incorporated into the Project include street design features, such as narrower streets, limited single-loaded streets, parking on both sides of the street, posted speed limit signs, planter strips with street trees, and horizontal shifts (lane centerline that curves or shifts), and intersection traffic calming features, including marked crosswalks, count-down signal timers where appropriate, curb extensions, channelization islands, median islands, and tight corner radii.) [Traffic Mitigation, SDT-2];
- Install electric vehicle (EV) charging stations throughout the Project site, such that at least 50% of single-family residences and 5% of parking spaces within the commercial, park and recreation, and multi-family land uses will have EV charging stations, as identified in the SPA Handbook. [Traffic Mitigation SDT-3];
- Expand transit network; the Project will provide a transit stop as provided in the SPA Handbook. [Traffic Mitigation, TST-3];
- Plant a minimum of 2,240 new trees throughout the Project site [4.11.2-Sequestration];
- No hearths, as recommended by the SMAQMD in the *SMAQMD Tips for Using CalEEMod* (February 2019.) [Area Mitigation];
- Use low-VOC paint for architectural coatings (7550 EF g/L) (Note: this VOC value represents the average VOC level for architectural coatings in the SMAQMD jurisdiction, as provided via correspondence with the SMAQMD.);
- Install energy efficient (i.e. LED or better lighting) for all outdoor lighting, as identified in the SPA Handbook ~~(for outdoor lighting)~~ [Energy Mitigation, LE-1];
- Generate 95% or more of electricity via renewable energy (on-site energy generation and/or contract with SMUD) [Energy Mitigation, AE-1, AE-2, AE-3], as identified in the SPA Handbook.;
- Install energy efficient *(i.e. Energy Star)* appliances [Energy Mitigation, BE-4] , as identified in the SPA Handbook.;
- Install low-flow appliances (bathroom faucet, kitchen faucet, toilet, and shower) [Water Mitigation, WUW-1] , as identified in the SPA Handbook.;
- Use water-efficient irrigation systems (automatic rain shut-off, maximum gallon per minute restriction, WiFi connectivity), as identified in the SPA Handbook [Water Mitigation, WUW-4]; and
- Minimize turf for residential uses to 70% less than the maximum allowed turf area, as identified in the SPA Handbook. [Water Mitigation, WUW-5].

Furthermore, as discussed in Section 3.2, Air Quality, the Project would implement all feasible SMAQMD BMPs for particulate matter emissions from land use development projects. The SMAQMD BMPs are required by existing regulations. The following list identifies the BMPs for operational PM emissions for land use development projects that would also contribute to a reduction in GHGs:

- Compliance with the mandatory measures in the California Building Energy Efficiency Standards (Title 24, Part 6) that pertain to efficient use of natural gas for space and water heating and other uses at residential or non-residential land uses.

- Compliance with mandatory measures in the California Green Building Code (Title 24, Part 11). Current mandatory measures related to operational PM include requirements for bicycle parking, parking for fuel-efficient vehicles, electric vehicle charging, and fireplaces for non-residential projects. Residential project measures include requirements for electric vehicle charging and fireplaces.

- Compliance with anti-idling regulations for diesel-powered commercial motor vehicles (greater than 10,000 gross vehicular weight rating). This BMP focuses on non-residential land use projects (retail and industrial) that would attract these vehicles.

Unmitigated Project Emissions

For Table 3.6-4, two mobile source scenarios are provided: the first scenario shows mobile source emissions inclusive of all Project trips, whilst a second scenario for the mobile emissions category ("Mobile Emissions Category Excluding Car and Light-Duty Truck Trips") shows Project mobile category emissions without emissions from car and light-duty truck trips (consistent with the SB 375 CEQA streamlining benefit for "Mixed-Use Residential Projects", for which the Project qualifies).

TABLE 3.6-4: UNMITIGATED OPERATIONAL GHG EMISSIONS AT PROJECT BUILDOUT (METRIC TONS/YEAR)

CATEGORY	BIO- CO_2	NON-BIO- CO_2	TOTAL CO_2	CH_4	N_2O	CO_2E
Area	0	~~29.1~~28.5	~~29.1~~28.5	<0.1	0	29.8~~1~~
Energy	0	~~1,758.7~~1,732.0	~~1,758.7~~1,732.0	<0.1	<0.1	~~1,768.9~~1,742.0
Mobile	0	~~6,834.0~~7,171.8	7,171.8~~6,834.0~~	0.3	0	~~6,840.5~~7,178.6
Waste	2~~52.0~~48.4	0	248.4~~252.0~~	14.9~~7~~	0	~~624.5~~615.4
Water	~~32.5~~31.8	~~199.4~~201.4	~~231.9~~233.2	0.1	0.1	~~256.6~~257.4
Total	**~~284.5~~80.3**	**~~8,821.2~~9,133.6**	**~~9,105.7~~9,413.9**	**15.3~~1~~**	**0.1**	**~~9,520.1~~9,822.7**
MOBILE EMISSIONS CATEGORY EXCLUDING CAR AND LIGHT-DUTY TRUCK TRIPS						
Mobile	0	~~3,063.4~~3,203.8	3,203.8~~3,063.4~~	0.2	0	~~3,068.8~~3,209.5
Total	**280.2~~284.5~~**	**~~5,050.60~~5,163.3**	**~~5,335.1~~5,443.5**	**~~15.2~~15.1**	**0.1**	**~~5,748.6~~5,851.2**

SOURCE: CALEEMOD (V.2016.3.2)

As shown in Table 3.6-4 the Project's operational GHG emissions would equal approximately ~~5,748.6~~5,851.2 MT CO_2e/year, when removing the emissions from car and light-duty truck trips, per the SB 375 CEQA streamlining benefits.

In addition to the emissions shown in Table 3.6-4, the CalEEMod results also identify the sequestration loss from existing vegetation as well as the benefits of ~~of~~ carbon sequestration from the installation of new trees within the Project site. As a conservative estimate, the loss of existing vegetation (annual grasslands) was estimated to generate a one-time loss (from carbon sequestration) of approximately 1,083.3 MT CO_2e.[6] If amortized over a 30-year period, this loss represents an approximate carbon sequestration loss of 36.11 MT CO_2e/year. However, installation of new trees within the Project site is expected to sequester approximately 1,585.9 MT CO_2e. If amortized over a 30-year period, this represents an approximate carbon sequestration gain of 52.86

[6] Note: for the purposes of modeling, it was assumed that the Project site currently consists of "Grassland". The proposed project was assumed to remove an amount of "Grassland" representative of the land area to be developed (not including the open space areas that would be preserved upon proposed project buildout).

MT CO_2e/year. Combined with the loss from existing vegetation, the net change to carbon sequestration due to development of the Project at full buildout is expected to be approximately 502.6 MT CO_2e, or 16.8 MT CO_2e/year. This carbon sequestration gain (i.e. net reduction in Project GHG emissions) is in addition to the Project unmitigated operational GHG emissions provided in Table 3.6-3.

Separately, as provided under Impact 3.6-1, construction emissions as modeled by CalEEMod would total approximately ~~12,014.9~~14,359.4 CO_2e/year over the life of the Project. If amortized over a 40-year period (consistent with SMAQMD guidance)[7], total amortized construction emissions would be equivalent to ~~200.4~~359.0 CO_2e/year.

When carbon sequestration and amortized construction emissions are included in the calculation, the Project's net annual unmitigated GHG emissions would equal ~~5,446.46~~6,205.9 MT CO_2e/year, as shown in Table 3.6-5, which exceeds the SMAQMD threshold of 1,100 MT CO_2e/year. Therefore, the Project is required to implement all feasible mitigation to reduce Project operational GHG emissions to a below the applicable threshold of significance.

TABLE 3.6-5: UNMITIGATED OPERATIONAL GHG EMISSIONS AT PROJECT BUILDOUT (~~METRIC TONS/YEAR~~WITH NET CARBON SEQUESTRATION AND NET CONSTRUCTION AMORTIZATION INCLUDED)

CATEGORY	*MT CO_2E/YEAR*
Total Area, Energy, Mobile, Waste, and Water Emissions (Table 3.~~4~~6-3)	5,851.2~~5,748.6~~
Net Carbon Sequestration (Reduction)[1]	<~~502.6~~16.8>
Net Construction Amortization (Gain)[2]	~~200.4~~359.0
Total	**~~5,446.46~~6,193.4**

[1] ONE-TIME LOSS OF APPROXIMATELY 1,083.3 MT CO_2E AMORTIZED OVER A 30-YEAR PERIOD REPRESENTS AN APPROXIMATE CARBON SEQUESTRATION LOSS OF 36.11 MT CO_2E/YEAR ASSOCIATED WITH REMOVAL OF EXISTING VEGETATION DUE TO PROJECT CONSTRUCTION. INSTALLATION OF NEW TREES AS PART OF THE PROJECT WOULD SEQUESTER APPROXIMATELY 1,585.9 MT CO_2E, REPRESENTS AN APPROXIMATE CARBON SEQUESTRATION GAIN OF 52.86 MT CO_2E/YEAR IF AMORTIZED OVER A 30-YEAR PERIOD. WHEN COMBINED, THIS REPRESENTS A NET GAIN OF APPROXIMATELY 16.8 MT CO_2E/YEAR.

[2] CONSTRUCTION EMISSIONS WOULD TOTAL APPROXIMATELY ~~12,014.9~~14,359.4 CO_2E/YEAR OVER THE LIFE OF THE PROJECT (SEE IMPACT 3.6-1). WHEN AMORTIZED OVER A 40-YEAR PERIOD, TOTAL AMORTIZED CONSTRUCTION EMISSIONS WOULD BE EQUIVALENT TO ~~200.4~~359.0 CO_2E/YEAR.

SOURCE: CALEEMOD (V.2016.3.2)

Mitigated Project Emissions

The Project has been designed and planned to incorporate a substantial amount of available mitigation. As shown in the Project's GHG Reduction Plan (see Mitigation Measure 3.6-~~1~~3), which addresses both Project features that provide~~d~~ GHG reductions as well as additional mitigation measures to reduce GHG emissions, the Project has been designed to incorporate the majority of CalEEMod measures identified by SMAQMD as appropriate for reducing GHG emissions. These measures are described previously under the Project Operational Characteristics heading. In reviewing GHG reduction measures identified by SMAQMD as included in CalEEMod and appropriate for reducing GHG emissions, an additional three measures were identified as applicable to the Project, as described below:

- Implement Trip Reduction Program (100% of employees eligible; voluntary) [Traffic Mitigation, TRT-1 and TRT-2];
- Exceed Title 24 (2% improvement) [Energy Mitigation, BE-1]; and

[7] As provided on page 6-14 of the SMAQMD's Guide to Air Quality Assessment in Sacramento County (2018).

- Apply Water Conservation Strategy (25% reduction in outdoor water consumption) [Water Mitigation WUW-2].

The following reduction measures were reviewed and were determined to not be applicable to the Project, as described below, and were not selected as part of the CalEEMod modeling:

- Increase Density [LUT-1[: Not applicable; the Project is under minimum density required (eight units per acre).
- Increase Diversity of Land Uses [LUT-3]: The Project provides single family residential, multifamily residential, commercial, senior community clubhouse, parks and recreation, and open space land uses; the VMT reduction associated with these land uses is reflected in the trip reductions included in Section 3.13, Transportation and Circulation.
- Increase Transit Accessibility [LUT-5]: While Project would provide a transit stop for the planned regional transit line, transit is currently limited in the area.
- Integrate Below Market Rate Housing [LUT-6]: Not applicable. The Project includes two multifamily components, but does not include affordable housing.
- Limit Parking Supply [PDT-1]: The suburban context of the Project is not appropriate for this measure.
- Unbundle Parking Costs [PDT-2]: Not applicable. Project design incorporates garages into the single family residential units and does not have significant opportunities for unbundled parking costs.
- Provide a Bus Rapid Transit (BRT) System [TST-1]: Not applicable; while the Project will provide for an expanded transit system through providing a transit stop in accordance with the City's transit plan, it will not create an independent funding source for transit.
- Expand Transit Network [TST-3]: Not applicable; while the Project will provide for an expanded transit system through providing a transit stop in accordance with the City's transit plan, it will not create an independent funding source for transit.
- Increase Transit Frequency [TST-4]: Not applicable; while the Project will provide for an expanded transit system through providing a transit stop in accordance with the City's transit plan, it will not create an independent funding source for transit that would reduce headways.
- Use Reclaimed Water [WSW-1]: Not applicable; nonpotable water is not available to the Project site.
- Use Grey Water [WSW-2]: Not applicable; the Project does not have significant opportunities to reuse onsite water.
- Institute Recycling and Composting Services [SW-1]: The Project will comply with the City's recycling requirements. Credit is not taken for this measure.

Table 3.6-6 provides the mitigation operational GHG emissions at project buildout in year 2035.

TABLE 3.6-6: ~~UNMITIGATED~~ MITIGATED OPERATIONAL GHG EMISSIONS AT PROJECT BUILDOUT (METRIC TONS/YEAR)

CATEGORY	BIO- CO_2	NON-BIO- CO_2	TOTAL CO_2	CH_4	N_2O	CO_2E
Area	0	~~29.1~~28.5	28.5~~29.1~~	<0.1	0	29.8~~1~~
Energy	0	~~1,730.7~~1,704.3	1,704.3~~1,730.7~~	<0.1	<0.1	~~1,740.8~~1,714.3
Mobile	0	~~6,640.6~~6,968.7	6,968.7~~6,640.6~~	0.3	0	~~6,646.9~~6,975.4
Waste	2~~52.0~~48.4	0	248.4~~252.0~~	14.7~~9~~	0	~~624.3~~615.5
Water	39.8~~40.6~~	~~214.5~~215.0	~~255.1~~254.8	~~0.2~~0.1	0.1	~~285.9~~285.0

Total	**2~~92.6~~88.2**	**~~8,907.5~~9,204.8**	**~~8,614.9~~8,916.2**	**~~15.4~~15.2**	**0.1**	**~~9,327.6~~9,619.3**
MOBILE EMISSIONS CATEGORY EXCLUDING CAR AND LIGHT-DUTY TRUCK TRIPS						
Mobile	0	~~2,987.7~~3,124.6	~~2,982.3~~3,119.0	0.2	0	~~2,982.3~~3,119.0
Total	**~~292.6~~288.2**	**~~5,249.2~~5,353.2**	**~~4,956.6~~5,065.0**	**~~15.3~~15.1**	**~~0.1~~0.1**	**~~5,668.5~~5,766.5**

SOURCE: CALEEMOD (V.2016.3.2)

As shown in Table 3.6-6, the Project's operational GHG emissions would equal approximately 5,~~668.5~~766.5 MT CO_2e/year, when removing the impact from car and light-duty truck trips, per the SB 375 CEQA streamlining benefits.

In addition to the emissions shown in Table 3.6-6, the CalEEMod results also identify the sequestration loss from existing vegetation as well as the benefits of carbon sequestration from the installation of new trees within the Project site. As a conservative estimate, the loss of existing vegetation (annual grasslands) was estimated to generate a one-time loss (from carbon sequestration) of approximately 1,083.3 MT CO_2e.[8] If amortized over a 30-year period, this loss represents an approximate carbon sequestration loss of 36.11 MT CO_2e/year. However, installation of new trees within the Project site is expected to sequester approximately 1,585.9 MT CO_2e. If amortized over a 30-year period, this represents an approximate carbon sequestration gain of 52.86 MT CO_2e/year. Combined with the loss from existing vegetation, the net change to carbon sequestration due to development of the Project at full buildout is expected to be approximately 502.6 MT CO_2e, or 16.8 MT CO_2e/year. This carbon sequestration gain (i.e. net reduction in Project GHG emissions) is in addition to the Project ~~un~~mitigated operational GHG emissions provided in Table 3.6-~~3~~6.

Separately, as provided under Impact 3.6-1, construction emissions as modeled by CalEEMod would total approximately ~~12,014.9~~14,359.4 CO_2e/year over the life of the Project. If amortized over a 40-year period (consistent with SMAQMD guidance)[9], total amortized construction emissions would be equivalent to ~~200.4~~359.0 CO_2e/year.

When carbon sequestration and amortized construction emissions are included in the calculation, the Project's net annual mitigated GHG emissions would equal ~~5,336.3~~6,108.7 MT CO_2e/year, as shown in Table 3.6-7. Additionally, with the mitigation to purchase carbon offsets applied, the proposed project would reduce emissions below the 1,100 MT CO_2e threshold (to 1,099.9 MT CO_2e). Therefore, the Project is required to implement all feasible mitigation to reduce Project operational GHG emissions to a below the applicable threshold of significance.

[8] Note: for the purposes of modeling, it was assumed that the Project site currently consists of "Grassland". The proposed project was assumed to remove an amount of "Grassland" representative of the land area to be developed (not including the open space areas that would be preserved upon proposed project buildout).

[9] As provided on page 6-14 of the SMAQMD's Guide to Air Quality Assessment in Sacramento County (2018).

TABLE 3.6-7: ~~UNMITIGATED~~ MITIGATED OPERATIONAL GHG EMISSIONS AT PROJECT BUILDOUT (~~METRIC TONS/YEAR~~WITH NET CARBON SEQUESTRATION AND NET CONSTRUCTION AMORTIZATION INCLUDED)

CATEGORY	MT CO_2E/YEAR
Total Area, Energy, Mobile, Waste, and Water Emissions (Table 3.4~~6~~-~~36~~)	5,766.5~~5,668.5~~
Net Carbon Sequestration (Reduction)[1]	<~~502.6~~16.8>
Net Construction Amortization (Gain)[2]	359.0~~200.4~~
Total without Carbon Offsets	**~~5,336.36~~6,108.7**
GHG Emission Reductions Estimated to be Required by Carbon Offsets to Reduce Project GHG Emissions to below 1,100 MT CO_2e (Reduction)	**<5,008.8>**
Total with Carbon Offsets	**1,099.9**

[1] *ONE-TIME LOSS OF APPROXIMATELY 1,083.3 MT CO_2E AMORTIZED OVER A 30-YEAR PERIOD REPRESENTS AN APPROXIMATE CARBON SEQUESTRATION LOSS OF 36.11 MT CO_2E/YEAR ASSOCIATED WITH REMOVAL OF EXISTING VEGETATION DUE TO PROJECT CONSTRUCTION. INSTALLATION OF NEW TREES AS PART OF THE PROJECT WOULD SEQUESTER APPROXIMATELY 1,585.9 MT CO_2E, REPRESENTS AN APPROXIMATE CARBON SEQUESTRATION GAIN OF 52.86 MT CO_2E/YEAR IF AMORTIZED OVER A 30-YEAR PERIOD. WHEN COMBINED, THIS REPRESENTS A NET GAIN OF APPROXIMATELY 16.8 MT CO_2E/YEAR.*

[2] *CONSTRUCTION EMISSIONS WOULD TOTAL APPROXIMATELY 14,359.0 CO_2E FOR CONSTRUCTION ALL PHASES OF THE PROJECT (SEE IMPACT 3.6-1). WHEN AMORTIZED OVER A 40-YEAR PERIOD, TOTAL AMORTIZED CONSTRUCTION EMISSIONS WOULD BE EQUIVALENT TO 359.0 CO_2E/YEAR~~CONSTRUCTION EMISSIONS WOULD TOTAL APPROXIMATELY 12,014.9 CO_2E/YEAR OVER THE LIFE OF THE PROJECT (SEE IMPACT 3.6-1). WHEN AMORTIZED OVER A 40-YEAR PERIOD, TOTAL AMORTIZED CONSTRUCTION EMISSIONS WOULD BE EQUIVALENT TO 200.4 CO_2E/YEAR.~~*

SOURCE: CALEEMOD (V.2016.3.2)

CONSISTENCY WITH THE DRAFT RECOMMENDED LAND USE OPERATIONAL GHG THRESHOLDS

The following discussion provides an analysis of the Project's compliance with the draft recommended land use operational GHG thresholds that are currently under consideration by the SMAQMD.

The Project includes both residential and non-residential components, and is not expected to achieve full buildout until approximately 2035. Therefore, the GHG per service population threshold for year 2036 (as provided in Table 3.6-1) was selected the purposes of comparing Project operational GHG emissions to the new draft recommended land use thresholds of significance for GHG emissions. As provided in Table 3.6-1, the proposed project would need to reach a GHG per capita threshold of 2.94 MT CO_2e/year or a service population threshold of 2.05 MT CO_2e/year in 2036. Operational emissions for 2035 are used as a proxy for year 2036 (carbon efficiency is expected to improve in California over time, so this serves as a conservative estimate).

The residential population of the Project is expected to be ~~4,319~~4,242 persons and the number of employees within the Project at buildout is estimated at 106 employees, as described in Chapter 2.0, Project Description. Therefore, the service population for the Project would be 4,425. With total operational emissions for the Project at approximately 6,108.7 ~~5,336.3~~ MT CO_2e/year, as shown in Table 3.6-7, the GHG per service population thresholds would equal approximately 1.~~21~~ 44 MT CO_2e/year. Therefore, the Project would achieve the year 2036 GHG/capita thresholds of 2.05 MT CO_2e/service population under the mitigated scenario. Additionally, the Project would comply with the per capita threshold of 2.94 MT CO_2e/year. Nevertheless, since the SMAQMD's recommended Land Use Operational Thresholds of Significance ~~GHG/service population thresholds~~ are not yet final, the existing 1,100 MT CO_2e thresholds for operational GHG emissions that is currently in place is used as the basis for the analysis of the Project's operation-related GHGs emissions.

CONCLUSION

Even with inclusion of the aforementioned Project characteristics, the Project would not meet the operational level emissions threshold as currently provided by the SMAQMD. Therefore, the Project would be required to implement Mitigation Measure 3.6-~~1~~3, which requires the Project applicant to implement additional features in the Project that would reduce GHG emissions, including membership of Project components (residential communities, commercial uses, and parks and recreation uses), in a Transportation Management Association, increased efficiency beyond the minimum requirements of Title 24, use of native and drought-tolerant landscaping and trees, and purchasing carbon offsets. With implementation of Mitigation Measure 3.6-~~1~~3, the Project would have a ***less than significant*** impact relative to this topic.

MITIGATION MEASURE(S)

Mitigation Measure 3.6-~~1~~3: *The Project shall comply with the GHG Reduction Plan for The Ranch throughout all phases of Project construction and operation.*

The Ranch GHG Reduction Plan

The Project shall implement all measures shown in the table below that are identified as ~~"Incorporated into Project Design" or~~ "Mitigation Measure" in order to reduce the Project's net operational emissions, including amortized construction emissions, to an emissions level that meet the SMAQMD threshold for GHG emissions. It is noted that incorporation of the three SMAQMD-Recommended CalEEMod Measures to Reduce GHGs that are identified specifically as "Mitigation Measures" in the below table, would reduce the Project's net operational emissions, including amortized construction emissions, to approximately ~~5,336.3~~1,099.9 MT CO_2e, as shown ~~in Table 3.6-7 of the Draft EIR. Implementation of the required carbon offset purchase, as described in the below table, will ensure that the Project meets SMAQMD thresholds as it ensures the Project will purchase adequate carbon offsets to reduce all remaining emissions over SMAQMD thresholds to a level that meets the threshold~~below. It is noted that the CalEEMod measures incorporated into the Project design are also included in the GHG Reduction Plan to ensure that these measures are carried forward and reflected in all phases of the Project.

	MT CO2e
Unmitigated Operational and Amortized Construction GHG Emissions (Reflects all CalEEMod Measures that are incorporated into Project design (Table 3.6-5)	6,193.4
Mitigated Operational and Amortized Construction GHG Emissions (reflects CalEEMod Measures TRT-1, TRT-2, BE-1, WUW-2) (Table 3.6-7)	*6,108.7*
Reduction Associated with CalEEMod Mitigation Measures (5,720.1-5,635.4)	<84.7>
GHG Emission Reductions Estimated to be Required by Carbon Offsets to Reduce Project GHG Emissions to below 1,100 MT CO_2e (Reduction)	<5,008.8>
Total with Supplemental CalEEMod Measures TRT-1, TRT-2, BE-1, and WUW-2	**1,099.9**

TABLE 3.6-8: GHG REDUCTION PLAN

GHG REDUCTION MEASURE	*APPLICABILITY*	*IMPLEMENTATION*
SMAQMD-RECOMMENDED CALEEMOD MEASURE TO REDUCE GHGS[1]		
~~LUT-1 Increase Density: Project more dense than typical developments~~	~~Not applicable. Project is under minimum density required (eight units per acre).~~	~~Not applicable.~~
~~LUT-3 Increase Diversity of Land Uses: Different types of land uses are near each other~~	~~Incorporated into Project Description. Project provides single family residential, multifamily residential, commercial, senior community clubhouse, parks and recreation, and open space land uses.~~	~~Included in Project design as described in the Project Description. No additional implementation required.~~
LUT-9 Improve Walkability Design: Walkable street network	Incorporated into Project Description. Project is designed with a walkable street pattern, with a ratio of ~~123.53~~144.9 intersections per square mile, multiple bicycle/pedestrian connections, an off-street trail system, and bicycle lanes to encourage walkability.	Included in Project design as described in the Project Description and based on intersections identified on TSM and in the TSM and site plan figures shown in the SPA Handbook. No additional implementation required.
~~LUT-4 Improve Destination Accessibility: Project close to regional employment or destination center~~	~~Incorporated into Project Description. Project is located 12.3 miles from a regional employment center in downtown Sacramento.~~	~~Included in Project design as described in the Project Description. No additional implementation required.~~
~~LUT-5 Increase Transit Accessibility: Project near high-quality transit~~	~~Not applicable. While Project would provide a transit stop for the planned regional transit line, transit is currently limited in the area.~~	~~Not applicable.~~
~~LUT-6 Integrate Below Market Rate Housing: Incorporates affordable housing~~	~~Not applicable. The Project includes two multifamily components, but does not include affordable housing.~~	~~Not applicable.~~
SDT-1 Improve Pedestrian Network: On-site pedestrian access network links all of project internally and externally	Incorporated into Project Description. Project is designed with a walkable street pattern, with a ratio of 144.9~~123.53~~ intersections per square mile, multiple bicycle/pedestrian connections, an off-street trail system, and bicycle lanes to encourage walkability.	Included in Project design as described in the Project Description based on pedestrian amenities shown on the TSM as well as those identified in the SPA Handbook. No additional implementation required.
SDT-2 Provide Traffic Calming Measures: Projects streets and intersections feature traffic calming features	Incorporated into Project Description. Project has been designed to include a range of traffic-calming street design features, such as narrower streets, limited single-loaded streets, parking on both sides of the street, posted speed limit signs, planter strips with street trees, bulb-outs, and horizontal shifts (lane centerline that curves or shifts), and intersection traffic calming features, including pedestrian push-buttons at three intersections, marked crosswalks, count-down signal timers where appropriate, curb extensions, channelization islands, median islands, and tight corner radii. Traffic calming street design features would be located on at least 50% of internal Projects streets and intersections.	Included in Project design as described in the Project Description and based on the features of the TSM and identified in the SPA Handbook. No additional implementation required.
SDT-3 Implement a Neighborhood Electric Vehicle (NEV) Network: Project provides a viable NEV network	Incorporated into Project Design. While the Project does not include a traditional NEV, the Project would support electric vehicle use through installing EV charging stations throughout the Project site, such that at least	Included in Project design as described in the Project Description and in the SPA Handbook. No additional implementation required.

3.0 REVISIONS

GHG REDUCTION MEASURE	*APPLICABILITY*	*IMPLEMENTATION*
	50% of single family residences and 5% of parking spaces within the commercial, park and recreation, and multi-family land uses will have EV charging stations to reduce reliance on gasoline-fueled vehicles.	
~~PDT-1 Limit Parking Supply: Parking supply below Institute of Transportation Engineers (ITE) rates~~	~~Not applicable. The suburban context of the Project is not appropriate for this measure.~~	~~Not applicable.~~
~~PDT-2 Unbundle Parking Costs: Parking cost separate from property costs~~	~~Not applicable. Project design incorporates garages into the single family residential units and does not have significant opportunities for unbundled parking costs.~~	~~Not applicable.~~
~~TST-1 Provide a Bus Rapid Transit (BRT) System: Establish a BRT line with permanent operational funding stream~~	~~Not applicable. While the Project will provide for an expanded transit system through providing a transit stop in accordance with the City's transit plan, it will not create an independent funding source for transit.~~	~~Not applicable.~~
~~TST-3 Expand Transit Network: Establishes or enhances bus line with permanent operational funding stream~~	~~Not applicable. While the Project will provide for an expanded transit system through providing a transit stop in accordance with the City's transit plan, it will not create an independent funding source for transit.~~	~~Not applicable.~~
~~TST-4 Increase Transit Frequency: Reduces headways of existing transit~~	~~Not applicable. While the Project will provide for an expanded transit system through providing a transit stop in accordance with the City's transit plan, it will not create an independent funding source for transit that would reduce headways.~~	~~Not applicable.~~
TRT-1&2 Implement Trip Reduction Program: Transportation Management Association (TMA) membership or other comprehensive services	Mitigation Measure. Mitigation Measure 3.6-~~1~~ 3 requires the Project to join a Transportation Management Association (all employees located within the Project site to be eligible to participate).	Prior to issuance of occupancy permits for each construction phase of the Project, the Project applicant shall demonstrate that the residential, commercial, and parks and recreation uses associated with each phase have a permanent commitment, demonstrated through CC&Rs or comparable permanent mechanisms, ~~have joined~~to participate in a Transportation Management Association and ensures payment of annual fees for on-going participation. The Transportation Management Association shall grant all employees located within the Project site eligibility to participate).
BE-1 Exceed Title 24 California Code of Regulations, known as the California Building Standards Code (Title 24): Use less energy than allowed by Title 24	Mitigation Measure. Mitigation Measure 3.6-~~1~~ 3 requires the Project to exceed the 2016 Title 24 requirements by 2 percent.	Prior to issuance of building permits for each construction phase of the Project, including all residential, commercial, and parks and recreation uses, the Project applicant shall demonstrate that the phase exceeds the 2016 Title 24 requirements for energy use and

GHG REDUCTION MEASURE	*APPLICABILITY*	*IMPLEMENTATION*
		efficiency by a minimum of 2 percent. The documentation shall identify specific Project components, such as building materials and design, lighting improvements beyond the minimum required by LE-1, etc. and the associated reduction with each component beyond the Title 24 requirements.
LE-1 Install High Efficiency Lighting: Make use of high-efficient outdoor and public lighting	Incorporated into Project Design. The Project proposes to install energy-efficient (i.e., LED or better) lighting for all outdoor lighting.	Included in Project design as described in the Project Description and SPA Handbook. No additional implementation required.
BE-4 Energy Efficient Appliances: Use appliances more energy efficient than standard models	Incorporated into Project Design. The Project proposes to install energy-efficient appliances.	Included in Project design as described in the Project Description and SPA Handbook. No additional implementation required.
AE-1 On-site Renewable Energy: Establish on-site renewable energy. (No Ozone Precursor reductions if NO_x intensity is higher than electric utility.)	Incorporated into Project Design. The Project would generate a minimum of 95% of electricity via renewable energy via either on-site energy generation and/or through a contract with SMUD.	Included in Project design as described in the Project Description and SPA Handbook. No additional implementation required.
WUW-2 Apply Water Conservation Strategy: Reduce indoor and outdoor water use	Incorporated into Project Design. The Project landscaping would be drought-tolerant, sufficient to reduce outdoor water use by 25% compared to non-drought tolerant landscaping. The Project would also minimize the use of turf for residential uses to 70% less than the maximum allowed turf area to reduce water use. ~~would~~	Included in Project design as described in the Project Description and described in the SPA Handbook. No additional implementation required.
~~WSW-1 Use Reclaimed Water: Project utilizes non-potable water~~	~~Not applicable. Nonpotable water is not available to the Project site.~~	~~Not applicable.~~
~~WSW-2 Use Grey Water: Project reuses onsite water~~	~~Not applicable. The Project does not have significant opportunities to reuse onsite water.~~	~~Not applicable.~~
WUW-1 Install Low-Flow Bathroom Faucet, Install Low-Flow Kitchen Faucet, Install Low-flow Toilet, Install Low-flow Shower	Incorporated into Project Design. The Project proposes to install energy-efficient appliances.	Included in Project design as described in the Project Description and identified in the SPA Handbook. No additional implementation required.
WUW-5 Reduce Turf in Landscapes and Lawns: Use less turf than normal projects	Incorporated into Project Design. Minimize turf for residential uses to 70% less than the maximum allowed turf area to reduce water use.	Included in Project design as described in the Project Description and identified in the SPA Handbook. No additional implementation required.
WUW-4 Use Water-Efficient Irrigation Systems: Install a smart irrigation control system	Incorporated into Project Design. Use water-efficient irrigation systems (automatic rain shut-off, maximum gallon per minute restriction, WiFi connectivity) to reduce water waste.	Included in Project design as described in the Project Description. No additional implementation required.
WUW-3 Water Efficient Landscape: Plant native or	Mitigation Measure. Mitigation Measure 3.6-~~1~~ 3 requires the Project to incorporate a minimum of	Prior to approval of improvement plans for each phase of construction,

GHG REDUCTION MEASURE	*APPLICABILITY*	*IMPLEMENTATION*
drought-resistant trees and Vegetation	50 percent of native or drought-resistant trees and vegetation into the proposed landscaping, including landscaping lots, landscaping associated with parks and recreation facilities, and landscaping associated with residential uses. Project applicant shall demonstrate at least a 25% reduction in outdoor water use from implementation of this measure.	the Project applicant shall submit landscaping plans that demonstrate a minimum of 50 percent of of native or drought-resistant trees and vegetation are included in the non-turf component of proposed landscaping, including landscaping lots, parks and recreation lots and facilities, and residential uses.
~~SW-1 Institute Recycling and Composting Services: Project Recycles, Reduces, and Reuses~~	~~Incorporated into Project Design. The Project will comply with the City's recycling requirements. Credit is not taken for this measure.~~	~~Not applicable.~~
ADDITIONAL MEASURES (NOT MODELED IN CALEEMOD)		
Purchase Offsets.	Mitigation Measure. This Mitigation Measure 3.6-~~1~~ 3 requires the Project applicant to purchase carbon offsets to reduce net project operational and amortized construction emissions to less than SMAQMD's adopted threshold for GHG emissions.	Prior to issuance of the project's first building permit, the project applicant shall develop a SMAQMD-approved commitment to purchase carbon offsets sufficient to reduce project operational emissions and amortized construction emissions to less than SMAQMD's adopted threshold for GHG emissions that is in place at the time of the offset purchase. The purchase of carbon offsets may be prorated so that the offsets are paid concurrent with the approval of each project phase (small lot subdivision maps, multifamily parcel, etc.).

[1] *SMAQMD LAND USE EMISSIONS REDUCTIONS VERSION 4 (FOR OPERATIONAL EMISSIONS), SMAQMD, 2017.*

Impact 3.6-3: The Project has the potential to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases (Less than Significant with Mitigation)

The City of Rancho Cordova has not developed a qualified climate action plan or a GHG reduction plan. Therefore, the Project has been analyzed to determine consistency with State of California GHG reduction targets (as identified by AB 32, SB 32, and the Scoping Plan), the SACOG MTP/SCS, and Executive Order B-30-15 goals are provided below (per SMAQMD guidance contained within the SMAQMD CEQA Guide).

CONSISTENCY WITH THE SACOG MTP/SCS

The Project would be consistent with the planned-for development as provided with the MTP/SCS, and was therefore included within the SCS growth projections. When evaluating consistency with the MTP/SCS, the Project was reviewed as a mixed-use residential project located outside of a transit priority area. The Project meets the Public Resources Code Section 21159.28(a) requirements for a mixed-use residential project, with at least 75% of the total building square footage consisting of residential use, as approximately 98% of the Project's square footage would be residential (approximately 2,875,800 square feet residential uses divided by approximately 2,934,800 total building square feet).

The Project (the "Ranch at Sunridge" in the MTP/SCS) is located within a Developing Community and is consistent with the general uses envisioned for the site in the MTP/SCS. When determining consistency within a Developing Community, SACOG's Determination of MTP/SCS Consistency Worksheet indicates that the Project's average net density must meet or exceed the average net density described for the specific Developing Community. The proposed average net residential density of 10 units/acre exceeds the average net density of 7 units/acre described for the ~~the~~ Ranch at Sunridge (MTP/SCS Appendix E-3, p. 137); in comparison to earlier development proposals for this site, the area for total residential, commercial, and other development is limited by the Project's significant preservation of open space and wetland resources (approximately 199.5-acre wetland preserve). This preservation of open space is consistent with the environmental principles of the SCS. Employment-generating uses include the proposed senior clubhouse, commercial parcel, and parks and recreation uses, which are consistent with the commercial and public uses envisioned by the MTP/SCS (MTP/SCS Appendix E-3, p. 137). A Special Planning Area (SPA) Handbook has been prepared for the Project, which acts in a similar capacity to a Specific Plan, and is consistent with the MTP/SCS. The Project is consistent with the goals of the City of Rancho Cordova General Plan (see SPA Handbook for further detail). The Project provides for a high level of bicycle and pedestrian connectivity throughout the Project site, including non-auto connections to the parks, open space, and trails features of the Project. An open space and wetland preserve area is provided, preserving wetlands and aquatic resources on the site. A range of housing types (including single family market rate and senior units at a range of densities and lot sizes, senior congregate care units, and multifamily units) will serve a broad spectrum of households. As described in Section 3.2, Air Quality, comprehensive features and measures are provided to reduce GHG emissions, including use of renewable energy for the residential component of the Project, an EV charging network, and use of energy-efficient and water-conserving building and design practices.

As described above, the Project is consistent with the MTP/SCS general use designation, density and intensity, and applicable MTP/SCS policies. The Project is located in the "Developing Community" community type. Development from the Project when added to other entitled projects would not exceed the MTP/SCS buildout assumptions for the area within this Community type, which is 152,027 new housing units and 81,837 new employees.

Therefore, the Project is consistent with the MTP/SCS and qualifies for CEQA Streamlining under the 'Residential or Mixed-Use Residential Project Designation for Projects Located Outside of an MTP/SCS TPA' (see Appendix B.3 for the "Determination of MTP/SCS Consistency Worksheet"). Therefore, the Project would have a ***less than significant*** impact relative to consistency with this plan.

CONSISTENCY WITH STATE OF CALIFORNIA GHG REDUCTION TARGETS & EO B-30-15

The State of California has a target to reach 1990 GHG levels by 2020 (consistent with AB 32), 40 percent below 1990 levels by 2030 (consistent with EO B-30-15 and SB 32), and 80 percent below 1990 levels by 2050 (consistent with EO S-03-05). The SACOG MTP/SCS is required to be consistent with these targets. Since the Project is consistent with and has been planned for in the SACOG MTP/SCS, the Project would also be consistent with the California statewide reduction targets. The Project is also consistent with the CARB Scoping Plan, which is developed in coordination with the SACOG MTP/SCS. Therefore, the Project would have a ***less than significant*** impact relative to this threshold.

CONSISTENCY WITH THE SMAQMD CONSTRUCTION AND OPERATIONAL GHG THRESHOLDS

As previously described, the SMAQMD thresholds for construction-related and operational-related emissions is 1,100 MT CO_2e/year. The Project would not exceed these thresholds with implementation of mitigation, as described under Impact 3.6-1. With implementation of Mitigation Measure 3.6-~~1~~3, the Project would have a ***less than significant*** impact relative to this threshold.

CONCLUSION

As demonstrated in the analysis provided above, the Project is consistent with these adopted plans, and would assist the City and the State of California in achieving their adopted GHG reduction targets. The Project would also achieve the SMAQMD construction GHG emissions threshold of 1,100 MT CO_2e per year for construction-related emissions. Additionally, with Mitigation Measure 3.6-~~1~~3, the Project would offset sufficient GHG emissions to achieve the GHG emissions threshold of 1,100 MT CO_2e per year for operational-related emissions (inclusive of amortized construction-related emissions). Therefore, there is a ***less than significant*** impact relative to this topic.

The following changes were made to pages 3.6-38 through 3.6-42 of the Draft EIR:

ELECTRICITY AND NATURAL GAS

Electricity and natural gas used by the Project would be used primarily to power on-site buildings. Total annual electricity (kWh) and natural gas (kBTU) usage associated with the operation of the Project are shown in Table 3.6-8, below (as provided by CalEEMod). The Project incorporates feasible mitigation to reduce the Project's operational electricity and natural gas consumption. As shown, electricity usage within the Project site would be reduced by more than 95% between the unmitigated and mitigated scenarios (due to Project mitigation, including the measure to ensure that at least 95% of Project building electricity usage is derived from renewable sources).

TABLE 3.6-8: PROJECT OPERATIONAL NATURAL GAS AND ELECTRICITY USAGE (UNMITIGATED SCENARIO)

EMISSIONS	*NATURAL GAS (KBTU/YEAR)*	*ELECTRICITY (KWH/YEAR)*
Apartments Mid Rise	2,095,840	38,917
City Park	0	0
Other Asphalt Surfaces	0	0
Parking Lot	0	326
Regional Shopping Center	173,440	12,167
Retirement Community	459,751	~~142,243~~136,067
Retirement Community	8,~~916,760~~529,600	7,334
Single Family Housing	18,~~988,500~~911,000	~~261,857~~260,788
Total	**30,169,631~~30,634,291~~**	**~~462,844~~455,599**

SOURCE: CALEEMOD (V.2016.3.2)

According to CalEEMod's *Appendix A: Calculation Details for CalEEMod*, CalEEMod uses the California Commercial End Use Survey (CEUS) database to develop energy intensity value for non-residential buildings. The energy use from residential land uses is calculated based on the Residential Appliance Saturation Survey (RASS). Similar to CEUS, this is a comprehensive energy use assessment that includes the end use for various climate zones in California.

As shown in Table 3.6-8, Project operational energy usage would be reduced with implementation of Project components considered mitigation by CalEEMod (note: given the limited mitigation options available in the current version of CalEEMod, the reduction attributable to mitigation represents a conservative analysis). As described under Mitigation Measure 3.~~2~~6-1~~ (see Section 3.2, Air Quality)~~, the Project incorporates feasible mitigation that would reduce the Project's energy consumption, as compared to the unmitigated scenario. These reductions in overall Project energy usage also reflect a reduction in the Project's energy intensity.

ON-ROAD VEHICLES (OPERATION)

The Project would generate vehicle trips during its operational phase. Based on the traffic study prepared for the Project (Kimley Horn, 2019), the Project would generate approximately 11,~~606~~ 469 new daily vehicles trips[10]. In order to calculate operational on-road vehicle energy usage and emissions, default trip lengths generated by CalEEMod were used, which are based on the project location and urbanization level parameters De Novo (the EIR consultant) selected within CalEEMod (i.e. "Sacramento County" and "Urban", respectively). These values are provided by the individual districts or use a default average for the state, depending on the location of the Project (CAPCOA, 2017). Based on default factors provided by CalEEMod, the average distance per trip was conservatively calculated to be approximately 7.9 miles. The Project would generate at total of approximately 86,737 average daily vehicle miles travelled (average daily VMT). Using fleet mix data provide by CalEEMod (v2016.3.2), and Year ~~2026~~ 2035 gasoline and diesel MPG (miles per gallon) factors for individual vehicle classes as provided by EMFAC2014, De Novo derived weighted MPG factors for operational on-road vehicles of approximately 37.1 MPG for gasoline and 9.8 MPG for diesel vehicles. With this information, De Novo calculated as a conservative estimate that the unmitigated Project would generate vehicle trips that would use a total of approximately 2,186 gallons of gasoline and 566 gallons of diesel fuel per day, on average, or 798,060 gallons of gasoline and 206,430 annual gallons of diesel fuel per year.

ON-ROAD VEHICLES (CONSTRUCTION)

The Project would also generate on-road vehicle trips during Project construction (from construction workers and vendors). Estimates of vehicle fuel consumed were derived based on the assumed construction schedule, vehicle trip lengths and number of workers per construction phase as provided by CalEEMod (v 2016.3.2), and Year 2035 gasoline and diesel MPG factors provided by EMFAC2014. Table 3.6-9, below, describes gasoline and diesel fuel used by on-road mobile sources during each phase of the construction schedule. As shown, the vast majority of on-road mobile vehicle fuel used during the construction of the Project would occur during the building construction phase. See Appendix B.2 for a detailed calculation.

[10] For the purposes of ~~air quality and greenhouse gas emissions~~estimating energy consumption for on-road vehicle trips~~modeling~~ (i.e. CalEEMod), the average internal capture rate calculated by Kimley Horn (for AM and PM peak hours) was applied to Project trips.

TABLE 3.6-9: ON-ROAD MOBILE FUEL DEMAND GENERATED BY PROJECT CONSTRUCTION ACTIVITIES – BY PHASE

CONSTRUCTION PHASE	TOTAL DAILY WORKER TRIPS[A]	TOTAL DAILY VENDOR TRIPS[A]	TOTAL DAILY HAULING TRIPS[A]	GALLONS OF GASOLINE FUEL[B]	GALLONS OF DIESEL FUEL[B]
PHASE 1					
Site Preparation	18	0	0	~~315~~311	0
Grading	20	0	9,544	825	31,797
Paving	15	0	0	263	0
Building Construction	~~283~~303	~~61~~72	0	~~44,708~~47,867	~~31,882~~37,632
Architectural Coating	~~57~~61	0	0	~~9,020~~9,653	0
PHASE 2					
Improvements for Phase 2 ~~& Paving~~	~~23~~18	0	0	~~1,215~~636	0
Paving	15	0	0	263	0
Building Construction	~~290~~310	~~70~~73	0	~~47,612~~50,895	39,652~~38,022~~
Architectural Coating	62~~58~~	0	0	~~9,522~~14,541	0
PHASE 3					
Site Preparation	18	0	3,775~~3,181~~	291~~315~~	12,577~~10,598~~
Grading	20	0	0	609~~825~~	0
Paving	15	0	0	~~2,463~~267	0
Building Construction	~~535~~561	~~145~~159	0	~~87,835~~187,233	~~80,766~~180,037
Architectural Coating	~~107~~112	0	0	~~17,567~~37,440	0
Site Preparation for Rancho Cordova Widening	18	0	0	~~315~~951	0
Paving for Rancho Cordova Widening	15	0	0	~~2,463~~348	0
~~Site Preparation (Park Lot D)~~	~~18~~	~~0~~	~~0~~	~~315~~	~~0~~
PHASE 4					
Site Preparation for Multifamily	18	0	0	~~199~~107	0
Grading and Improvements for Multifamily	15	0	0	~~344~~356	0
Paving for Multifamily	15	0	0	~~263~~174	0
Building Construction for Multifamily	165~~71~~	28~~5~~	0	~~21,160~~20,417	~~10,235~~11,463
Architectural Coating for Multifamily	33	0	0	~~990~~756	0
~~*PHASE 5*~~					
Site Preparation for Commercial	18	0	0	~~204~~209	0
Grading and Improvements for Commercial	15	0	0	~~271~~263	0
Paving for Commercial	15	0	0	174~~97~~	0
Building Construction for Commercial	~~10~~165	~~5~~28	0	~~701~~15,480	~~1,159~~8,691
Architectural Coatings for Commercial	~~2~~33	0	0	~~46~~765	0
Total	**N/A**	**N/A**	**N/A**	**~~249,853~~265,840**	**~~204,459~~321,849**

NOTE: [A] PROVIDED BY CALEEMOD. [B] SEE APPENDIX B.2 FOR FURTHER DETAIL

SOURCE: CALEEMOD (V.2016.3.2); EMFAC2014.

OFF-ROAD VEHICLES (CONSTRUCTION)

Off-road construction vehicles would use diesel fuel during the construction phase of the Project. A non-exhaustive list of off-road constructive vehicles expected to be used during the construction phase of the Project includes: cranes, forklifts, generator sets, tractors, excavators, and dozers. Based on the total amount of CO_2 emissions expected to be generated by the Project (as provided by the CalEEMod output), and a CO_2 to diesel fuel conversion factor (provided by the U.S. Energy Information Administration), the Project would use a total of approximately 212,768~~134,644~~ gallons of diesel fuel for off-road construction vehicles (during the site preparation and ~~grading~~ building construction phases of the Project). Detailed calculations are provided in Appendix B.2.

OTHER

Project landscape maintenance activities would generally require the use fossil fuel (i.e. gasoline) energy. For example, lawn mowers require the use of fuel for power. As an approximation, it is estimated that landscape care maintenance would require approximately 44,200 man-hours of mowing per year. Assuming an average of approximately 0.5 gallons of gasoline used per person-hour, the Project would require the use of approximately 22,100 gallons of gasoline per year to power landscape maintenance equipment. The energy used to power landscape maintenance equipment would not differ substantially from the energy required for landscape maintenance for similar project.

The Project could also use other sources of energy not identified here. Examples of other energy sources include alternative and/or renewable energy (such as solar PV) and/or on-site stationary sources (such as on-site diesel generators) for electricity generation. The Project would introduce solar PV onto residential rooftops, which would greatly reduce the need for fossil fuel-based energy (for Project buildings), including for electricity.

CONCLUSION

The Project would use energy resources for the operation of Project buildings (electricity and natural gas), for on-road vehicle trips (e.g. gasoline and diesel fuel) generated by the Project, and from off-road construction activities associated with the Project (e.g. diesel fuel). Each of these activities would require the use of energy resources. The Project would be responsible for conserving energy, to the extent feasible, and relies heavily on reducing per capita energy consumption to achieve this goal, including through Statewide and local measures.

The Project would be in compliance with all applicable federal, state, and local regulations regulating energy usage. For example, SMUD is responsible for the mix of energy resources used to provide electricity for its customers, and it is in the process of implementing the Statewide Renewable Portfolio Standard (RPS) to increase the proportion of renewable energy (e.g. solar and wind) within its energy portfolio. SMUD is expected to achieve at least a 33% mix of renewable energy resources by 2020, and at least 40% by 2030. Additionally, energy-saving regulations, including the latest State Title 24 building energy efficiency standards ("part 6"), would be applicable to the Project. Other Statewide measures, including those intended to improve the energy efficiency of the statewide passenger and heavy-duty truck vehicle fleet (e.g. the Pavley Bill and the Low Carbon Fuel Standard), would improve vehicle fuel economies, thereby conserving gasoline and diesel fuel. These energy savings would continue to accrue over time. Furthermore, as described previously, the sustainability features of the Project that are incorporated into the project

design (as described previously in this section) would further reduce Project energy consumption. The Project would also be in compliance with the planning documents described previously within this section.

As a result, the Project would not result in any significant adverse impacts related to project energy requirements, energy use inefficiencies, and/or the energy intensiveness of materials by amount and fuel type for each stage of the Project including construction, operations, maintenance, and/or removal. SMUD, the electricity provider to the site, and PG&E, the natural gas provider, maintains sufficient capacity to serve the Project. The Project would comply with all existing energy standards, including those established by Rancho Cordova, as described under Impacts 3.6-1 through 3.6-3, previously, and would not result in significant adverse impacts on energy resources. Furthermore, existing connections exist between the Project site and nearby pedestrian and bicycle pathways, and public transit access exists nearby, reducing the need for local motor vehicle travel. Although improvements to the City's pedestrian, bicycle, and public transit systems would provide further opportunities for alternative transit, the Project would be linked closely with existing networks that, in large part, are sufficient for most residents of the Project and the City of Rancho Cordova as a whole. The Project would also be required to implement Mitigation Measures 3.6-1 through 3.6-~~1~~3, which would greatly reduce the Project's net energy emissions further. For these reasons, the Project would not be expected cause an inefficient, wasteful, or unnecessary use of energy resources nor conflict with or obstruct a state or local plan for renewable energy or energy efficiency. This is a ***less than significant*** impact.

3.7 HAZARDS AND HAZARDOUS MATERIALS

The following change was made to page 3.7-1 of Section 3.7 of the Draft EIR:

No comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic. The Sacramento Municipal~~Metropolitan~~ Utilities District's (SMUD's) comment regarding its land use requirements for the transmission corridor, submitted via a letter dated August 6, 2018, are addressed in Section 3.9, Land Use.

The following changes were made to page 3.7-19 of Section 3.7 of the Draft EIR:

The operational phase of the Project would occur after construction is completed and tenants and residents move in to occupy the structures and facilities on a day-to-day basis. The site would be primarily used for residential uses. Single family residential land uses do not routinely transport, use, or dispose of hazardous materials, or present a reasonably foreseeable release of hazardous materials, with the exception of common residential grade hazardous materials such as household cleaners, paint, etc. Additionally, operation of the Project would not prohibit the ongoing groundwater monitoring or remediation program discussed previously.

Further, the open space, drainage areas, and protected preserve areas would be located below the existing on-site PG&E and SMUD facilities which cross the site from northwest to southeast. Development within the power line has the potential for electric and magnetic field (EMF) radiation.

Due to the lack of scientific or medical conclusions about potential health effects from utility electric facilities and power lines, the CPUC issued Decision 93-11-013, establishing EMF policy for regulated utilities, which included consideration of no-cost and low-cost magnetic field reduction

measures on new and upgraded project. The interim EMF requirements apply to PG&E, Southern California Edison, San Diego Gas & Electric, Sierra Pacific Power, and Pacific Power & Light. Municipal utilities, like the SMUD and the Los Angeles Department of Water and Power, are not under CPUC jurisdiction, although they may voluntarily follow the same measures.

The CPUC Decision 06-01-042, issued on January 27, 2006, affirmed that the CPUC's November 1993 decision on low-cost/no-cost policy to mitigate EMF exposure for new utility transmission and substation project should be continued. However, this decision does not apply to existing facilities and does not establish any numeric standards or thresholds, rather the policy encourages low-cost and no cost EMF mitigation, using a recommended benchmark of 4% of total project cost. Methods for reducing magnetic fields described in the CPUC's 2006 EMF Design Guidelines include increasing the distance from electrical facilities, reducing conductor spacing, and phasing circuits to reduce magnetic fields. Further, the 2006 decision re-re-affirmed that health hazards from exposures to EMF have not been established and that state and federal public health regulatory agencies have determined that setting numeric exposure limits is not appropriate.

The CPUC has not identified a significant scientifically verifiable relationship between EMF exposure and negative health consequences. However, the January 2006 decision directs the Commission's Energy Division to pursue and review all available studies regarding EMF, and to review scientific information and report on new findings. Should such studies indicate negative EMF health impacts, the Commission will reconsider its EMF policies, and open a new rulemaking if necessary.

In 2016, the CPUC conducted an EMF investigation to independently measure EMF levels along the San Diego Gas & Electric Company (SDG&E) Sunrise Powerlink underground 230-kilovolt (kV) transmission line located under Alpine Boulevard within the community of Alpine in unincorporated San Diego County. The Sunrise Powerlink 230-kV circuits in Alpine Boulevard pass in the vicinity of Alpine Elementary School and EMF levels at the elementary school have been a specific area of concern to the community. The results of this investigation are summarized in the CPUC's Electromagnetic Field Investigation: Alpine Boulevard – Sunrise Powerlink report (Alpine Report) dated dated June 6, 2016). The Alpine Report found that numerous laboratory, clinical, and epidemiological studies have been conducted over several decades to evaluate the public health impacts of EMF exposure and that laboratory studies on EMF exposures do not support a conclusion of health impacts from EMF exposure, and clinical studies have found that EMF exposure does not appear to affect general physiology. The Alpine Report further found that while epidemiological research indicates there is a weak association between childhood leukemia and certain levels of magnetic field exposure, there is no consensus among scientists about the level of magnetic field exposure that could constitute a health risk. There are no adopted federal, state of California, or local regulatory standards that provide any guidance regarding public exposures to EMF or guidelines for setbacks from transmission lines that apply to the Project. The CPUC has undertaken extensive studies of this issue since the 1990s and is the preeminent source on this subject in California and has determined that health hazards from exposures to EMF have not been established. The Alpine Report affirms that there is no scientific consensus that EMF exposure is actually hazardous to health, nor is there an accepted standard of exposure.

Neither the CPUC, PG&E, nor SMUD stipulate requirements for any setbacks from the edge of transmission line rights-of-way, nor have they established any limitations for land uses adjacent to the right of ways in order to maintain public safety. Based on the above information, the proposed open space, drainage areas, and protected preserve areas that would be located below the existing

on-site PG&E and SMUD facilities would not pose a hazard to public safety or health associated with EMF exposure.

Further, the California Supreme Court held that, as a general rule, CEQA does not apply to impacts of the environment on a project, with several statutory exceptions including "how a project might exacerbate existing environmental hazards." (California Building Industry Assoc. v. Bay Area Air Quality Management District (2015) 62 Cal. 4th 369). The existing transmission lines are not a hazard as health hazards associated with exposures to EMF have not been established, as determined by the CPUC in 1993 and 2006 and affirmed in the 2016 Alpine Report. The Project would not exacerbate any existing condition relative to the transmission lines that would make the transmission lines hazardous. State and national standards or guidelines for setbacks from transmissions lines have not been adopted by any jurisdiction relevant to the Ranch Cordova community. Neither the CPUC, PG&E, nor SMUD stipulate requirements for any setbacks from the edge of transmission line rights-of-way, nor have they established any limitations for land uses adjacent to the right of ways in order to maintain public safety. Based on the above information, the proposed open space, drainage areas, and protected preserve areas that would be located below the existing on-site PG&E and SMUD facilities would not pose a hazard to public safety or health associated with EMF exposure.

The following changes were made to page 3.7-20 of Section 3.7 of the Draft EIR:

Impact 3.7-3: Project implementation would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school (Less than Significant)

The Project has limited potential for the routine transport, use, or disposal of hazardous materials as discussed above (Impact 3.7-1). The existing closest school (Robert J. McGarvey Elementary School) is located approximately 0.45 miles west of the western boundary of the Project site. Other existing schools nearby include Sunrise Elementary School (0.75 miles northwest), and Mather Heights Elementary School (2.92 miles west). The Project is not located within one-quarter mile of an existing ~~or proposed~~ school and the Project components would not involve the routine transport, use, or disposal of hazardous materials, or present a reasonably foreseeable release of hazardous materials. However, the Project is located within one-quarter mile of a future proposed school. The EGUSD has a proposed 70-acre high school/middle school campus directly south of the Project site. North Campus Road will run along the southern boundary of the proposed age-restricted community. The proposed high school/middle school campus would be located on the other side of East Campus Road. Nevertheless, the Project would not involve the routine transport, use, or disposal of hazardous materials, or present a reasonably foreseeable release of hazardous materials. Therefore, the Project would have a ***less than significant*** impact with respect to emitting hazardous emissions or handling hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school.

3.8 HYDROLOGY AND WATER QUALITY

No changes were made to Section 3.8 of the Draft EIR.

3.9 LAND USE

No changes were made to Section 3.9 of the Draft EIR.

3.10 NOISE

No changes were made to Section 3.10 of the Draft EIR.

3.11 POPULATION AND HOUSING

The following changes were made to pages 3.11-6 and 3.11-7 of Section 3.11 of the Draft EIR:

> **Direct Population Growth:** The Project would be a residential and commercial mixed use development, resulting in the addition of up to 1,690~~725~~ residential units, including 705~~737~~ age restricted single-family units, 732~~735~~ non-age restricted single-family units, and up to 253 multifamily units, 38 of which would be age-restricted multifamily units. This would allow for a maximum population of approximately 4,242~~319~~ residents, as described in Chapter 2.0, Project Description. Development of the Project site for residential uses was accounted for in the SACOG MTP/SCS and in the City's General Plan.

3.12 PUBLIC SERVICES AND RECREATION

The following change was made to page 3.12-4 of Section 3.12 of the Draft EIR:

> The Project site is located within the Elk Grove Unified School District (EGUSD) boundary. EGUSD is the fifth largest school district in California and the largest in northern California. Located in southern and eastern Sacramento County, EGUSD covers 320 square miles and has been in existence for over 60~~41~~ years. The EGUSD boundaries encompass the entire City of Elk Grove, portions of the Cities Sacramento and Rancho Cordova, and most of southern Sacramento County.

The following changes were made to pages 3.12-5 and 3.12-6 of Section 3.12 of the Draft EIR:

> The EGUSD building program is funded by approximately 50% state and 50% local sources. The district ~~can~~ receives local funding through developer impact fees, and tax revenue from a Mello-Roos ~~districts,~~ and General Obligation bonds. Developer impact fees provide approximately 40% ~~are the major source of funding~~ for ~~the~~ district building projects resulting from growth. Based on its facility needs assessment, EGUSD demonstrated the need to levy Level II developer fees that are higher than the statutory fee. As of April 2019~~July 2018~~, Level II fees for residential construction are $5.94~~5.65~~ per square foot and $0.56 per square foot for commercial construction. Developer fees may be used to finance new schools and equipment, and to reconstruct existing facilities to maintain adequate housing for all the district's students. EGUSD's Mello-Roos District covers the entire 320 square miles of the District and proceeds are used throughout the District to help build new schools and modernize older schools. ~~Mello-Roos districts are defined tax areas usually associated with new residential subdivisions, which are often used for additional school taxes.~~

The following changes were made to page 3.12-15 of Section 3.12 of the Draft EIR:

> As required by state law, the Project applicant would pay the state-mandated school impact fees to EGUSD. As of April 2019~~August 2018~~, Level II fees for residential development are $5.94~~5.65~~ per square foot and $0.61 per square foot for commercial/industrial construction in the EGUSD boundaries.

3.0 REVISIONS

The following changes were made to pages 3.12-16 and 3.12-17 of Section 3.12 of the Draft EIR:

TABLE 3.12-4: PARKLAND DEDICATION REQUIREMENTS

DESIGNATION	*UNITS*	*QUIMBY PPH[1]*	*POPULATION*	*QUIMBY DEDICATION RATE*	*REQUIRED DEDICATION*
Market-rate Single Family Units	732	2.95	2,159	5 acres/ 1,000 persons	10.795
Market-rate Multi-family Units	215	1.54	331	5 acres/ 1,000 persons	1.655
Age-restricted Senior Single Family Units	705	2.00	1,410	5 acres/ 1,000 persons	7.0500
Age-restricted Senior Multi-family Units	38	1.04	40	5 acres/ 1,000 persons	0.200
Totals	*1,690*	--	*3,940*	--	*19.700*

NOTES: [1] QUIMBY POPULATION CALCULATIONS ARE PERFORMED CONSISTENT WITH MUNICIPAL CODE CHAPTER 22.40. DUE TO THE PRESCRIBED POPULATION PER HOUSEHOLD FACTORS, THESE CALCULATIONS DIFFER FROM THE POPULATION ESTIMATES FOR THE PROJECT IN CHAPTER 2.

SOURCE: CITY OF RANCHO CORDOVA, 2019

As shown in Table 3.12-4, the Project would be required to dedicate 19.7 acres of parkland. Park and recreation facilities totaling 21.78 acres would be provided by the Project. In addition to these facilities, the Project would dedicate approximately 4.4 acres of public open space (portions of Lots Q-S) to complement the active recreation uses associated with the 10.78-acre public park on Lot D and approximately 2.5 miles of public trails would be developed throughout the Project site. Within the age-restricted portion of the Project, approximately 7.60 acres would be dedicated for recreational purposes. The recreation center (4.62 net acres) would include a clubhouse serving as a recreation, community gathering, activity, and information hub for residents. A separate 1.58-acre community garden (Lot B) and a 1.40-acre linear park would be provided within the age-restricted community. In addition, multiple paseos would be provided throughout the age-restricted community to provide connectivity and off-road walkability. In addition to the proposed park lots, the Project would provide parks and recreation facilities on approximately 0.2575 acres within Village 23 to serve the proposed multifamily use.

In fall 2005, CRPD adopted new standards that include a requirement of 5 acres of parkland per 1,000 residents, and the addition of performance standards for specific types of open space. The addition of 21.78 acres of park and recreation facilities space exceeds the five acre per 1,000 goal 2.08 acres. However, the passive uses associated with Lots Q through S and the public walking trails would further contribute to the Project's parkland and open space. New or expanded off-site park facilities would not be required to serve the Project. The environmental impacts of development of the proposed on-site park and recreation facilities are addressed as part of the proposed Project and are analyzed throughout this EIR. Development of the park sites is anticipated as part of the Project and is included in the impact discussions associated with development of the Project site included in this Draft EIR, including analysis of impacts associated with aesthetics, air quality, biological resources, cultural and tribal cultural resources, geology and soils, greenhouse gases and energy, hazards and hazardous materials, hydrology and water quality, land use and planning, population and housing, public services and recreation, transportation and circulation, and utilities. For example, as shown in Figure 2.0-4 in Chapter 2.0, a 10.78-acre park site would be located in the north-central portion of the Project site. This large park area may include recreational fields. The potential lighting and noise impacts resulting from operation of this and other proposed parks are discussed in Section 3.1, Aesthetics, and Section 3.10, Noise and Vibration, of this EIR. Potential adverse environmental impacts associated with development of the Project, including the proposed park sites, are discussed in Sections 3.1 through 3.14 and 4.0 of this Draft EIR. The Project does not

propose any off-site parks and no expansion or development of off-site parks is anticipated as part of the Project.

3.13 TRANSPORTATION AND CIRCULATION

The following change was made to page 3.13-18 of Section 3.13 of the Draft EIR:

The significant impact at this intersection during the AM peak hour can be mitigated by changing the southbound approach to include a right turn lane and an all-purpose lane, which would result in the intersection operating at LOS D or better during the AM and PM peak hours as shown in Table 3.13-7. The intersection improvements would include restriping the southbound approach to move the bicycle lane from its existing location between the two travel lanes to the right shoulder and add dotted lines~~hatching~~ for the right turns from the inside lane, consistent with the Optional Through Right and Right-Turn-Only lane configuration included in Figure 9C-4a (CA) of the CaMUTCD. Mitigation Measure 3.13-2 requires the Project applicant to fund the Project's fair-share of the southbound approach improvements to this intersection. However, since the identified improvement falls under the jurisdiction of the County, neither the City nor the Project applicant would have control over their timing or implementation. Thus, this impact would remain ***significant and unavoidable***. If the County allows the improvement to move forward, the impact would be classified as significant in the short-term, but eventually would be reduced to a less-than-significant level in the long-term.

The following change was made to Table 3.13-8 on page 3.13-21 of the Draft EIR:

TABLE 3.13-8: EXISTING (2017) PLUS PROJECT ROADWAY SEGMENT LOS

ROADWAY SEGMENT	EXISTING (2017)					EXISTING (2017) PLUS PROJECT					LOS THRESH-OLD
	# LANES	FACILITY TYPE	DAILY VOL.	V/C	LOS	# LANES	FACILITY TYPE	DAILY VOL.	V/C	LOS	
1. Jackson Rd/SR-16: Bradshaw Rd and Excelsior Rd	2	Arterial M	12,341	0.69	B	2	Arterial M	12,443	0.69	B	E
2. Jackson Rd/SR-16: Excelsior Rd and Eagles Nest Rd	2	Rural Hwy	11,760	0.51	D	2	Rural Hwy	11,965	0.52	D	E
3. Jackson Rd/SR-16: Eagles Nest Rd and Sunrise Blvd	2	Rural Hwy	11,806	0.52	D	2	Rural Hwy	12,011	0.52	D	~~D~~E
4. Jackson Rd/SR-16: Sunrise Blvd and Grant Line Rd	2	Rural Hwy	14,980	**0.65**	**E**	2	Rural Hwy	15,082	**0.66**	**E**	~~E~~D
5. Excelsior Rd: Jackson Rd/SR-16 and Kiefer Blvd	2	Arterial M	4,552	0.25	A	2	Arterial M	4,552	0.25	A	E
6. Kiefer Blvd: Grant Line Rd and Jackson Rd/SR-16	2	Rural S	941	0.05	A	2	Rural S	941	0.05	A	D
7. International Dr: Zinfandel Dr and Sunrise Blvd	6	Arterial M	11,246	0.21	A	6	Arterial M	13,909	0.26	A	D
8. Mather Blvd: Femoyer St and Douglas Rd	2	Arterial M	5,540	0.31	A	2	Arterial M	6,052	0.34	A	D
9. Douglas Rd: Mather Blvd and Sunrise Blvd	2	Arterial M	12,404	0.69	B	2	Arterial M	13,019	0.72	C	D
10. Douglas Rd: Sunrise Blvd and Grant Line Rd	2	Arterial M	7,510	0.42	A	2	Arterial M	7,920	0.44	A	D
11. White Rock Rd: Zinfandel Dr and Sunrise Blvd	6	Arterial M	15,943	0.30	A	6	Arterial M	16,148	0.30	~~C~~A	D
12. White Rock Rd: Sunrise Blvd and Grant Line Rd	2	Rural NS	3,533	0.21	B	2	Rural NS	3,635	0.21	~~A~~C	~~E~~D
13. White Rock Rd: Grant Line Rd and Prairie City Rd	4	Arterial M	15,436	0.43	A	4	Arterial M	15,743	0.44	~~B~~A	~~E~~D
14. Mather Field Rd: Folsom Blvd and US-50 WB Ramps	4	Arterial M	22,543	0.63	B	4	Arterial M	22,645	0.63	~~E~~B	D
15. Mather Field Rd: US-50 WB Ramps and US-50 EB Ramps	4	Arterial M	35,028	**0.97**	**E**	4	Arterial M	35,130	**0.98**	**E~~C~~**	D
16. Mather Field Rd: US-50 EB Ramps and International Dr	6	Arterial M	42,228	0.78	C	6	Arterial M	42,433	0.79	~~B~~C	D
17. Zinfandel Dr: Folsom Blvd and US-50 WB Ramps	4	Arterial M	22,380	0.62	B	4	Arterial M	22,687	0.63	~~E~~B	D
18. Zinfandel Dr: US-50 EB Ramps and White Rock Rd	6	Arterial M	50,515	**0.94**	**E**	6	Arterial M	52,563	**0.97**	**E**	D
19. Zinfandel Dr: White Rock Rd and International Dr	6	Arterial M	23,685	0.44	A	6	Arterial M	25,733	0.48	A	D
20. Zinfandel Dr: International Dr and Douglas Rd	4	Arterial M	13,705	0.38	A	4	Arterial M	13,807	0.38	A	D
21. Sunrise Blvd: US-50 WB Ramps and US-50 EB Ramps	6	Arterial M	67,276	**1.25**	**F**	6	Arterial M	70,041	**1.30**	**F**	D
22. Sunrise Blvd: US-50 EB Ramps to Folsom Blvd	6	Arterial M	53,504	**0.99**	**E**	**6**	**Arterial M**	**56,986**	**1.06**	**F**	D
23. Sunrise Blvd: Folsom Blvd and White Rock Rd	6	Arterial M	41,238	0.76	C	6	Arterial M	45,540	0.84	D	D
24. Sunrise Blvd: White Rock Rd and Douglas Rd	6	Arterial M	30,941	0.57	A	6	Arterial M	38,725	0.72	C	D
25. Sunrise Blvd: Douglas Rd and Jackson Rd/SR-16	4	Arterial M	22,635	0.63	B	4	Arterial M	31,546	0.88	D	D
26. Sunrise Blvd: Jackson Rd/SR-16 and Grant Line Rd	2	Rural S	11,748	0.59	D	2	Rural S	12,567	0.63	E	E
27. Grant Line Rd: White Rock Rd and Douglas Rd	2	Rural NS	12,804	**0.75**	**E**	2	Rural NS	13,111	**0.77**	**E**	D
28. Grant Line Rd: Douglas Rd and Jackson Rd/SR-16	2	Rural S	8,524	0.43	D	2	Rural S	8,524	0.43	D	D
29. Grant Line Rd: Jackson Rd/SR-16 and Sunrise Blvd	2	Rural S	7,745	0.39	D	2	Rural S	7,745	0.39	D	E

*NOTE: **BOLD** REPRESENTS UNACCEPTABLE OPERATIONS. SHADED REPRESENTS A POTENTIALLY SIGNIFICANT IMPACT. AWSC: ALL WAY STOP CONTROL. SSS: SIDE STREET STOP CONTROL. ECL: EXCEEDS CALCULABLE LIMIT.*

SOURCE: KIMLEY-HORN, 2018.

3.0 REVISIONS

The following changes are made to pages 3.13-22 and 3.13-23 of Section 3.13 of the Draft EIR:

MITIGATION MEASURE(S)

Mitigation Measure 3.13-1: *Intersection #3, Jackson Road at Eagles Nest Road: The Project applicant shall be responsible for funding the Project's fair share (1.69 percent) of the construction costs, calculated to the satisfaction of the City, in consultation with Sacramento County Department of Transportation, of the following improvement:*

- *The intersection shall be converted from side street stop controlled to signalized. The estimated cost of this improvement is $527,880; the Project's fair-share would be $7,020 (Kimley Horn, 2019).~~Prior to issuance of the occupancy permit for the 400th dwelling unit, the Project applicant shall fund its fair share of the improvement. The Project's fair share of the improvement is 1.69 percent.~~*

Mitigation Measure 3.13-2: *Intersection #9, Grant Line Road at Sunrise Boulevard: The Project applicant shall be responsible for funding the Project's fair share (2.46 percent) of the construction costs, calculated to the satisfaction of the City, in consultation with Sacramento County Department of Transportation, of the following improvement:*

- *The southbound approach shall be changed to include a right turn lane and an all-purpose lane. This would require restriping the southbound approach to move the bicycle lane from its existing location between the two travel lanes to the right shoulder and add ~~hatching~~striping for the right turns from the inside lane, consistent with the Optional Through Right and Right-Turn-Only lane configuration included in Figure 9C-4a (CA) of the CaMUTCD[11]. The estimated cost of this improvement is $25,000; the Project's fair-share would be $620 (Kimley Horn, 2019).~~Prior to issuance of the occupancy permit for the 400th dwelling unit, the Project applicant shall fund its fair share of the improvement. The Project's fair share of the improvement is 2.46 percent.~~*

Mitigation Measure 3.13-3: *Intersection #11, Douglas Road at Sunrise Boulevard: Signal timing optimization ~~shall be completed at this intersection. Additionally~~and~~,~~ a right-turn overlap signal phase shall be added for the eastbound right-turn, overlapping with the northbound left-turn movement~~. The improvement~~ shall be completed prior to ~~issuance of the occupancy permit for the 400th~~ construction of the 763rd dwelling unit equivalent (DUE). A single-family residential (non-age-restricted) unit is calculated as 1.0 DUE, a multifamily residential unit is calculated as 0.616 DUE, and an active adult residential unit is calculated as 0.37 DUE.*

Mitigation Measure 3.13-4: *Intersection #21, Sunrise Boulevard at White Rock Road: Signal timing optimization shall be completed at this intersection~~. The improvement shall be completed~~ prior to ~~issuance of the occupancy permit for~~construction of the 1,162nd DUE~~400th~~. A single-family residential (non-age-restricted) unit is calculated as 1.0 DUE, a multifamily residential unit is calculated as 0.616 DUE, and an active adult residential unit is calculated as 0.37 DUE~~dwelling unit~~.*

Mitigation Measure 3.13-5: *Intersection #25, Sunrise Boulevard at Zinfandel Drive*: *The eastbound and westbound approaches shall be restriped to include a left turn lane and through-right lane. ~~The improvement shall be completed prior to issuance of the occupancy permit for the 400th dwelling~~*

[11] California MUTCD 2014 Edition. Chapter 9C-Markings: Part 9 Traffic Control for Bicycle Facilities. November 2014

~~*unit.*~~*It is noted that this improvement, or components thereof, are also required of the Suncreek Specific Plan project (see SunCreek Specific Plan Project DEIR/DEIS Mitigation Measure 3.15-1k, p. 3.15-43) and the Rio del Oro Specific Plan Project (see Rio del Oro Specific Plan Project DEIR/DEIS Mitigation Measure 3.14-1o, p. 3.14-61) and the Project may participate in the funding of the improvement, if constructed by other projects. Project participation in, or completion of, if not constructed by others, the improvement shall occur prior to construction of the 541st DUE. A single-family residential (non-age-restricted) unit is calculated as 1.0 DUE, a multifamily residential unit is calculated as 0.616 DUE, and an active adult residential unit is calculated as 0.37 DUE. Project participation may include Project construction of the improvement subject to reimbursement of the fair-share of any other projects conditioned or otherwise required to construct or fund the improvement or Project payment of the Project's fair-share of the improvement if constructed by others.*

The following changes were made to pages 3.13-33 and 3.13-34 of Section 3.13 of the Draft EIR:

CONCLUSION

Under the Cumulative (2040) Plus Project condition, the addition of the Project results in potentially significant impacts at five study intersections, including: Intersection #10, Douglas Road at Zinfandel Drive, Intersection #11, Douglas Road at Sunrise Boulevard, Intersection #21, Sunrise Boulevard at White Rock Road, Intersection #25, Sunrise Boulevard at Zinfandel Drive and Intersection #27, White Rock Road at Prairie City Road, and two roadway segments, Roadway Segment #9, Sunrise Boulevard between White Rock Road and Douglas Road, and Roadway Segment #24, Sunrise Boulevard between White Rock Road and Douglas Road. The Project also results in a potentially significant impact to Rancho Cordova Parkway along the Project extent.

Mitigation Measure 3.13-7 would result in acceptable operations at Intersection #10 and Mitigation Measure 3.13-9 would widen Rancho Cordova Parkway to accommodate proposed and planned traffic. However, even with signal timing optimization, the impacts to Intersections #11, #21, and #25 would be significant. The improvements identified in Mitigation Measures 3.13-6 and 3.13-7 falls under the jurisdiction of the County; therefore, neither the City nor the Project applicant would have control over the timing or implementation of this improvement to Intersections #10 and #27. Further, Roadway Segment #24 has been built out consistent with the General Plan designation and additional capacity for this roadway is not envisioned by the General Plan. ~~and~~Further, as discussed above, the City has determined that widening to larger than a 6-lane facility would conflict with bicycle and pedestrian use. While there may be potential to improve circulation conditions through additional connectivity along Sunrise Boulevard and further build out of the City's General Plan network, this would require an update to the General Plan to address long-range transportation planning to address adverse cumulative conditions regardless of Project implementation. Therefore, under the Cumulative (2040) Plus Project condition, impacts to intersections and roadways outside of the City's jurisdiction and control as well as Intersections ~~#10,~~ #11, #21, and #25 and Roadway Segment #24 would remain ***significant and unavoidable***. If the County allows the improvements Intersection #10 to move forward, the impacts would be classified as significant in the short-term, but eventually would be reduced to a less-than-significant level in the long-term.

MITIGATION MEASURE(S)

Mitigation Measure 3.13-6: *Intersection #10, Douglas Road at Zinfandel Drive:* ~~*Prior to issuance of the occupancy permit for the 400th dwelling unit, t*~~*The Project shall pay its fair-share for the*

westbound right turn to be converted from permitted to a free right turn with a receiving lane. The Project's fair share of the improvement is 10.61 percent.

Mitigation Measure 3.13-7: *Intersection #27, White Rock Road at Prairie City Road: A second southbound right-turn lane shall be added at this intersection, and a right-turn overlap signal phase shall be added for the southbound right-turn~~.~~. The Project's fair share of the improvement is 4.77 percent.~~ The improvement fair share shall be paid prior to issuance of the occupancy permit for the 400th dwelling unit.~~*

Mitigation Measure 3.13-8: *Roadway Segment #9, Douglas Road between Mather Boulevard and Sunrise Boulevard: ~~Prior to issuance of the occupancy permit for the 400th dwelling unit, t~~The Project shall pay its fair-share for the widening of Douglas Boulevard to six lanes. The Project's fair share of the improvement is 10.05 percent.*

Mitigation Measure 3.13-9: *Rancho Cordova Parkway shall be widened from two to four lanes along the project extents. The improvement shall be reflected on the Project's improvement plans. The improvement shall be completed before the 570th market rate single family detached unit and the 566th age-restricted senior unit (or the number of units generating an equivalent amount of trips) is constructed.*

Figure 3.13-6 is updated as shown on Revised Draft EIR Figure 3.13-6.

3.0 REVISIONS

REVISED DRAFT EIR FIGURE 3.13-6

This page left blank intentionally.

3.14 UTILITIES

The following changes were made to page 3.14-20 of Section 3.14 of the Draft EIR:

According to the California Department of Resources Recycling and Recovery (CalRecycle), in 2017, Rancho Cordova disposed of approximately 64,235 tons of solid waste. Republic Services ~~Allied Waste Services~~ provides solid waste and recycling collection services to the City. Solid waste is transported to the Elder Creek Transfer Station, located at 8642 Elder Creek Road in Sacramento~~Kiefer Landfill, near the intersection of Grant Line Road and Kiefer Boulevard~~. The waste is then transferred and hauled an additional 51 miles to Forward Landfill, located at 9999 S. Austin Road in Manteca.

Forward, Inc. and Allied Waste operate the Forward Landfill. The ~~Landfill~~ landfill has four units: Solid waste landfill, treatment unit (processing), asbestos containing waste disposal site, and land application. The solid waste landfill unit is a Class I, II, and III solid waste landfill facility which accepts the following waste types: agricultural, asbestos, friable, ash, construction/demolition, contaminated soil, green materials, industrial, mixed municipal, sludge, tires, and shreds. The solid waste unit is 567 total acres with 354.5 acres of disposal area. The maximum permitted throughput at the solid waste unit is 8,668 tons per day, the remaining capacity is 22,100,000 cubic yards, and the permitted capacity is 51,040,000 cubic yards. Given the remaining capacity, it is anticipated that the landfill will continue to operate beyond its estimated closure date in 2021 identified in the Solid Waste Facility Review Permit, Facility 39-AA-0015 dated January 31, 2012. It is noted that the Forward Landfill has submitted plans for expansion that would extend capacity until approximately 2036 are being processed by San Joaquin County. The Supplemental Draft EIR for the Forward Landfill Expansion Project (San Joaquin County, August 2018) estimates a closure date in 2030, based on current capacity and operations.

Additionally, Sacramento County owns and operates the Kiefer Landfill, and the landfill is the primary solid waste disposal facility in the County. Kiefer Landfill is a total of 1,084 acres in size, with a permitted disposal area of 660 acres. Kiefer Landfill is classified as a Class III municipal solid waste landfill facility and is permitted to accept general residential, commercial, and industrial refuse for disposal, including municipal solid waste, construction and demolition debris, green materials, agricultural debris, and other nonhazardous designated debris. Although the City of Rancho Cordova has not secured any current or future disposal capacity at the Kiefer Landfill, this landfill is discussed as a potential future landfill site for the City and Project.

The landfill is permitted to accept a maximum of 10,800 tons per day of solid waste; however, the average intake is only approximately 6,000 tons per day. The Kiefer Landfill receives over 700,000 tons of waste per year. The site currently has a permitted capacity of approximately 117 million cubic yards and a remaining capacity of 113 million cubic yards. Currently, the landfill is operating below permitted capacity, and the closure date of the Kiefer Landfill is anticipated to be approximately 2064.

The following change was made to page 3.14-21 of Section 3.14 of the Draft EIR:

California Green Building Standards Code (CALGreen)

CALGreen requires the diversion of at least 65~~50~~ percent of the construction waste generated during most new construction projects (CALGreen Sections 4.408 and 5.408) and some additions and alterations to nonresidential building projects (CALGreen Section 5.713).

The following changes were made to pages 3.14-23 and 3.14-24 of Section 3.14 of the Draft EIR:

Impact 3.14-3: The Project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste, and would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals (Less than Significant)

The Project would be a residential and commercial mixed use development, resulting in the addition of up to 1,690~~725~~ residential units and 53,000 s.f. of commercial and non-residential uses, which is projected to increase the population by an estimated 4,242~~319~~ residents and 106 employees, as described in Section 2.0, Project Description. Development of the Project site for residential and commercial uses was accounted for in the City's General Plan.

CalRecycle provides an average per-capita solid waste disposal rate for residents and business. In Rancho Cordova, CalRecycle estimates a solid waste disposal rate of 4.8 tons per resident per year. Using this rate, the residential portion of the Project would generate approximately 20,361.6~~731.2~~ tons per year of solid waste. Additionally, as described in Section 2.0, the Project would include up to 53,000 square feet of non-residential uses, which includes 21,000 square feet for a recreation center and 32,000 square feet for commercial uses. In order to determine solid waste generation from the proposed non-residential uses, the rate of 6.8 tons per year per employee was used. Therefore, the non-residential components of the Project would generate up to 720.8 tons per year of solid waste. Total solid waste generated by all aspects of the Project would be 21,082.4~~452~~ tons per year.

The Project would be required to comply with applicable state and local requirements including those pertaining to solid waste, construction waste diversion, and recycling. Specifically, Chapter 6.20 of the City's Municipal Code regulates the management of garbage, recyclables, and other wastes, Chapter 6.21 of the City's Municipal Code promotes recycled and organics recycling for businesses and multifamily uses, and Chapter 16.92 outlines the City's Construction and Demolition Debris ordinance.

The addition of solid waste associated with the proposed project, approximately 21,082 tons per year (57.8 tons per day) at total buildout, to the Forward Landfill would not exceed the landfill's remaining capacity. The City will need to secure a new location of disposal of all solid waste generated in the City when the Forward landfill is ultimately closed. There are several options that the City will have to consider for solid waste disposal at that time which is estimated to be 2030, or 2036 if the proposed Forward Landfill expansion is approved.

For example, the Kiefer Landfill is permitted to accept a maximum of 10,800 tons per day of solid waste; however, the average intake is only approximately 6,000 tons per day. The landfill currently has a permitted capacity of approximately 117 million cubic yards and a remaining capacity of 113 million cubic yards. Currently, the landfill is operating below permitted capacity, and the closure date of the Kiefer Landfill is anticipated to be approximately 2064. ~~The addition of the volume of 21,452 tons per year (or 58.8 tons per day) of solid waste generated by the Project to the Kiefer Landfill would not exceed the landfill's remaining capacity.~~ Although the City of Rancho Cordova has not secured any current or future disposal capacity at the Kiefer Landfill, this landfill is discussed as a potential future landfill site for the City and Project if and/or when the Forward Landfill ceases operation.

The Project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste, and would not generate solid waste in excess of State or local

standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. This is a ***less than significant*** impact.

4.0 OTHER CEQA-REQUIRED TOPICS

No changes were made to Chapter 4.0 of the Draft EIR.

5.0 ALTERNATIVES TO THE PROPOSED PROJECT

The following changes were made to page 5.0-13 of the Draft EIR:

Greenhouse Gases, Climate Change, and Energy

Under Reduced Project Alternative #1, fewer housing units would be constructed on the Project site. Implementation of the Project would generate GHG emissions during construction and operation. Short-term construction GHG emissions are a one-time release of GHGs and are not expected to significantly contribute to global climate change over the lifetime of a Project. As noted previously, construction related impacts would be reduced under this alternative when compared to the Project, as the extent of the development footprint and duration of construction activities would be reduced slightly.

Under Reduced Project Alternative #1, because fewer people would likely reside within the Project site under this alternative due to the reduction of 127 units, the number of vehicle trips generated would also decrease by approximately 890 daily vehicle trips. Emissions associated with area sources and the mobile greenhouse gas emissions associated with vehicle trips would decrease when compared to the Project. ~~As such, the greenhouse gas emissions impact would be decreased when compared to the Project.~~ However, impacts would remain potentially significant and implementation of Mitigation Measures 3.6-1 and 3.6-2 would result in a comparable impact to the Project.

While there would be reduced development under this alternative, it is anticipated that energy-saving measures would be similar to the Project and there would not be a significant change in the potential for wasteful, inefficient, or excessive consumption of energy under this alternative.

The following changes were made to page 5.0-17 of the Draft EIR:

Greenhouse Gases, Climate Change, and Energy

Under Reduced Project Alternative #2, fewer housing units would be constructed on the Project site. Implementation of the Project would generate GHG emissions during construction and operation. Short-term construction GHG emissions are a one-time release of GHGs and are not expected to significantly contribute to global climate change over the lifetime of a project. As noted previously, construction related impacts would be reduced under this alternative when compared to the Project, as the extent of the development footprint and duration of construction activities would be reduced slightly.

Under Reduced Project Alternative #2, there would be less residential development, resulting in a reduced population and a reduction in the number of vehicle trips generated. ~~As such, the~~

~~greenhouse gas emissions impact would be decreased when compared to the Project.~~ However, impacts would remain potentially significant and implementation of Mitigation Measures 3.6-1 and 3.6-2 would result in a comparable impact to the Project.

While there would be reduced development under this alternative, it is anticipated that energy-saving measures would be similar to the Project and there would not be a significant change in the potential for wasteful, inefficient, or excessive consumption of energy under this alternative.

The following changes were made to page 5.0-21 of the Draft EIR:

TABLE 5.0-3: COMPARISON OF ALTERNATIVE PROJECT IMPACTS TO THE PROJECT

ENVIRONMENTAL ISSUE	PROJECT	NO PROJECT ALTERNATIVE	REDUCED PROJECT ALTERNATIVE #1	REDUCED PROJECT ALTERNATIVE #2
Aesthetics and Visual Resources	3 – Same	4 - Greater	2 – Less	2 – Less
Air Quality	3 – Same	4 – Greater	2 – Less	2 – Less
Biological Resources	3 – Same	4 - Greater	2 – Less	2 - Less
Cultural and Tribal Resources	3 – Same	3 – Same	3 – Same	3 – Same
Geology and Soils	3 – Same	3 - Same	3 - Same	3 - Same
Greenhouse Gas, Climate Change, and Energy	3 – Same	4 – Greater	~~4 – Greater~~ 3 – Same	~~4 – Worse~~ 3 – Same
Hazards and Hazardous Materials	3 – Same	3 – Same	3 – Same	3 – Same
Hydrology and Water Quality	3 – Same	3 – Same	3 – Same	3 – Same
Land Use	3 – Same	3 – Same	3 – Same	3 – Same
Noise and Vibration	3 – Same	4 – Greater	2 – Less	2 – Less
Population and Housing	3 – Same	3 - Same	2 – Less	2 – Less
Public Services and Recreation	3 – Same	4 - Greater	2 – Less	3 - Same
Transportation and Circulation	3 – Same	4 – Greater	2 – Less	2 – Less
Utilities	3 – Same	3 - Same	2 – Less	2 – Less
Summary	**42**	**49**	**3~~5~~4**	**3~~6~~5**

6.0 REPORT PREPARERS

No changes were made to Chapter 6.0 of the Draft EIR.

7.0 REFERENCES

No changes were made to Chapter 7.0 of the Draft EIR.

APPENDICES

Appendix B.1. of the Draft EIR was revised to replace the CalEEMod modeling results.

This document is the Final Mitigation Monitoring and Reporting Program (FMMRP) for The Ranch Project (Project). This FMMRP has been prepared pursuant to Section 21081.6 of the California Public Resources Code, which requires public agencies to "adopt a reporting and monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment." A FMMRP is required for the proposed Project because the EIR has identified significant adverse impacts, and measures have been identified to mitigate those impacts.

The numbering of the individual mitigation measures follows the numbering sequence as found in the Draft EIR.

4.1 MITIGATION MONITORING AND REPORTING PROGRAM

The FMMRP, as outlined in the following table, describes mitigation timing, monitoring responsibilities, and compliance verification responsibility for all mitigation measures identified in this Final EIR.

The City of Ranch Cordova will be the primary agency responsible for implementing the mitigation measures and will continue to monitor mitigation measures that are required to be implemented during the operation of the Project.

The FMMRP is presented in tabular form on the following pages. The components of the FMMRP are described briefly below:

- **Mitigation Measures**: The mitigation measures are taken from the Draft EIR in the same order that they appear in that document.
- **Mitigation Timing**: Identifies at which stage of the project mitigation must be completed.
- **Monitoring Responsibility**: Identifies the agency that is responsible for mitigation monitoring.
- **Compliance Verification**: This is a space that is available for the monitor to date and initial when the monitoring or mitigation implementation took place.

TABLE 4.0-1: MITIGATION MONITORING AND REPORTING PROGRAM

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
BIOLOGICAL RESOURCES				
Impact 3.3-1: The Project has the potential to, directly or indirectly, have a substantial adverse effect through habitat modifications or reductions, cause populations to drop below self-sustaining levels, substantially eliminate a community, or substantially reduce the number of, or restrict the range of, an endangered, rare or threatened species, including those considered candidate, sensitive, or special-status, in local or regional plans, policies, regulations, or by the CDFW or USFWS - Invertebrates	***Mitigation Measure 3.3-1:*** *Prior to any ground disturbing activities, the Project proponent shall submit a South Sacramento Habitat Conservation Plan (SSHCP) permit application package to the City of Rancho Cordova ("Land Use Authority Permittee") as a request that the incidental take coverage provided by City's SSHCP Incidental Take Permit (ITP) be extended to the proposed activities. The City of Rancho Cordova shall review the SSHCP permit application for consistency with all of the SSHCP requirements and provide the South Sacramento Conservation Agency ("Implementing Entity) with a copy of the SSHCP requirements for tracking purposes. The Project proponent shall be responsible for paying all SSHCP development fees associated with obtaining coverage from the City of Rancho Cordova. Any proposal to provide land in fee title or provide a conservation easement in lieu of paying all or part of the required SSHCP development fees, shall include a consistency analysis in the application that sufficiently shows that the proposal is consistency with the SSHCP Conservation Strategy.* ***Mitigation Measure 3.3-2:*** *The Project proponent shall implement the following SSHCP Avoidance and Minimization Measures (AMMs) to the satisfaction of the City to avoid direct and indirect effects of Covered Activities on Covered Species:* • *AMM SPECIES-1 (Litter Removal Program): A litter control program shall be instituted for the entire Project site. All workers shall ensure that their food scraps, paper wrappers, food containers, cans, bottles, and other trash are deposited in covered or closed trash containers. All garbage shall be removed from the Project site at the end of each work day, and construction personnel shall not feed or otherwise attract wildlife to the area where construction activities are taking place.* • *AMM SPECIES-2 (No Pets in Construction Areas): To avoid harm and harassment of native species, workers and visitors shall not bring pets onto a Project site.* • *AMM SPECIES-3 (Take Report): If accidental injury or death of any Covered Species occurs, workers shall immediately inform the*	City of Rancho Cordova Planning Department City of Rancho Cordova Planning Department	Prior to any ground disturbing activities During construction and operation of the Project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	approved biologist or on-site monitor and site supervisor. The approved biologist or on-site monitor shall phone the appropriate contact person at the Implementing Entity (i.e., the South Sacramento Conservation Agency). The Implementing Entity shall immediately contact the Wildlife Agencies (i.e., the USFWS and CDFW) by telephone. A memorandum shall be provided to the Implementing Entity and Wildlife Agencies within 1 working day of the incident. The report shall provide the date and location of the incident, number of individuals taken, the circumstances resulting in the take, and any corrective measures taken to prevent additional take. • *AMM SPECIES-4 (Post-Construction Compliance Report): A post-construction compliance report shall be submitted to the SSHCP Implementing Entity within 30 calendar days of completion of construction activities or within 30 calendar days of any break in construction activity that lasts more than 30 days. The report shall detail the construction start and completion dates, any information about meeting or failing to meet species take AMMs, effectiveness of each AMM that was applied at the Project site, and any known Project effects to Covered Species.* • *AMM LID-1 (Stormwater Quality): When the size of a Covered Activity Project exceeds the thresholds established by the State Water Resources Control Board (SWRCB) (see the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions, or future SWRCB-approved design manuals applicable to the Plan Area), incorporate stormwater management into site design to satisfy the requirements outlined in the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions. Stormwater management may include groundwater recharge (LID-2) and natural site features (LID-3).* • *AMM LID-3 (Natural Site Features): Incorporate preservation of a site's natural aquatic features (such as creeks and streams) into Project design to retain natural hydrologic patterns and to retain habitat that might be used by Covered Species.* • *AMM EDGE-1 (Compatible Land Uses): To the maximum extent practicable, development Project Covered Activities will locate*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	compatible land uses (e.g., designated open space such as parks and ball fields, detention basins, and other land uses with less-intensive human activity) in areas immediately adjacent to existing or planned Preserve boundaries. The compatible land use will provide additional buffering of Preserves from potential indirect effects of adjacent urban development. The soil surfaces in a compatible land use area may be re-contoured provided that the soil restrictive layer remains undamaged and most of the soil profile above the restrictive layer remains intact. The Land Use Authority will determine when it is not practicable to locate a compatible land use adjacent to existing or planned Preserve boundaries. • *AMM EDGE-2 (Single-Loaded Streets): To the maximum extent practicable, the design of Urban Development Covered Activities will locate single-loaded streets adjacent to existing or planned Preserve. The Land Use Authority will determine when single-loaded streets are not practicable.* • *AMM EDGE-3 (Preserve Setbacks): Urban Development Covered Activities constructed adjacent to existing or planned Preserves must establish a minimum 50-foot-wide setback outward from the boundary of any existing Preserve or planned SSHCP Preserve. This minimum 50-foot-wide setback will function as a transition between Urban Development and the Preserve, and must be managed to maintain the natural community of vegetation present in the adjacent Preserve. As much of the setback as possible should remain in the same natural habitat as the Preserve.* *However, as discussed in Section 5.2.5, Covered Activities in Preserve Setbacks in the UDA, where an existing or planned Preserve is adjacent to an existing roadway (e.g., collectors, arterials, thoroughfares), the 50-foot Preserve Setback will not be required, and any bicycle or pedestrian trail will be established in the road right-of-way. In addition, where a planned roadway crosses an existing or planned Preserve, no Preserve Setback will be required, and any bicycle or pedestrian trail will be established in the road right-of-way.* • *AMM EDGE-4 (Locate Stormwater Control Outside Preserves): Roads, sidewalks, and other impermeable surfaces of Urban*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	Development Covered Activities adjacent to existing or planned Preserves will slope away from Preserves and Preserve Setbacks or intercept drainage with swales or curbs and gutters to preclude drainage from entering Preserves and Preserve Setbacks. Stormwater flows must be directed away from Preserves and Preserve Setbacks and directed into stormwater control facilities inside the development (outside Preserves and Preserve Setbacks) (see EDGE-6 for exception to EDGE-4 in certain SSHCP Linkage Preserves). • *AMM EDGE-5 (Stormwater Control in Preserve Setbacks): If trails are established in any Preserve Setback in compliance with EDGE-3, the trail must be sloped away from the Preserve, and rainwater leaving the trail surface must flow into an adjacent low-velocity bio-retention swale or cell to keep rainwater runoff and trail contaminants from entering the Preserve. Low-velocity bio-retention swales or cells are typically small linear features placed on one or both sides of a trail. As required by EDGE-3, trails and their adjacent bio-retention swales or cells must be located on the side of the Preserve Setback nearest development.* • *AMM EDGE-7 (Hardpan/Duripan Protection): To protect the soil perched aquifer and the micro-watersheds supporting existing vernal pool hydrology, activities that have the potential to cut into, disrupt, or remove the soil's restrictive layer (hardpan or duripan) will not occur within Preserves or Preserve Setbacks. However, in certain circumstances, the Covered Activities defined in Section 5.2.6, Covered Activities in Stream Setbacks in the UDA, and Section 5.2.8, Covered Activities in the Laguna Creek Wildlife Corridor of the Preserve System, may result in punctures or other minor disruptions of the soil hardpan or duripan if approved by the Implementing Entity and the Technical Advisory Committee according to the process described in Chapter 9 of the SSHCP. If a Covered Activity on a Preserve or Preserve Setback results in a puncture or other disruption to the soil hardpan or duripan, the puncture will be sealed using bentonite clay or other material that maintains the functionality of the soil's restrictive layer and associated perched aquifer.*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	• *AMM EDGE-10 (Prevent Invasive Species Spread): Completed Covered Activities (including roads) will be maintained in a manner that avoids the spread of invasive species into Preserve and Open Space areas. Such maintenance measures will include the following:* o *To prevent the transport of non-native invasive species onto Preserves, before bringing any equipment onto an SSHCP Preserve or Preserve Setback, equipment must be cleaned of mud, dirt, and plant material. Cleaning will occur in the infested area or another appropriate location as approved by a Plan Permittee.* o *Mowing rotation will start in un-infested areas and move to infested areas.* o *Invasive plant prevention techniques will be incorporated into maintenance plans.* o *The SSHCP Implementing Entity will survey road shoulders, ditches, and rights-of-way that border SSHCP Preserves for invasive weeds or other exotic plant species. Where roadside weed infestations have reached a critical control point, the Implementing Entity or Land Use Authority Permittee will apply the appropriate manual, mechanical, or chemical treatment.* • *AMM BMP-9 (Soil Compaction): After construction is complete, all temporarily disturbed areas will be restored similar to pre-Project conditions, including impacts relating to soil compaction, water infiltration capacity, and soil hydrologic characteristics.* • *AMM NATURE TRAIL-1 (Nature Trail Plan): A nature trail plan must be prepared for each Preserve where a trail is allowed by the Preserve Management Plan. Nature trails will be unpaved trails that vary in width depending on terrain and existing constraints, but will never exceed 4 feet in width. Where a trail crosses a swale, wooden walkways elevated to a height no greater than 2 feet will be installed. Trail improvements may include mowing vegetation to create or maintain a trail, minor grading to remove trip hazards, and signs providing directional and educational information. Public access to land acquired for preservation will be prohibited until a trail plan can be prepared by the Implementing Entity and*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	approved by the Permitting Agencies. A trail plan will include the following: o *Maps identifying areas that contain sensitive habitats or species occurrences.* o *Maps that show the location and footprint of proposed trails.* o *Methods used to control public access.* o *Trail and use monitoring methods, schedules, and responsibilities.* o *Trail operation and maintenance guidelines and responsibilities.* o *Clear triggers for use restrictions or closure based on sensitive biological indicators (e.g., seasonal closures of some trails on the basis of activity periods of Covered Species or sensitive species).* • *AMM NATURE TRAIL-2 (Nature Trail Protection of Duripan): Nature trails will be sited and constructed so as not to interfere with existing soil duripan and the perched aquifer that support the existing hydrologic regime of the Vernal Pool–Grassland, and will not interfere with existing pool hydrology. Trails within Preserves will not be paved.* • *AMM NATURE TRAIL-3 (Nature Trail Location): Nature trails will be located away from sensitive natural resources (e.g., vernal pools, riparian habitat, woodland habitat, Covered Species occurrences, raptor nesting sites, tricolored blackbird (Agelaius tricolor) colony sites). The Wildlife Agencies will determine the distance necessary to avoid impacts to sensitive natural resources.* • *AMM NATURE TRAIL-4 (Biological Studies Prior to Nature Trail Design): Biological studies will be conducted within the area being considered for nature trail construction prior to Project design. The studies will include land cover type mapping and focused species surveys and/or wetland delineations. The biological studies will include assessments of potential effects of trail construction on Preserve System resources, and recommendations for avoidance and minimization that may be incorporated into Project siting, design, construction, and operation.*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	• *AMM NATURE TRAIL-5 (Monitoring of Nature Trail Impacts): Impacts that could result from use of a nature trail within a Preserve will be monitored according to the Preserve Management Plan (Chapter 8) to ensure that uses do not conflict with the individual Preserve Management Plan. If use of a trail is found to conflict with the individual Preserve Management Plan, use of that trail will be discontinued until adjustments in the use can be made to reduce or eliminate conflicts. The Implementing Entity will make decisions about discontinuing or modifying use of a trail in consultation with the Preserve Manager or other applicable Preserve management agency or organization.* • *AMM ROAD-1 (Road Project Location): Road projects will be located in the least environmentally sensitive area to avoid, to the maximum extent practicable, impacts on Covered Species, Covered Species habitat, and waters of the United States. Road project alignments will follow existing roads, road easements, and rights-of-way, or be sited in disturbed areas to minimize habitat loss and additional habitat fragmentation.* • *AMM ROAD-3 (Roadside Pesticide Use): If pesticide use is necessary along roadsides, the appropriate SSHCP Permittee will ensure that the pesticide application strictly complies with the pesticide label and all other applicable federal, state, and local authorities pertaining to the use, safety, storage, disposal, and reporting of the pesticide. Where roadside weed infestations have reached a critical control point, the Implementing Entity or a Land Use Authority Permittee will apply the appropriate manual, mechanical, or chemical treatment. In addition, the Implementing Entity or appropriate Land Use Authority Permittee will post signs along road shoulders adjacent to sensitive areas that are within the SSHCP Preserve System (e.g., California tiger salamander breeding ponds, endemic plant populations, vertebrates that rely on insects for part of their diet). The signs will identify pesticide use restrictions or other roadside maintenance restrictions.* • *AMM RE-ESTABLISHMENT/ESTABLISHMENT-1 (Vernal Pool): Re-establish or establish Vernal Pool Wetland according to the following guidelines:*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	o *Re-establishment will always take priority over establishment of vernal pools. Establishment will be permitted only after it has been determined that sites with the potential to re-establish vernal pools no longer exist in the Plan Area or cannot be acquired through a willing seller/buyer agreement.* o *When possible, re-established or established sites will be located adjacent to an existing Preserve(s) to maximize connectivity and Preserve area.* o *Re-establishment or establishment will not result in direct or indirect adverse impacts to the hydrologic regime of existing vernal pools. Vernal pool re-establishment or establishment actions will not remove more than 10% of any existing vernal pool watershed, as defined by the SSHCP LIDAR analysis (see Section 3.3 and Conservation Action VPI1.2 in Table 7.1).* o *Vernal pool re-establishment will attempt to restore the historical density and range of vernal pool sizes to the maximum extent feasible using historical aerial photography of the site, if available. Where aerial photography of the site's historical conditions is not available, vernal pool re-establishment will include a range of pool sizes (area and depth) to accommodate the different habitat needs and life history characteristics of the vernal pool invertebrate Covered Species.* o *Established vernal pools must be located on sites with vernal pool soils, defined as any Plan Area soil type where vernal pools currently exist.* o *Established vernal pool sites will include a range of pool sizes to accommodate the different habitat needs and life history characteristics of the three vernal pool invertebrate Covered Species.* o *The total density of vernal pools will not exceed 10% of the suitable soil areas in any vernal pool re-establishment and/or establishment site, unless it can be shown that the suitable areas of that site historically supported greater*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	densities. o *Re-establishment or establishment may include inoculation when it is likely that no seed or cyst bank of vernal pool species remains at a site. Vernal Pool inocula will come from nearby vernal pools that are on the same geologic formation and soil type.* • *AMM UTILITY-2 (Utility Maintenance on Preserves): Utility maintenance inside SSHCP Preserves and SSHCP Preserve Setbacks containing vernal pools will occur only when vernal pools have been dry for 30 days, except in emergency situations related to human health and safety.* • *AMM UTILITY-3 (Trenchless Construction Methods): Where a pipeline or conduit crosses an existing or planned Preserve or will be located between adjacent Preserves (e.g., under a roadway that has a Preserve on both sides), trenchless construction methods will be used to minimize impacts to the existing soil profile (including impacts to a hardpan or duripan) to maintain the perched aquifer in Vernal Pool Grassland land cover type.* • *AMM UTILITY-4 (Siting of Entry and Exit Location): The entry and exit locations for the trenchless construction method (see Utility-3) will be sited to avoid impacts to vernal pools and Riparian Woodland, and to avoid direct take of SSHCP Covered Species.*			
Impact 3.3-2: The Project has the potential to, directly or indirectly, have a substantial adverse effect through habitat modifications or reductions, cause populations to drop below self-sustaining levels, substantially eliminate a community, or substantially reduce the number of, or restrict the range of, an endangered, rare or threatened species, including those considered candidate,	***Mitigation Measure 3.3-3:*** *The Project proponent shall implement the following SSHCP AMMs to the satisfaction of the City to avoid direct and indirect effects of Covered Activities on western spadefoot (Spea hammondii):* • *AMM WS-1 (Western Spadefoot Work Window): Ground-disturbing Covered Activities shall occur outside the breeding and dispersal season (after May 15 and before October 15), to the maximum extent practicable.* • *AMM WS-2 (Western Spadefoot Exclusion Fencing): If Covered Activities must be implemented after October 15 and before May 15, exclusion fencing shall be installed around the Project footprint before October 15, and the Project site must be monitored by an approved biologist following rain events. Temporary high visibility construction fencing shall be installed along the edge of work areas,*	City of Rancho Cordova Planning Department	During construction of the Project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
sensitive, or special-status, in local or regional plans, policies, regulations, or by the CDFW or USFWS - Reptile and Amphibian	*and silt fencing shall be installed immediately behind the temporary high-visibility construction fencing to exclude western spadefoot from entering the construction area. Fencing shall remain in place until all construction activities within the construction area are completed. No Project activities shall occur outside the delineated Project footprint. If a western spadefoot is encountered. If a western spadefoot is encountered, refer to WS-6, below.* • *AMM WS-3 (Western Spadefoot Monitoring): If Covered Activities must be implemented in the breeding and dispersal season (after October 15 and before May 15), an approved biologist experienced with western spadefoot identification and behavior shall monitor the Project site, including the integrity of any exclusion fencing. The approved biologist shall be on site daily while construction related activities are taking place, and shall inspect the Project site daily for western spadefoot prior to construction activities. The approved biologist shall also train construction personnel on the required avoidance procedures, exclusion fencing, and protocols in the event that a western spadefoot enters an active construction zone (i.e., outside the buffer zone). If a western spadefoot is encountered, refer to WS-6, below.* • *AMM WS-4 (Avoid Western Spadefoot Entrapment): If a Covered Activity occurs in western spadefoot modeled habitat (Figure 3-17), all excavated steep-walled holes and trenches more than 6 inches deep shall be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes and trenches shall be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within western spadefoot modeled habitat shall be inspected for western spadefoot by the approved biologist prior to being moved. If a western spadefoot is encountered, refer to WS-6, below.* • *AMM WS-5 (Erosion Control Materials in Western Spadefoot*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	Habitat): If erosion control is implemented within western spadefoot modeled habitat, non-entangling erosion control material shall be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material shall be used to ensure that western spadefoots are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials. • *AMM WS-6 (Western Spadefoot Encounter Protocol): If Covered Activities must be implemented during the breeding and dispersal season (after October 15 and before May 15), and a western spadefoot is encountered during construction activities, the approved biologist shall notify the Wildlife Agencies immediately. Construction activities shall be suspended in a 100-foot radius of the animal until the animal leaves the Project site on its own volition. If necessary, the approved biologist shall notify the Wildlife Agencies (i.e., the USFWS and CDFW) to determine the appropriate procedures related to relocation. If the animal is handled, a report shall be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the western spadefoot within 1 business day to the Wildlife Agencies. The biologist shall report any take of listed species to the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife immediately. Any worker who inadvertently injures or kills a western spadefoot or who finds dead, injured, or entrapped western spadefoot(s) must immediately report the incident to the approved biologist.*			
Impact 3.3-4: The Project has the potential to, directly or indirectly, have a substantial adverse effect through habitat modifications or reductions, cause populations to drop below self-sustaining levels, substantially eliminate a	***Mitigation Measure 3.3-4:*** *The Project proponent shall implement the following SSHCP AMMs to the satisfaction of the City to avoid direct and indirect effects of Covered Activities on tricolored blackbird:* • *AMM TCB-1 (Tricolored Blackbird Surveys): If modeled habitat for tricolored blackbird is present within a Covered Activity's Project footprint or within 500 feet of a Project footprint, then an approved biologist shall conduct a field investigation to determine if existing or potential nesting or foraging sites are present within the Project*	City of Rancho Cordova Planning Department	Prior to and during construction of the Project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
community, or substantially reduce the number of, or restrict the range of, an endangered, rare or threatened species, including those considered candidate, sensitive, or special-status, in local or regional plans, policies, regulations, or by the CDFW or USFWS - Birds	*footprint and adjacent areas within 500 feet of the Project footprint. Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. Within the Plan Area, potential tricolor blackbird nest sites are often associated with freshwater marsh and seasonal wetlands, or in thickets of willow, blackberry, wild rose, thistle, and other thorny vegetation. Tricolored blackbirds are also known to nest in crops associated with dairy farms. Foraging habitat is associated with annual grasslands, wet and dry vernal pools and other seasonal wetlands, agricultural fields (such as large tracts of alfalfa and pastures with continuous haying schedules and recently tilled fields), cattle feedlots, and dairies. The Third-Party Project Proponent shall map all existing or potential nesting or foraging sites and provide these maps to the Local Land Use Permittees (i.e., City of Rancho Cordova) and Implementing Entity (i.e., the South Sacramento Conservation Agency). Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 of the SSHCP for the process to conduct and submit survey information.* • *AMM TCB-2 (Tricolored Blackbird Pre-Construction Surveys): Pre-construction surveys shall be required to determine if active nests are present within a Project footprint or within 500 feet of a Project footprint if existing or potential nest sites were found during design surveys and construction activities shall occur during the breeding season (March 1 through September 15). An approved biologist shall conduct pre-construction surveys within 30 days and within 3 days of ground-disturbing activities, and within the proposed Project footprint and 500 feet of the proposed Project footprint to determine the presence of nesting tricolored blackbird. Pre-construction surveys shall be conducted during the breeding season (March 1 through August 31). Surveys conducted in February (to meet pre-construction survey requirements for work starting in March) must be conducted within 14 days and 3 days in advance of ground-disturbing activities. If a nest is present, then TCB-3 and TCB-4 shall be implemented. The approved biologist shall inform the Land Use Authority Permittee and the Implementing Entity of*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	species locations, and they in turn shall notify the Wildlife Agencies (i.e., the USFWS and CDFW). • *AMM TCB-3 (Tricolored Blackbird Nest Buffer): If active nests are found within the Project footprint or within 500 feet of any Project-related Covered Activity, the Third-Party Project Proponent shall establish a 500-foot temporary buffer around the active nest until the young have fledged.* • *AMM TCB-4 (Tricolored Blackbird Nest Buffer Monitoring): If nesting tricolored blackbirds are present within the Project footprint or within 500 feet of any Project-related Covered Activity, then an approved biologist experienced with tricolored blackbird behavior shall be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist shall be on site daily while construction-related activities are taking place near the disturbance buffer. Work within the nest disturbance buffer shall not be permitted. If the approved biologist determines that tricolored blackbirds are exhibiting agitated behavior, construction shall cease until the buffer size is increased to a distance necessary to result in no harm or harassment to the nesting tricolored blackbirds. If the biologist determines that the colonies are at risk, a meeting with the Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies shall be held to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist shall also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a tricolored blackbird flies into an active construction zone (i.e., outside the buffer zone).* • *AMM TCB-5 (Timing of Pesticide Use and Harvest Timing on Agricultural Preserves): On SSHCP Agricultural Preserves, pesticides (including herbicides) shall not be applied from January 1 through July 15.* ***Mitigation Measure 3.3-5:*** *The Project proponent shall implement the following SSHCP AMMs to the satisfaction of the City to avoid direct and indirect effects of Covered Activities on Swainson's hawk:*	City of Rancho Cordova Planning	Prior to and during construction of	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	• *AMM SWHA-1 (Swainson's Hawk Surveys): If modeled habitat for Swainson's hawk (Figure 3-25) is present within a Covered Activity's Project footprint or within 0.25 mile of a Project footprint, then an approved biologist shall conduct a survey to determine if existing or potential nesting sites are present within the Project footprint and adjacent areas within 0.25 mile of the Project footprint. Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. Nest sites are often associated with Riparian land cover, but also include lone trees in fields, trees along roadways, and trees around structures. Nest trees may include, but are not limited to, Fremont's cottonwood (Populus fremontii), oaks (Quercus spp.), willows (Salix spp.), walnuts (Juglans spp.), eucalyptus (Eucalyptus spp.), pines (Pinus spp.), and Deodar cedar (Cedrus deodara). The Third-Party Project Proponent shall map all existing and potential nesting sites and provide these maps to the Local Land Use Permittees (i.e., City of Rancho Cordova) and Implementing Entity (i.e., the South Sacramento Conservation Agency). Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 for the process to conduct and submit survey information.* • *AMM SWHA-2 (Swainson's Hawk Pre-Construction Surveys): Pre-construction surveys shall be required to determine if active nests are present within a Project footprint or within 0.25 mile of a Project footprint if existing or potential nest sites were found during initial surveys and construction activities shall occur during the breeding season (March 1 through September 15). An approved biologist shall conduct pre-construction surveys within 30 days and 3 days of ground-disturbing activities to determine presence of nesting Swainson's hawk. Pre-construction surveys shall be conducted during the breeding season (March 1 through September 15). If a nest is present, then SWHA-3 and SWHA-4 shall be implemented. The approved biologist shall inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn shall notify the Wildlife Agencies (i.e., the USFWS and CDFW).*	Department	the Project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	• *AMM SWHA-3 (Swainson's Hawk Nest Buffer): If active nests are found within the Project footprint or within 0.25 mile of any Project-related Covered Activity, the Third-Party Project Proponent shall establish a 0.25 mile disturbance buffer around the active nest until the young have fledged, with concurrence from the Wildlife Agencies.* • *AMM SWHA-4 (Swainson's Hawk Nest Buffer Monitoring): If nesting Swainson's hawks are present within the Project footprint or within 0.25 mile of any Project-related Covered Activity, then an approved biologist experienced with Swainson's hawk behavior shall be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist shall be on site daily while construction-related activities are taking place within the buffer. Work within the temporary nest disturbance buffer can occur with the written permission of the Implementing Entity and Wildlife Agencies. If nesting Swainson's hawks begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the approved biologist shall have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies shall meet to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist shall also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a Swainson's hawk flies into an active construction zone (i.e., outside the buffer zone).* ***Mitigation Measure 3.3-6:*** *The Project proponent shall implement the following SSHCP AMMs to avoid direct and indirect effects of Covered Activities on western burrowing owl:* • *AMM WBO-1 (Western Burrowing Owl Surveys): Surveys within modeled habitat are required for both the breeding and non-breeding season. If the Project site falls within modeled habitat, an approved biologist shall survey the Project site and map all*	City of Rancho Cordova Planning Department	Prior to and during construction of the Project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	burrows, noting any burrows that may be occupied. Occupied burrows are often (but not always) indicated by tracks, feathers, egg shell fragments, pellets, prey remains, and/or excrement. Surveying and mapping shall be conducted by the approved biologist while walking transects throughout the entire Project site plus all accessible areas within a 250-foot radius from the Project site. The centerline of these transects shall be no more than 50 feet apart and shall vary in width to account for changes in terrain and vegetation that can preclude complete visual coverage of the area. For example, in hilly terrain with patches of tall grass, transects shall be closer together, and in open areas with little vegetation, they can be 50 feet apart. This methodology is consistent with current survey protocols for this species (California Burrowing Owl Consortium 1993). Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. If suitable habitat is identified during the initial survey, and if the Project does not fully avoid the habitat, pre-construction surveys shall be required. Burrowing owl habitat is fully avoided if Project-related activities do not impinge on a 250foot buffer established by the approved biologist around suitable burrows. See Chapter 10 for the process to conduct and submit survey information. • *AMM WBO-2 (Western Burrowing Owl Pre-Construction Surveys): Prior to any Covered Activity ground disturbance, an approved biologist shall conduct pre-construction surveys in all areas that were identified as suitable habitat during the initial surveys. The purpose of the pre-construction surveys is to document the presence or absence of burrowing owls on the Project site, particularly in areas within 250 feet of construction activities. To maximize the likelihood of detecting owls, the pre-construction survey shall last a minimum of 3 hours. The survey shall begin 1 hour before sunrise and continue until 2 hours after sunrise (3 hours total), or begin 2 hours before sunset and continue until 1 hour after sunset. Additional time may be required for large project sites. A minimum of two pre-construction surveys shall be conducted (if owls are detected on the first survey, a second survey is not needed). All owls*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	observed shall be counted and their location shall be mapped. Surveys shall conclude no more than 2 calendar days prior to construction. Therefore, the Third-Party Project Proponent must begin surveys no more than 4 days prior to construction (2 days of surveying plus up to 2 days between surveys and construction). To avoid last-minute changes in schedule or contracting that may occur if burrowing owls are found, the Third-Party Project Proponent may also conduct a preliminary survey up to 15 days before construction. This preliminary survey may count as the first of the two required surveys as long as the second survey concludes no more than 2 calendar days in advance of construction. • *AMM WBO-3 (Burrowing Owl Avoidance): If western burrowing owl or evidence of western burrowing owl is observed on the Project site or within 250 feet of the Project site during pre-construction surveys, then the following shall occur:* ***During Breeding Season**: If the approved biologist finds evidence of western burrowing owls within a Project site during the breeding season (February 1 through August 31), all Project-related activities shall avoid nest sites during the remainder of the breeding season or while the nest remains occupied by adults or young (nest occupation includes individuals or family groups foraging on or near the site following fledging). Avoidance is establishment of a minimum 250-foot buffer zone around nests. Construction and other Project-related activities may occur outside of the 250-foot buffer zone. Construction and other Project-related activities may be allowed inside of the 250-foot non-disturbance buffer during the breeding season if the nest is not disturbed, and the Third-Party Project Proponent develops an avoidance, minimization, and monitoring plan that is approved by the Implementing Entity (i.e., the South Sacramento Conservation Agency) and Wildlife Agencies (i.e., the USFWS and CDFW) prior to Project construction based on the following criteria:* o *The Implementing Entity (i.e., the South Sacramento Conservation Agency) and Wildlife Agencies (i.e., the USFWS and CDFW) approve of the avoidance and*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	minimization plan provided by the Project applicant. o *An approved biologist monitors the owls for at least 3 days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction).* o *The same approved biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.* *If there is any change in owl nesting and foraging behavior as a result of construction activities, the approved biologist shall have authority to shut down activities within the 250-foot buffer. Construction cannot resume within the 250-foot buffer until any owls present are no longer affected by nearby construction activities, and with written concurrence from the Wildlife Agencies.* *If monitoring by the approved biologist indicates that the nest is abandoned prior to the end of nesting season and the burrow is no longer in use, the non-disturbance buffer zone may be removed if approved by the Wildlife Agencies. The approved biologist shall excavate the burrow in accordance with the latest California Department of Fish and Wildlife guidelines for burrowing owl to prevent reoccupation after receiving approval from the Wildlife Agencies.* *The Implementing Entity and Wildlife Agencies shall respond to a request from the Third-Party Project Proponent to review the proposed construction monitoring plan within 21 days.* ***During Non-Breeding Season**: During the non-breeding season (September 1 through January 31), the approved biologist shall establish a minimum 250-foot non-disturbance buffer around occupied burrows. Construction activities outside of this 250-foot buffer shall be allowed. Construction activities within the non-disturbance buffer shall be allowed if the following criteria are met to prevent owls from abandoning overwintering sites:* o *An approved biologist monitors the owls for at least 3*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	days prior to construction to determine baseline foraging behavior (i.e., behavior without construction). o *The same approved biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.* o *If there is any change in owl foraging behavior as a result of construction activities, the approved biologist shall have authority to shut down activities within the 250foot buffer.* o *If the owls are gone for at least 1 week, the Third-Party Project Proponent may request approval from the Implementing Entity (i.e., the South Sacramento Conservation Agency) and Wildlife Agencies (i.e., the USFWS and CDFW) that an approved biologist excavate usable burrows and install one-way exclusionary devices to prevent owls from re-occupying the site. After all usable burrows are excavated, the buffer zone shall be removed and construction may continue.* *Monitoring must continue as described above for the non-breeding season as long as the burrow remains active.* • *AMM WBO-4 (Burrowing Owl Construction Monitoring): During construction of Covered Activities, 250-foot construction buffer zones shall be established and maintained around any occupied burrow. An approved biologist shall monitor the site to ensure that buffers are enforced and owls are not disturbed. The approved biologist shall also train construction personnel on avoidance procedures, buffer zones, and protocols in the event that a burrowing owl flies into an active construction zone.* • *AMM WBO-5 (Burrowing Owl Passive Relocation): Passive relocation is not allowed without the express written approval of the Wildlife Agencies. Passive owl relocation may be allowed on a case-by-case basis on Project sites during the non-breeding season (September 1 through January 31) with the written approval of the Wildlife Agencies if the other measures described in this condition			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	preclude work from continuing. Passive relocation must be done in accordance with the latest California Department of Fish and Wildlife guidelines for burrowing owl. Passive relocation shall only be proposed if the burrow needing to be removed or with the potential to collapse from construction activities is the result of a Covered Activity. If passive relocation is approved by the Wildlife Agencies, an approved biologist can passively exclude birds from their burrows during the non-breeding season by installing one-way doors in burrow entrances. These doors shall be in place for 48 hours to ensure that owls have left the burrow, and then the biologist shall excavate the burrow to prevent reoccupation. Burrows shall be excavated using hand tools only. During excavation, an escape route shall be maintained at all times. This may include inserting an artificial structure into the burrow to avoid having materials collapse into the burrow and trap owls inside. Other methods of passive relocation, based on best available science, may be approved by the Wildlife Agencies over the 50-year Permit Term. • *AMM WBO-6 (Burrowing Owl Timing of Maintenance Activities): All activities adjacent to existing or planned Preserves, Preserve Setbacks, or Stream Setback areas shall be seasonally timed, when safety permits, to avoid or minimize adverse effects on occupied burrows.* • *AMM WBO-7 (Rodent Control): Rodent control shall be allowed only in developed portions of a Covered Activity Project site within western burrowing owl modeled habitat. Where rodent control is allowed, the method of rodent control shall comply with the methods of rodent control discussed in the 4(d) Rule published in the U.S. Fish and Wildlife Service's (2004) final listing rule for tiger salamander.* ***Mitigation Measure 3.3-7:*** *The Project proponent shall implement the following SSHCP AMMs to the satisfaction of the City to avoid direct and indirect effects on covered raptor species. This measure applies to loggerhead shrike (Lanius ludovicianus), northern harrier (Circus cyaneus), and white-tailed kite (Elanus leucurus). The following AMMs do not apply to*	City of Rancho Cordova Planning Department	Prior to and during construction of the Project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	ferruginous hawk (Buteo regalis), as they do not nest in the Plan Area. The following AMMs also do not apply to Swainson's hawk or burrowing owl, as specific AMMs have been developed for these covered raptor species and are included in separate mitigation measures. • *AMM RAPTOR-1 (Raptor Surveys): An approved biologist shall conduct a field investigation to determine if existing or potential nesting sites are present within the Project footprint and adjacent areas within 0.25 mile of the Project footprint. Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. The Project proponent shall map all existing or potential nesting sites and provide these maps to the Local Land Use Permittees (i.e., City of Rancho Cordova) and Implementing Entity (i.e., the South Sacramento Conservation Agency). Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 for the process to conduct and submit survey information.* • *AMM RAPTOR-2 (Raptor Pre-Construction Surveys): Pre-construction surveys shall be required to determine if active nests are present with a Project footprint or within 0.25 mile of a Project footprint if existing or potential nest sites are found during initial surveys and construction activities shall occur during the raptor breeding season. An approved biologist shall conduct pre-construction surveys within 30 days and 3 days of ground disturbing activities within the proposed Project footprint and within 0.25 mile of the proposed Project footprint to determine presence of nesting covered raptor species. Preconstruction surveys shall be conducted during the raptor breeding season. If a nest is present, then RAPTOR-3 and RAPTOR-4 shall be implemented. The approved biologist shall inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn shall notify the Wildlife Agencies.* • *AMM RAPTOR-3 (Raptor Nest/Roost Buffer): If active nests are found within the Project footprint or within 0.25 mile of any Project-related Covered Activity, the Third-Party Project Proponent shall establish a 0.25 mile temporary nest disturbance buffer*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	around the active nest until the young have fledged. • *AMM RAPTOR-4 (Raptor Nest/Roost Buffer Monitoring): If Project-related Covered Activities within the temporary nest disturbance buffer are determined to be necessary during the nesting season, then an approved biologist experienced with raptor behavior shall be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist shall be on site daily while construction-related activities are taking place within the disturbance buffer. Work within the temporary nest disturbance buffer can occur with the written permission of the Implementing Entity and Wildlife Agencies. If nesting raptors begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the approved biologist/monitor shall have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies shall meet to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist shall also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a covered raptor species flies into an active construction zone (i.e., outside the buffer zone).* ***Mitigation Measure 3.3-8:*** *The Project proponent shall implement the following measure to avoid or minimize impacts on other protected bird species that may occur on the site:* • *Prior to any ground disturbance a pre-construction survey for protected bird species shall be completed. This survey shall be conducted in the morning or evening hours within 30 days prior to any construction activities. The entire site shall be surveyed for birds, nests and nesting behavior. Common nesting behavior by birds includes; collecting nesting materials, bringing food items to a nest and vocalizations from young or from adults to attract a mate and to establish or defend a nesting territory. A construction-free buffer of suitable dimensions must be established around any active*	City of Rancho Cordova Planning Department	Prior to any ground disturbance	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	migratory bird nests (up to 250 feet, depending on the location and species) for the duration of the Project or until it has been determined that the chicks have fledged and are independent of their parents.			
Impact 3.3-5: The Project has the potential to, directly or indirectly, have a substantial adverse effect through habitat modifications or reductions, cause populations to drop below self-sustaining levels, substantially eliminate a community, or substantially reduce the number of, or restrict the range of, an endangered, rare or threatened species, including those considered candidate, sensitive, or special-status, in local or regional plans, policies, regulations, or by the CDFW or USFWS - Mammals	***Mitigation Measure 3.3-9:*** *The Project proponent shall implement the following SSHCP AMMs to the satisfaction of the City to avoid or minimize impacts on protected bat species that may occur on the site:* • *AMM BAT-1 (Winter Hibernaculum Surveys): An approved biologist shall conduct a field investigation of the Project footprint and adjacent areas within 300 feet of a Project footprint to determine if a potential winter hibernaculum is present, and to identify and map potential hibernaculum sites. Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. If potential hibernaculum sites are found, the Project proponent shall note their locations on Project designs and shall design the Project to avoid all areas within a 300-foot buffer around the potential hibernaculum sites. Winter hibernaculum habitat is fully avoided if Project-related activities do not impinge on a 300-foot buffer established by the approved biologist around an existing or potential winter hibernaculum site.* • *AMM BAT-2 (Winter Hibernaculum Pre-Construction Surveys): If the Project proponent elects not to avoid potential winter hibernaculum sites within the Project footprint plus a 300-foot buffer, additional surveys are required. Prior to any ground disturbance related to Covered Activities, an approved biologist shall conduct a preconstruction survey within 3 days of ground-disturbing activities within the Project footprint and 300 feet of the Project footprint to determine the presence of winter hibernaculum sites. Pre-construction surveys shall be conducted during the winter hibernaculum season (November 1 through March 31). If a winter hibernaculum is present, then BAT-3 and BAT-4 shall be implemented. The approved biologist shall inform the City of Rancho Cordova and Implementing Entity (i.e., the South Sacramento Conservation Agency) of species locations, and they in*	City of Rancho Cordova Planning Department	Prior to and during construction of the Project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	turn shall notify the Wildlife Agencies (i.e., the USFWS and CDFW). • *AMM BAT-3 (Winter Hibernaculum Buffer): If active winter hibernaculum sites are found within the Project footprint or within 300 feet of the Project footprint, the Project proponent shall establish a 300-foot temporary disturbance buffer around the active winter hibernaculum site until bats have vacated the hibernaculum and the Implementing Entity and Wildlife Agencies concur.* • *AMM BAT-4 (Bat Eviction Methods): An approved biologist shall determine if non-maternity and non-hibernaculum day and night roosts are present on the Project site. If necessary, an approved biologist shall use safe eviction methods to remove bats if direct impacts to non-maternity and non-hibernaculum day and night roosts cannot be avoided. If a winter hibernaculum site is present, Covered Activities shall not occur until the hibernaculum is vacated, or, if necessary, safely evicted using methods acceptable to the Wildlife Agencies.* ***Mitigation Measure 3.3-10:*** *The Project proponent shall implement the following measure to avoid or minimize impacts on American badger that may occur on the site:* • *A qualified biologist shall conduct a pre-construction survey for American badger within 14 days prior to the start of ground disturbance. If no American badgers are observed, then a letter report documenting the results of the survey shall be provided to the Project proponent for their records, and no additional measures are recommended. If construction does not commence within 14 days of the preconstruction survey, or halts for more than 14 days, a new survey is required. The results of the survey shall be submitted to the City's Planning Department.* • *If American badgers or their dens are found during the survey, additional avoidance measures shall be implemented, including having a qualified biologist conduct a pre-construction survey within 24 hours prior to commencement of construction activities, performing a Worker Awareness Training to all construction workers, and being present on the Project site during grading*	City of Rancho Cordova Planning Department	Prior to and during construction of the Project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	activities for the purpose of temporarily halting construction activities until the biologist determines that the badger has left the construction footprint on its own accord. The results of the survey shall be submitted to the City's Planning Department.			
Impact 3.3-6: The Project has the potential to, directly or indirectly, have a substantial adverse effect through habitat modifications or reductions, cause populations to drop below self-sustaining levels, substantially eliminate a community, or substantially reduce the number of, or restrict the range of, an endangered, rare or threatened species, including those considered candidate, sensitive, or special-status, in local or regional plans, policies, regulations, or by the CDFW or USFWS - Plants	***Mitigation Measure 3.3-11:*** *The Project proponent shall implement the following measure to the satisfaction of the City to avoid or minimize impacts on special-status plants that may occur on the site:* • *AMM PLANT-1 (Rare Plant Surveys): The Project site shall be surveyed for rare plants, specifically including Ahart's dwarf rush (Juncus leiospermus var. ahartii), Dwarf downingia (Downingia pusilla), pincushion navarretia (Navarretia myersii ssp. myersii), and hoary navarretia (Navarretia eriocephala), by an approved biologist and following the CDFW rare plant survey protocols (CDF 2009) or the most recent CDFW rare plant survey protocols. An approved biologist will conduct the field surveys and will identify and map plant species occurrences according to the protocols.* • *AMM PLANT-2 (Rare Plant Protection): If a rare plant listed in AMM PLANT-1 is detected within an area proposed to be disturbed by a Covered Activity or is detected within 250 feet of the area proposed to be disturbed by a Covered Activity, the Implementing Entity (i.e., the South Sacramento Conservation Agency) will assure one unprotected occurrence of the species is protected within a SSHCP Preserve before any ground disturbance occurs at the Project site.* • *AMM ORCUTT-1 (Orcutt Grass Surveys): The Project site will be surveyed for Sacramento and slender Orcutt grass by an approved biologist following CDFW rare plant survey protocols (CDFG 2009) or most recent CDFW guidelines to determine if Sacramento and/or slender Orcutt grass is present. An approved biologist will conduct the field investigation to identify and map occurrences.* • *AMM ORCUTT-2 (Orcutt Grass Protection): Where known or new Sacramento or slender Orcutt grass occurrences are found, they will be protected within an SSHCP Preserve that is at least 50 acres. The occurrence will be located interior to the Preserve at a distance of no less than 300 feet from the edge of the Preserve boundary. If a*	City of Rancho Cordova Planning Department	Prior to and during construction of the Project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	Project proponent encounters a previously undiscovered occurrence of Sacramento or slender Orcutt grass on a Covered Activity Project site, the Project proponent will contact the Implementing Entity or City of Rancho Cordova with authority over the Project, who will coordinate with the Wildlife Agencies (i.e., the USFWS and CDFW) for written concurrence of avoidance to ensure that the Project does not cause take of the species.			
Impact 3.3-7: The Project has the potential to have substantial adverse effect on federally- or state-protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means	*Implement* ***Mitigation Measure 3.5-1.*** ***Mitigation Measure 3.3-12****: Prior to any construction activities that would disturb a jurisdictional feature, The Project proponent shall submit a wetland delineation, site plan, and mitigation methods to the City of Rancho Cordova and the SSHCP. The Project proponent shall submit a SSHCP permit application package to the City of Rancho Cordova ("Land Use Authority Permittee") as a request that coverage provided by City's SSHCP Aquatic Resources Program be extended to the proposed activities. The City of Rancho Cordova shall review the SSHCP permit application for consistency with all of the SSHCP requirements and provide the South Sacramento Conservation Agency ("Implementing Entity) with a copy of the SSHCP requirements for tracking purposes. The Project proponent shall be responsible for paying all SSHCP development fees associated with obtaining coverage from the City of Rancho Cordova.* *Additionally, the Project applicant shall participate in the SSHCP Aquatic Resources Program (ARP) by paying the applicable mitigation fee for the loss of jurisdictional aquatic features. Costs for the aquatic resources compensatory mitigation projects shall be covered through the Covered Activity project mitigation fees collected under the SSHCP. The SSHCP includes a fee structure that is distinguished by land cover type. This approach accounts for variations in costs associated with the particular requirements for each land cover type. The Project proponent shall pay fees based on the land cover types affected by the development Project and the fee schedule.*	See Mitigation Measure 3.5-1 City of Rancho Cordova Planning Department	See Mitigation Measure 3.5-1 Prior to any construction activities that would disturb a jurisdictional feature	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	Mitigation Measure 3.3-13*: The Project proponent shall implement the following SSHCP Avoidance and Minimization Measures (AMMs) to the satisfaction of the City to avoid direct and indirect effects of Covered Activities on Aquatic land covers of the Verna Pool Ecosystem:* • *AMM LID-1 (Stormwater Quality): When the size of a Covered Activity project exceeds the thresholds established by the State Water Resources Control Board (SWRCB) (see the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions, or future SWRCB-approved design manuals applicable to the Plan Area), incorporate stormwater management into site design to satisfy the requirements outlined in the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions. Stormwater management may include groundwater recharge (LID-2) and natural site features (LID-3).* • *AMM LID-2 (Groundwater Recharge): When siting SSHCP Preserves containing Riparian, Open Water, or Freshwater Marsh SSHCP land cover types, the Implementing Entity (i.e., the South Sacramento Conservation Agency) will prioritize locations that are suitable for groundwater recharge.* • *AMM LID-3 (Natural Site Features): Incorporate preservation of a site's natural aquatic features (such as creeks and streams) into project design to retain natural hydrologic patterns and to retain habitat that might be used by Covered Species.* • *AMM BMP-1 (Construction Fencing): Orange construction fencing will be installed to ensure that ground disturbance does not extend beyond the allowed construction footprint (i.e., the limit of project construction plus equipment staging areas and access roads). Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will mark the outer boundary of any Preserve Setback or Stream Setback adjacent to or within the project site with orange construction fencing prior to ground disturbance. This fencing will remain in place until project completion, as identified by the Plan Permittee.* • *AMM BMP-2 (Erosion Control): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will install temporary control measures for sediment,*	City of Rancho Cordova Planning Department	Prior to and during construction of the Project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	stormwater, and pollutant runoff as required by the Plan Permittee to protect water quality and species habitat. Silt fencing or other appropriate sediment control device(s) will be installed downslope of any Covered Activity that disturbs soils. *Fiber rolls and seed mixtures used for erosion control will be certified as free of viable noxious weed seed. As discussed in Section 5.4.2, Covered Species Take Avoidance and Minimization Measures, erosion controls installed in or adjacent to Plan Area modeled habitat for giant gartersnake (Thamnophis gigas), western pond turtle (Actinemys marmorata), California tiger salamander (California tiger salamander), or western spadefoot (see Chapter 3) must be of appropriate design and materials that will not entrap the species (e.g., not contain mesh netting). Regular monitoring and maintenance of the project's erosion control measures will be conducted until project completion to ensure effective operation of erosion control measures.* • *AMM BMP-3 (Equipment Storage and Fueling): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will ensure that equipment storage and staging will occur in the development footprint only (not sited in any existing on-site Preserve, planned on-site Preserve, Preserve Setback, Stream Setback, or aquatic land cover type). Fuel storage and equipment fueling will occur away from waterways, stream channels, stream banks, and other environmentally sensitive areas within the development footprint.* *However, certain equipment storage and fueling activities can be allowed on Preserves within habitat re-establishment/establishment sites (refer to Section 5.2.7) if no location outside of the site is available. If a Covered Activity results in a spill of fuel, hydraulic fluid, lubricants, or other petroleum products, the spill will be absorbed and waste disposed of in a manner to prevent pollutants from entering a waterway, Preserve, Preserve Setback, or Stream Setback.* • *AMM BMP-4 (Erodible Materials): Plan Permittees and Third-Party Project Proponents implementing Covered Activities must not deposit erodible materials into waterways. Vegetation clippings,*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	brush, loose soils, or other debris material will not be stockpiled within stream channels or on adjacent banks. Erodible material must be disposed of such that it cannot enter a waterway, Preserve, Preserve Setback, Stream Setback, or aquatic land cover type. If water and sludge must be pumped from a subdrain or other structure, the material will be conveyed to a temporary settling basin to prevent sediment from entering a waterway. • *AMM BMP-5 (Dust Control): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will water active construction sites regularly, if warranted, to avoid or minimize impacts from construction dust on adjacent vegetation and wildlife habitats. No surface water will be used from aquatic land covers; water will be obtained from a municipal source or existing groundwater well.* • *AMM BMP-6 (Construction Lighting): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will direct all temporary construction lighting (e.g., lighting used for security or nighttime equipment maintenance) away from adjacent natural habitats, and particularly Riparian and Wetland habitats and wildlife movement areas.* • *AMM BMP-7 (Biological Monitor): If a Covered Activity includes ground disturbance within Covered Species modeled habitat, an approved biologist will be on site during the period of ground disturbance, and may need to be on site during other construction activities depending on the Covered Species affected. After ground-disturbing project activities are complete, the approved biologist will train an individual to act as the on-site construction monitor for the remainder of construction, with the concurrence of the Permitting Agencies. The on-site monitor will attend the training described in BMP-8. The approved biologist and the on-site monitor will have oversight over implementation of Avoidance and Minimization Measures, and will have the authority to stop activities if any of the requirements associated with those measures are not met. If the monitor requests that work be stopped, the Wildlife Agencies (i.e., the USFWS and CDFW) will be notified within one working day by email. The approved biologist and/or on-site*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	monitor will record all observations of listed species on California Natural Diversity Database field sheets and submit them to the California Department of Fish and Wildlife. The approved biologist or on-site monitor will be the contact source for any employee or contractor who might inadvertently kill or injure a Covered Species or who finds a dead, injured or entrapped individual. The approved biologist and on-site monitor's names and telephone numbers will be provided to the Wildlife Agencies prior to the initiation of ground-disturbing activities. Refer to species-specific measures for details on requirements for biological monitors. • *AMM BMP-11 (Speed Limit): Project-related vehicles will observe the posted speed limits on paved roads and a 10-mile-per-hour speed limit on unpaved roads and during travel in project areas. Construction crews will be given weekly tailgate instruction to travel only on designated and marked existing, cross-country, and project-only roads.* • *AMM ROAD-1 (Road Project Location): Road projects will be located in the least environmentally sensitive area to avoid, to the maximum extent practicable, impacts on Covered Species, Covered Species habitat, and waters of the United States. Road project alignments will follow existing roads, road easements, and rights-of-way, or be sited in disturbed areas to minimize habitat loss and additional habitat fragmentation.* • *AMM UTILITY-4 (Siting of Entry and Exit Location): The entry and exit locations for the trenchless construction method (see Utility-3) will be sited to avoid impacts to vernal pools and Riparian Woodland, and to avoid direct take of SSHCP Covered Species.* • *AMM EDGE-4 (Locate Stormwater Control Outside Preserves): Roads, sidewalks, and other impermeable surfaces of Urban Development Covered Activities adjacent to existing or planned Preserves will slope away from Preserves and Preserve Setbacks or intercept drainage with swales or curbs and gutters to preclude drainage from entering Preserves and Preserve Setbacks. Stormwater flows must be directed away from Preserves and Preserve Setbacks and directed into stormwater control facilities inside the development (outside Preserves and Preserve Setbacks)*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	(see EDGE-6 for exception to EDGE-4 in certain SSHCP Linkage Preserves). • *AMM EDGE-5 (Stormwater Control in Preserve Setbacks): If trails are established in any Preserve Setback in compliance with EDGE-3, the trail must be sloped away from the Preserve, and rainwater leaving the trail surface must flow into an adjacent low-velocity bio-retention swale or cell to keep rainwater runoff and trail contaminants from entering the Preserve. Low-velocity bio-retention swales or cells are typically small linear features placed on one or both sides of a trail. As required by EDGE-3, trails and their adjacent bio-retention swales or cells must be located on the side of the Preserve Setback nearest development.* • *AMM EDGE-6 (Detention Basins in Linkage Preserves): Because planned SSHCP Linkage Preserves L1, L2, L4, L7, L8, L9, and L10 (see Section 7.5) surround natural creeks or streams that must receive stormwater from planned adjacent Urban Development Covered Activities, a limited number of stormwater detention basins will be allowed on those Linkage Preserves. Detention basins within Linkage Preserves (see Section 5.2.7) will be designed and constructed with fill material to build up the perimeter of the detention basin so as not to impact the soil restrictive layer (duripan or hardpan) and function of the soil perched aquifer. Detention basins within Linkage Preserves will capture stormwater flows and runoff, and will discharge water to the stream/creek or percolate collected water to the soil perched aquifer. Detention basin structures that collect stormwater entering the basin or convey stormwater leaving the basin must be designed to avoid and minimize effects to Covered Species habitat in the Linkage Preserve.* • *AMM EDGE-7 (Hardpan/Duripan Protection): To protect the soil perched aquifer and the micro-watersheds supporting existing vernal pool hydrology, activities that have the potential to cut into, disrupt, or remove the soil's restrictive layer (hardpan or duripan) will not occur within Preserves or Preserve Setbacks. However, in certain circumstances, the Covered Activities defined in Section 5.2.6, Covered Activities in Stream Setbacks in the UDA, and Section 5.2.8, Covered Activities in the Laguna Creek Wildlife Corridor of*			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	the Preserve System, may result in punctures or other minor disruptions of the soil hardpan or duripan if approved by the Implementing Entity and the Technical Advisory Committee according to the process described in Chapter 9 of the SSHCP. If a Covered Activity on a Preserve or Preserve Setback results in a puncture or other disruption to the soil hardpan or duripan, the puncture will be sealed using bentonite clay or other material that maintains the functionality of the soil's restrictive layer and associated perched aquifer.			
CULTURAL AND TRIBAL RESOURCES				
Impact 3.4-1: Project implementation has the potential to cause a substantial adverse change to a significant historical or archaeological resource, as defined in CEQA Guidelines §15064.5, or a significant tribal cultural resource, as defined in Public Resources Code §21074	***Mitigation Measure 3.4-1:*** *Prior to any ground-disturbing activities on the Project site, a qualified archaeologist shall conduct pre-construction worker cultural resources sensitivity training. The training session shall focus on the recognition of the types of historical and cultural, including Native American, resources that could be encountered, procedures to be followed if resources are found, and pertinent laws protecting these resources. Representatives from the Shingle Springs Band of Miwok Indians and the United Auburn Indian Community shall be invited to attend the training.* *Representatives from the Shingle Springs Band of Miwok Indians and the United Auburn Indian Community shall be invited to monitor ground-disturbing activities during construction and shall be provided with any safety requirements that shall be followed during any ground-disturbing and construction activities.* *If any cultural resources, including prehistoric or historic artifacts, or other indications of archaeological resources or tribal cultural resources are found during grading and construction activities, all work shall be halted immediately within a 100-foot radius of the discovery until an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, has evaluated the find(s) and until the Shingle Springs Band of Miwok Indians and the United Auburn Indian Community have been contacted and invited to review and document the find.*	City of Rancho Cordova Planning Department	Prior to any ground-disturbing activities on the Project site	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	Work shall not continue at the discovery site until the archaeologist conducts sufficient research and data collection to make a determination that the resource is either 1) not cultural in origin; or 2) not potentially significant or eligible for listing on the NRHP or CRHR; or 3) not a significant Public Trust Resource. *If a significant finding is made, a plan must be developed for this inadvertent finding. Measures to potentially address a subsurface finding could include one or more of the following depending upon the nature of the find: recordation of the finding; further efforts to define the extent and nature of the resource; preservation in place, and re-design to ensure long-term preservation of the resource; and/or data recovery excavations.* *If Native American resources are identified, a Native American monitor, following the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites established by the Native American Heritage Commission, may also be required and, if required, shall be retained at the Applicant's expense. Additionally, if any of these resources are identified, the Shingle Springs Band of Miwok Indian shall be consulted to go over the process to protect any potentially important or sacred resources, particularly if located along the on-site aquatic resources.*			
Impact 3.4-2: Project implementation has the potential to disturb human remains, including those interred outside of formal cemeteries	***Mitigation Measure 3.4-2:*** *If human remains are discovered during the course of construction during any phase of the Project, work shall be halted at the site and at any nearby area reasonably suspected to overlie adjacent human remains until the Sacramento County Coroner has been informed and has determined that no investigation of the cause of death is required. If the remains are of Native American origin, the following steps will be taken:* • *The coroner shall contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The most likely descendent shall make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.* • *The Shingle Springs Band of Miwok Indian shall be consulted to go*	City of Rancho Cordova Planning Department	If human remains are discovered during the course of construction during any phase of the Project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	over the process to protect any human remains, particularly if located along the on-site aquatic resources. • *The landowner shall retain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance when any of the following conditions occurs:* o *The Native American Heritage Commission is unable to identify a descendent.* o *The descendant identified fails to make a recommendation.* o *The City of Rancho Cordova or its authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.*			
GEOLOGY AND SOILS				
Impact 3.5-2: Project construction and implementation has the potential to result in substantial soil erosion or the loss of topsoil	***Mitigation Measure 3.5-1:*** *Prior to any site disturbance, the Project proponent shall submit a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) to the RWQCB in accordance with the NPDES General Construction Permit requirements. The SWPPP shall be designed to control pollutant discharges utilizing Best Management Practices (BMPs) and technology to reduce erosion and sediments. BMPs may consist of a wide variety of measures taken to reduce pollutants in stormwater runoff from the Project site. Measures shall include temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) that will be employed to control erosion from disturbed areas. Final selection of BMPs will be subject to approval by the City of Rancho Cordova and the RWQCB. The SWPPP will be kept on site during construction activity and will be made available upon request to representatives of the RWQCB.*	City of Rancho Cordova Planning Department Regional Water Quality Control Board	Prior to any site disturbance	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
Impact 3.5-3: The Project has the potential to be located on a geologic unit or soil that is unstable, or that would become unstable as a result of Project implementation, and potentially result in landslide, lateral spreading, subsidence, liquefaction or collapse	***Mitigation Measure 3.5-2:*** *Prior to final design approval and issuance of building permits for each phase of the Project, the Project applicant shall submit to the City of Rancho Cordova Building and Safety Division, for review and approval, a design-level geotechnical engineering report produced by a California Registered Civil Engineer or Geotechnical Engineer. The design-level report shall address, at a minimum, the following:* • *Compaction specifications and subgrade preparation for onsite soils;* • *Structural foundations, including concrete design that addresses potential soils corrosivity;* • *Grading practices; and* • *Expansive/unstable soils.* *The design-level geotechnical engineering report shall include a summary of the site, soil, and groundwater conditions, seismicity, laboratory test data, exploration data and a site plan showing exploratory locations and improvement limits. The report shall include borings/test pits for park sites and include recommendations for park site development, including the potential to amend soils, if necessary, during the preliminary grading of the Project site during the first phase of construction activities. The report shall be signed by a licensed California Geotechnical Engineer. Design-level recommendations shall be included in the foundation and improvement plans and approved by the City of Rancho Cordova Public Works Department prior to issuance of any building permits.*	City of Rancho Cordova Building and Safety Division City of Rancho Cordova Public Works Department	Prior to final design approval and issuance of building permits for each phase of the Project	
Impact 3.5-5: Project implementation has the potential to directly or indirectly destroy a unique paleontological resource	***Mitigation Measure 3.5-3:*** *If any paleontological resources are found during grading and construction activities, all work shall be halted immediately within a 200-foot radius of the discovery until a qualified paleontologist has evaluated the find.* *Work shall not continue at the discovery site until the paleontologist evaluates the find and makes a determination regarding the significance of the resource and identifies recommendations for conservation of the resource, including preserving in place or relocating on the Project site, if feasible, or collecting the resource to the extent feasible and documenting the find with the University of California Museum of Paleontology.*	City of Rancho Cordova Planning Department	If any paleontological resources are found during grading and construction activities	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
GREENHOUSE GASES, CLIMATE CHANGE, AND ENERGY				
Impact 3.6-1: The Project has the potential to generate construction-related GHGs, either directly or indirectly, that may have a significant effect on the environment	***Mitigation Measure 3.6-1:*** *The Project applicant shall implement the following best management practices (BMPs) for reducing GHG emissions from construction projects, as feasible. The City of Rancho Cordova shall be responsible for monitoring implementation of these measures:* • *Improve fuel efficiency from construction equipment:* o *Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than 3 minutes (5 minute limit is required by the state airborne toxics control measure [Title 13, sections 2449(d)(3) and 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site.* o *Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.* o *Train equipment operators in proper use of equipment.* o *Use the proper size of equipment for the job.* o *Use equipment with new technologies (repowered engines, electric drive trains).* • *Perform on-site material hauling with trucks equipped with on-road engines (if determined to be less emissive than the off-road engines).* • *Use alternative fuels for generators at construction sites such as propane or solar, or use electrical power, as feasible.* • *Use an ARB approved low carbon fuel for construction equipment. (NOx emissions from the use of low carbon fuel must be reviewed and increases mitigated.), as applicable.* • *Encourage and provide carpools, shuttle vans, transit passes and/or secure bicycle parking for construction worker commutes.* • *Reduce electricity use in the construction office by using compact fluorescent bulbs, powering off computers every day, and replacing heating and cooling units with more efficient ones.*	City of Rancho Cordova Planning Department	During all construction activities	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	• *Recycle or salvage non-hazardous construction and demolition debris (goal of at least 75% by weight).* • *Use locally sourced or recycled materials for construction materials (goal of at least 20% based on costs for building materials, and based on volume for roadway, parking lot, sidewalk and curb materials). Wood products utilized should be certified through a sustainable forestry program.* • *Minimize the amount of concrete for paved surfaces or utilize a low carbon concrete option.* • *Produce concrete on-site if determined to be less emissive than transporting ready mix.* • *Use SmartWay certified trucks for deliveries and equipment transport.* • *Develop a plan to efficiently use water for adequate dust control.* ***Mitigation Measure 3.6-2:*** *The Project applicant shall implement the following Basic Construction Emissions Control Practices (BCECP) BMPs for reducing emissions from construction projects, as feasible. The City of Rancho Cordova shall be responsible for monitoring implementation of these measures:* • *Control of fugitive dust is required by District Rule 403 and enforced by District staff.* • *Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.* • *Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.* • *Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.* • *Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).* • *All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil*	City of Rancho Cordova Planning Department	During all construction activities	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	binders are used. • *Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.* • *For diesel-powered fleets working at the construction site:* o *Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site.* o *Provide current certificate(s) of compliance for CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation [California Code of Regulations, Title 13, sections 2449 and 2449.1]. For more information contact CARB at 877-593-6677, doors@arb.ca.gov, or www.arb.ca.gov/doors/compliance_cert1.html*			
Impact 3.6-2: The Project has the potential to generate operation-related GHGs, either directly or indirectly, that may have a significant effect on the environment	***Mitigation Measure 3.6-3:*** *The Project shall comply with the GHG Reduction Plan for The Ranch throughout all phases of Project construction and operation.* ***<u>The Ranch GHG Reduction Plan</u>*** *The Project shall implement all measures shown in the table below that are identified as "Mitigation Measure" in order to reduce the Project's net operational emissions, including amortized construction emissions, to an emissions level that meets the SMAQMD threshold for GHG emissions. It is noted that incorporation of the three SMAQMD-Recommended CalEEMod Measures to Reduce GHGs that are identified specifically as "Mitigation Measures" in the below table, would reduce the Project's net operational emissions, including amortized construction emissions, to approximately 1,099.9 MT CO_2e, as shown below. It is noted that the CalEEMOD measures incorporated into the Project design are also included in the GHG Reduction Plan to ensure that these measures are carried forward and reflected in all phases of the Project.* ***MT CO2e***	City of Rancho Cordova Planning Department	Throughout all phases of Project construction and operation	

ENVIRONMENTAL IMPACT	MITIGATION MEASURE		MONITORING RESPONSIBILITY	TIMING	VERIFICATION (DATE/INITIALS)
	Unmitigated Operational and Amortized Construction GHG Emissions (Reflects all CalEEMOD Measures that are incorporated into Project design (Table 3.6-5)	*6,205.9*			
	Mitigated Operational and Amortized Construction GHG Emissions (reflects CalEEMOD Measures TRT-1, TRT-2, BE-1, WUW-2) (Table 3.6-6)	*6,121.2*			
	Reduction Associated with CalEEMOD Mitigation Measures (5,720.1-5,635.4)	*<84.7>*			
	GHG Emission Reductions Estimated to be Required by Carbon Offsets to Reduce Project GHG Emissions to below 1,100 MT CO_2e (Reduction)	*<5,021.3>*			
	Total with Supplemental CalEEMOD Measures TRT-1, TRT-2, BE-1, and WUW-2	***1,099.9***			

GHG REDUCTION PLAN

GHG REDUCTION MEASURE	*APPLICABILITY*	*IMPLEMENTATION*
SMAQMD-RECOMMENDED CALEEMOD MEASURE TO REDUCE GHGS[1,2]		
LUT-9 Improve Walkability Design: Walkable street network	Incorporated into Project Description. Project is designed with a walkable street pattern, with a ratio of 144.9 intersections per square mile, multiple bicycle/pedestrian connections, an off-street trail system, and bicycle lanes to encourage walkability.	Included in Project design as described in the Project Description and based on intersections identified on TSM and in the TSM and site plan figures shown in the SPA Handbook. No additional implementation required.
SDT-1 Improve Pedestrian Network: On-site pedestrian access network links all of project internally and externally	Incorporated into Project Description. Project is designed with a walkable street pattern, with a ratio of 144.9 intersections per square mile, multiple bicycle/pedestrian connections, an off-street	Included in Project design as described in the Project Description based on pedestrian amenities shown on the TSM as well as those identified in the SPA Handbook. No additional

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*			*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
		trail system, and bicycle lanes to encourage walkability.	implementation required.			
	SDT-2 Provide Traffic Calming Measures: Projects streets and intersections feature traffic calming features	Incorporated into Project Description. Project has been designed to include a range of traffic-calming street design features, such as narrower streets, limited single-loaded streets, parking on both sides of the street, posted speed limit signs, planter strips with street trees, bulb-outs, and horizontal shifts (lane centerline that curves or shifts), and intersection traffic calming features, including pedestrian push-buttons at three intersections, marked crosswalks, count-down signal timers where appropriate, curb extensions, channelization islands, median islands, and tight corner radii.	Included in Project design as described in the Project Description and based on the features of the TSM and identified in the SPA Handbook. No additional implementation required.			
	SDT-3 Implement a Neighborhood Electric Vehicle (NEV) Network: Project provides a viable NEV network	Incorporated into Project Design. While the Project does not include a traditional NEV, the Project would support electric vehicle use through installing EV charging stations throughout the Project site, such that at least 50% of single family residences and 5% of	Included in Project design as described in the Project Description and in the SPA Handbook. No additional implementation required.			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*			*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
		parking spaces within the commercial, park and recreation, and multi-family land uses will have EV charging stations to reduce reliance on gasoline-fueled vehicles.				
	TRT-1&2 Implement Trip Reduction Program: Transportation Management Association (TMA) membership or other comprehensive services	Mitigation Measure. Mitigation Measure 3.6-3 requires the Project to join a Transportation Management Association (all employees located within the Project site to be eligible to participate).	Prior to issuance of occupancy permits for each construction phase of the Project, the Project applicant shall demonstrate that the residential, commercial, and parks and recreation uses associated with each phase have a permanent commitment, demonstrated through CC&Rs or comparable permanent mechanisms, to participate in a Transportation Management Association and ensures payment of annual fees for on-going participation. The Transportation Management Association shall grant all employees located within the Project site eligibility to participate.			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*			*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	BE-1 Exceed Title 24 California Code of Regulations, known as the California Building Standards Code (Title 24): Use less energy than allowed by Title 24	Mitigation Measure. Mitigation Measure 3.6-3 requires the Project to exceed the 2016 Title 24 requirements by 2 percent.	Prior to issuance of building permits for each construction phase of the Project, including all residential, commercial, and parks and recreation uses, the Project applicant shall demonstrate that the phase exceeds the 2016 Title 24 requirements for energy use and efficiency by a minimum of 2 percent. The documentation shall identify specific Project components, such as building materials and design, lighting improvements beyond the minimum required by LE-1, etc. and the associated reduction with each component.			
	LE-1 Install High Efficiency Lighting: Make use of high-efficient outdoor and public lighting	Incorporated into Project Design. The Project proposes to install energy-efficient (i.e., LED or better) lighting for all outdoor lighting.	Included in Project design as described in the Project Description and SPA Handbook. No additional implementation required.			
	BE-4 Energy Efficient Appliances: Use appliances more energy efficient than standard models	Incorporated into Project Design. The Project proposes to install energy-efficient appliances.	Included in Project design as described in the Project Description and SPA Handbook. No additional implementation required.			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*			*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	AE-1 On-site Renewable Energy: Establish on-site renewable energy. (No Ozone Precursor reductions if NO_X intensity is higher than electric utility.)	Incorporated into Project Design. The Project would generate a minimum of 95% of electricity via renewable energy via either on-site energy generation and/or through a contract with SMUD.	Included in Project design as described in the Project Description and SPA Handbook. No additional implementation required.			
	WUW-2 Apply Water Conservation Strategy: Reduce indoor and outdoor water use	Incorporated into Project Design. The Project landscaping would be drought-tolerant, sufficient to reduce outdoor water reduction by 25% from non-drought tolerant landscaping. The Project would also minimize the use of turf for residential uses to 70% less than the maximum allowed turf area to reduce water use.	Included in Project design as described in the Project Description and described in the SPA Handbook. No additional implementation required.			
	WUW-1 Install Low-Flow Bathroom Faucet, Install Low-Flow Kitchen Faucet, Install Low-flow Toilet, Install Low-flow Shower	Incorporated into Project Design. The Project proposes to install energy-efficient appliances.	Included in Project design as described in the Project Description and identified in the SPA Handbook. No additional implementation required.			
	WUW-5 Reduce Turf in Landscapes and Lawns: Use less turf than normal projects	Incorporated into Project Design. Minimize turf for residential uses to 70% less than the maximum allowed turf area to reduce water	Included in Project design as described in the Project Description and identified in the SPA Handbook. No additional			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*			*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
		use.	implementation required.			
	WUW-4 Use Water-Efficient Irrigation Systems: Install a smart irrigation control system	Incorporated into Project Design. Use water-efficient irrigation systems (automatic rain shut-off, maximum gallon per minute restriction, WiFi connectivity) to reduce water waste.	Included in Project design as described in the Project Description. No additional implementation required.			
	WUW-3 Water Efficient Landscape: Plant native or drought-resistant trees and Vegetation	Mitigation Measure. Mitigation Measure 3.6-3 requires the Project to incorporate a minimum of 50 percent of native or drought-resistant trees and vegetation into the proposed landscaping, including landscaping lots, landscaping associated with parks and recreation facilities, and landscaping associated with residential uses. Project applicant shall demonstrate at least a 25% reduction in outdoor water use from implementation of this measure.	Prior to approval of improvement plans for each phase of construction, the Project applicant shall submit landscaping plans that demonstrate a minimum of 50 percent of of native or drought-resistant trees and vegetation are included in the non-turf component of proposed landscaping, including landscaping lots, parks and recreation lots and facilities, and residential uses.			
	ADDITIONAL MEASURES (NOT MODELED IN CALEEMOD)					
	Purchase Offsets.	Mitigation Measure. This Mitigation Measure 3.6-3 requires the Project applicant to purchase carbon offsets to reduce net project operational and amortized construction emissions to less than SMAQMD's	Prior to issuance of the project's first building permit, the project applicant shall develop a SMAQMD-approved commitment to purchase carbon offsets sufficient to reduce project			

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	adopted threshold for GHG emissions. operational emissions and amortized construction emissions to less than SMAQMD's adopted threshold for GHG emissions that is in place at the time of the offset purchase. The purchase of carbon offsets may be prorated so that the offsets are paid concurrent with the approval of each project phase (small lot subdivision maps, multifamily parcel, etc.). [1] *SMAQMD LAND USE EMISSIONS REDUCTIONS VERSION 4 (FOR OPERATIONAL EMISSIONS), SMAQMD, 2017.* [2] *MEASURES LUT-1, LUT-5, LUT-6, PDT-1, PDT-2, TST-1, TST-3, TST-4, WSW-1, WSW-2, AND SW-1 ARE NOT APPLICABLE AS DESCRIBED IN THE DRAFT EIR.*			
HAZARDS AND HAZARDOUS MATERIALS				
Impact 3.7-1: Project implementation has the potential to create a significant hazard through the routine transport, use, or disposal of hazardous materials or through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment	***Mitigation Measure 3.7-1****: Prior to commencement of grading, the applicant shall submit Construction Site Management Plan for review and approval by the City. The Construction Site Management Plan shall establish management practices for handling hazardous materials, including fuels, paints, cleaners, solvents, etc., during construction to reduce the potential for spills and to direct the safe handling of these materials if encountered. The City shall approve the Construction Site Management Plan prior to any earth moving.*	City of Rancho Cordova Building and Safety Division	Prior to commence-ment of grading	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
HYDROLOGY AND WATER QUALITY				
Impact 3.8-1: The Project may violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality during construction	***Mitigation Measure 3.5-1****: Prior to any site disturbance, the Project proponent shall submit a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) to the RWQCB in accordance with the NPDES General Construction Permit requirements. The SWPPP shall be designed to control pollutant discharges utilizing Best Management Practices (BMPs) and technology to reduce erosion and sediments. BMPs may consist of a wide variety of measures taken to reduce pollutants in stormwater runoff from the Project site. Measures shall include temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) that will be employed to control erosion from disturbed areas. Final selection of BMPs will be subject to approval by the City of Rancho Cordova and the RWQCB. The SWPPP will be kept on site during construction activity and will be made available upon request to representatives of the RWQCB. (Note: This measure is also included in Section 3.5.)* ***Mitigation Measure 3.8-1:*** *Prior to the commencement of construction activities, the Project proponent shall submit, and obtain approval of, a Spill Prevention Countermeasure and Control Plan (SPCC) to the Sacramento County Environmental Management Department. The SPCC shall specify measures and procedures to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during all construction activities, and shall meet the requirements specified in the Code of Federal Regulations, title 40, part 112.*	City of Rancho Cordova Planning Department Regional Water Quality Control Board City of Rancho Cordova Planning Department Sacramento County Environmental Management Department	Prior to any site disturbance Prior to the commence-ment of construction activities	
Impact 3.8-2: The Project may violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality during post-construction	***Mitigation Measure 3.8-2:*** *Before approval of the final subdivision map for all Project phases, a detailed Best Management Practice (BMP) and water quality maintenance plan shall be prepared by a qualified engineer retained by the Project applicants that meets the standards of the City's NPDES Permit (No. CAS00853254) and shall document that stormwater runoff from the Project site is treated per the standards in the Stormwater Quality Design Manual for Sacramento and South Placer Regions. Drafts of the plan shall be submitted to the City of Rancho Cordova for review and approval*	City of Rancho Cordova Planning Department	Before approval of the final subdivision map for all Project phases	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	concurrently with development of tentative subdivision maps for all Project phases. The plan shall finalize the water quality improvements and further detail the structural and nonstructural BMPs proposed for the Project. The plan shall include the elements described below. • *A quantitative hydrologic and water quality analysis of proposed conditions incorporating the proposed drainage design features.* • *Pre-development and post-development calculations demonstrating that the proposed water quality BMPs meet or exceed requirements established by the City of Rancho Cordova and including details regarding the size, geometry, and functional timing of storage and release pursuant to the "Stormwater Quality Design Manual for Sacramento and South Placer Regions".* • *Source control programs to control water quality pollutants on the Project site, which may include but are limited to recycling, street sweeping, storm drain cleaning, household hazardous waste collection, waste minimization, prevention of spills and illegal dumping, and effective management of public trash collection areas.* • *A pond management component for the proposed basins that shall include management and maintenance requirements for the design features and BMPs, and responsible parties for maintenance and funding.* • *Low Impact Development (LID) and Hydromodification control measures shall be integrated into the BMP and water quality maintenance plan. These may include, but are not limited to:* o *Bioretention planters;* o *surface swales;* o *replacement of conventional impervious surfaces with pervious surfaces (e.g., porous pavement, green roofs);* o *impervious surfaces disconnection; and* o *trees planted to intercept stormwater.*			
LAND USE				
Impact 3.9-1: Implementation of the Project would not conflict	***Mitigation Measure 3.9-1:*** *The proposed open space areas located under the SMUD transmission line that traverses the site shall be designed and*	City of Rancho Cordova	During review of Project	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project adopted to avoid or mitigate an environmental effect	*maintained in accordance with SMUD's Guide for Transmission Encroachment. According to the Guide, certain improvements, for safety and liability reasons, are typically not allowed within transmission corridors. These include, but not limited to the following:* • *Buildings or structures;* • *Covered parking;* • *Excavation, elevation or grade changes;* • *Light Standards over 15' tall;* • *Parallel Utilities;* • *Playground Equipment;* • *Stockpiling of materials;* • *Storage of combustibles;* • *Swimming pools, spas, gazebos, etc.;* • *Tall tree species (over 15' at maturity);* • *Trash enclosures; and* • *Water Detention and/or Retention Basins.* *The proposed open space areas located under the PG&E transmission line that traverses the site shall be designed and maintained in accordance with the PG&E Electric and Gas Service Requirements.* *Future improvement plans that include the transmission lines shall be consistent with the items outlined in Chapter 5, Trails and Parks, of the Guide, as well as other applicable Chapters. This requirement shall be noted on the Project improvement plans, subject to review and approval by the City of Rancho Cordova.*	Planning Department	Improvement Plans for the proposed open space areas located under the on-site SMUD transmission line	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
TRANSPORTATION AND CIRCULATION				
Impact 3.13-1: Under Existing (2017) Plus Project conditions, Project may conflict with an applicable program, plan, ordinance or policy addressing the circulation system – Roadway Segments and Intersections	***Mitigation Measure 3.13-1:*** *Intersection #3, Jackson Road at Eagles Nest Road: The Project applicant shall be responsible for funding the Project's fair share (1.69 percent) of the construction costs, calculated to the satisfaction of the City, in consultation with Sacramento County Department of Transportation, of the following improvement:* • *The intersection shall be converted from side street stop controlled to signalized. The estimated cost of this improvement is $527,880; the Project's fair-share would be $7,020 (Kimley Horn, 2019).*	City of Rancho Cordova Planning Department	Prior to approval of Project Improvement Plans	
	Mitigation Measure 3.13-2: *Intersection #9, Grant Line Road at Sunrise Boulevard: The Project applicant shall be responsible for funding the Project's fair share (2.46 percent) of the construction costs, calculated to the satisfaction of the City, in consultation with Sacramento County Department of Transportation, of the following improvement:* • *The southbound approach shall be changed to include a right turn lane and an all-purpose lane. This would require restriping the southbound approach to move the bicycle lane from its existing location between the two travel lanes to the right shoulder and add striping for the right turns from the inside lane, consistent with the Optional Through Right and Right-Turn-Only lane configuration included in Figure 9C-4a (CA) of the CaMUTCD[1]. The estimated cost of this improvement is $25,000; the Project's fair-share would be $620 (Kimley Horn, 2019).*	City of Rancho Cordova Planning Department	Prior to approval of Project Improvement Plans	
	Mitigation Measure 3.13-3: *Intersection #11, Douglas Road at Sunrise Boulevard: Signal timing optimization and a right-turn overlap signal phase shall be added for the eastbound right-turn, overlapping with the northbound left-turn movement shall be completed prior to construction of the 763rd dwelling unit equivalent (DUE). A single-family residential (non-age-restricted) unit is calculated as 1.0 DUE, a multifamily residential unit is calculated as 0.616 DUE, and an active adult residential unit is calculated as 0.37 DUE.*	City of Rancho Cordova Planning Department	Prior to approval of Project Improvement Plans	

[1] California MUTCD 2014 Edition. Chapter 9C-Markings: Part 9 Traffic Control for Bicycle Facilities. November 2014

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	Mitigation Measure 3.13-4: *Intersection #21, Sunrise Boulevard at White Rock Road: Signal timing optimization shall be completed at this intersection prior to construction of the 1,162nd DUE. A single-family residential (non-age-restricted) unit is calculated as 1.0 DUE, a multifamily residential unit is calculated as 0.616 DUE, and an active adult residential unit is calculated as 0.37 DUE.* ***Mitigation Measure 3.13-5:*** *Intersection #25, Sunrise Boulevard at Zinfandel Drive: The eastbound and westbound approaches shall be restriped to include a left turn lane and through-right lane. It is noted that this improvement, or components thereof, are also required of the Suncreek Specific Plan project (see SunCreek Specific Plan Project DEIR/DEIS Mitigation Measure 3.15-1k, p. 3.15-43) and the Rio del Oro Specific Plan Project (see Rio del Oro Specific Plan Project DEIR/DEIS Mitigation Measure 3.14-1o, p. 3.14-61) and the Project may participate in the funding of the improvement, if constructed by other projects. Project participation in, or completion of, if not constructed by others, the improvement shall occur prior to construction of the 541st DUE. A single-family residential (non-age-restricted) unit is calculated as 1.0 DUE, a multifamily residential unit is calculated as 0.616 DUE, and an active adult residential unit is calculated as 0.37 DUE. Project participation may include Project construction of the improvement subject to reimbursement of the fair-share of any other projects conditioned or otherwise required to construct or fund the improvement or Project payment of the Project's fair-share of the improvement if constructed by others.*	City of Rancho Cordova Planning Department City of Rancho Cordova Planning Department	Prior to approval of Project Improvement Plans Prior to approval of Project Improvement Plans	
Impact 3.13-2: Under Cumulative (2040) Plus Project conditions, Project may conflict with an applicable program, plan, ordinance or policy addressing the circulation system – Roadway Segments and Intersections	***Mitigation Measure 3.13-6:*** *Intersection #10, Douglas Road at Zinfandel Drive: The Project shall pay its fair-share for the westbound right turn to be converted from permitted to a free right turn with a receiving lane. The Project's fair share of the improvement is 10.61 percent.* ***Mitigation Measure 3.13-7:*** *Intersection #27, White Rock Road at Prairie City Road: A second southbound right-turn lane shall be added at this intersection, and a right-turn overlap signal phase shall be added for the southbound right-turn. The Project's fair share of the improvement is 4.77 percent.*	City of Rancho Cordova Planning Department City of Rancho Cordova Planning Department	Prior to approval of Project Improvement Plans Prior to approval of Project Improvement Plans	

ENVIRONMENTAL IMPACT	*MITIGATION MEASURE*	*MONITORING RESPONSIBILITY*	*TIMING*	*VERIFICATION (DATE/INITIALS)*
	Mitigation Measure 3.13-8: *Roadway Segment #9, Douglas Road between Mather Boulevard and Sunrise Boulevard: The Project shall pay its fair-share for the widening of Douglas Boulevard to six lanes. The Project's fair share of the improvement is 10.05 percent.*	City of Rancho Cordova Planning Department	Prior to approval of Project Improvement Plans	
	Mitigation Measure 3.13-9: *Rancho Cordova Parkway shall be widened from two to four lanes along the project extents. The improvement shall be reflected on the Project's improvement plans. The improvement shall be completed before the 570th market rate single family detached unit and the 566th age-restricted senior unit (or the number of units generating an equivalent amount of trips) is constructed.*	City of Rancho Cordova Planning Department	Prior to approval of Project Improvement Plans	

Revised Draft EIR Appendix B.1.

CalEEMOD Outputs

The Ranch - City of Rancho Cordova (Construction Only - Phase 1)

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.54	Acre	1.54	67,082.40	0
City Park	1.40	Acre	1.40	60,984.00	0
Retirement Community	211.00	Dwelling Unit	42.20	211,000.00	439
Single Family Housing	270.00	Dwelling Unit	28.61	486,000.00	766

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Estimated construction state date of January 2020 (provided by Applicant).

Land Use - This model run provides construction emissions only.

Construction Phase - Phase 1

Off-road Equipment -

Off-road Equipment - For building construction, assumes 1 crane, 2 forklifts, 1 generator set, 1 tractor/loader/backhoe, and 1 welder (as provided by the applicant)

Off-road Equipment -

Off-road Equipment - D
Off-road Equipment -

Off-road Equipment -

Trips and VMT - -

Grading - 173.6 acres graded (as provided by project applicant). Assume 1/2 of site is exported during this this phase (152,708 CY / 2 = 76,354 CY). Total net export for entire project (152,708 CY) as provided by applicant.

Architectural Coating - 75 g/L for architectural coatings as provided by SMAQMD (average as provided by the air district).

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust -

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 28.33% - reflects project person/du value (2.523) vs. statewide avg. (2.97) and latest statewide data (ARB). Parking Degreaser EF red. by 57.5% (corrects for walking paths modeled as 'parking lot').

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%. NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Fleet Mix -

The Ranch - City of Rancho Cordova (Construction Only - Phase 1) - Sacramento County, Annual

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	75.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	40.00	64.00
tblConstructionPhase	NumDays	110.00	153.00
tblConstructionPhase	NumDays	75.00	65.00
tblConstructionPhase	NumDays	1,110.00	586.00
tblConstructionPhase	NumDays	75.00	587.00
tblGrading	AcresOfGrading	382.50	173.60
tblGrading	MaterialExported	0.00	76,354.00
tblLandUse	LotAcreage	87.66	28.61
tblLandUse	Population	563.00	439.00
tblLandUse	Population	721.00	766.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblTripsAndVMT	VendorTripNumber	72.00	0.00
tblTripsAndVMT	VendorTripNumber	72.00	0.00
tblTripsAndVMT	WorkerTripNumber	303.00	0.00
tblTripsAndVMT	WorkerTripNumber	303.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.5465	6.8842	3.8328	0.0104	1.2372	0.2582	1.4954	0.6090	0.2377	0.8468	0.0000	948.8146	948.8146	0.2053	0.0000	953.9478
2021	1.3601	2.8000	2.9827	7.9200e-003	0.8908	0.1015	0.9923	0.2272	0.0964	0.3236	0.0000	713.7160	713.7160	0.0701	0.0000	715.4695
2022	1.8362	2.7002	3.0404	8.4200e-003	0.9796	0.0909	1.0705	0.2500	0.0868	0.3367	0.0000	759.2926	759.2926	0.0678	0.0000	760.9874
2023	0.9804	0.8472	1.0654	2.9600e-003	0.3388	0.0284	0.3672	0.0866	0.0272	0.1139	0.0000	266.4363	266.4363	0.0223	0.0000	266.9942
Maximum	**1.8362**	**6.8842**	**3.8328**	**0.0104**	**1.2372**	**0.2582**	**1.4954**	**0.6090**	**0.2377**	**0.8468**	**0.0000**	**948.8146**	**948.8146**	**0.2053**	**0.0000**	**953.9478**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.5465	6.8842	3.8328	0.0104	0.6040	0.2582	0.8622	0.2872	0.2377	0.5249	0.0000	948.8140	948.8140	0.2053	0.0000	953.9471
2021	1.3601	2.8000	2.9827	7.9200e-003	0.8158	0.1015	0.9172	0.2087	0.0964	0.3052	0.0000	713.7157	713.7157	0.0701	0.0000	715.4692
2022	1.8362	2.7002	3.0404	8.4200e-003	0.8971	0.0909	0.9880	0.2297	0.0868	0.3165	0.0000	759.2923	759.2923	0.0678	0.0000	760.9871
2023	0.9804	0.8472	1.0654	2.9600e-003	0.3104	0.0284	0.3388	0.0796	0.0272	0.1069	0.0000	266.4362	266.4362	0.0223	0.0000	266.9941
Maximum	**1.8362**	**6.8842**	**3.8328**	**0.0104**	**0.8971**	**0.2582**	**0.9880**	**0.2872**	**0.2377**	**0.5249**	**0.0000**	**948.8140**	**948.8140**	**0.2053**	**0.0000**	**953.9471**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**23.77**	**0.00**	**20.87**	**31.34**	**0.00**	**22.67**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2020**	**3-31-2020**	1.4984	1.4984
2	**4-1-2020**	**6-30-2020**	2.3582	2.3582
3	**7-1-2020**	**9-30-2020**	2.3842	2.3842
4	**10-1-2020**	**12-31-2020**	1.1234	1.1234
5	**1-1-2021**	**3-31-2021**	0.6504	0.6504
6	**4-1-2021**	**6-30-2021**	1.0599	1.0599
7	**7-1-2021**	**9-30-2021**	1.2161	1.2161
8	**10-1-2021**	**12-31-2021**	1.2224	1.2224

9	**1-1-2022**	**3-31-2022**	1.1267	1.1267
10	**4-1-2022**	**6-30-2022**	1.1339	1.1339
11	**7-1-2022**	**9-30-2022**	1.1463	1.1463
12	**10-1-2022**	**12-31-2022**	1.1518	1.1518
13	**1-1-2023**	**3-31-2023**	1.0495	1.0495
14	**4-1-2023**	**6-30-2023**	0.6396	0.6396
15	**7-1-2023**	**9-30-2023**	0.1490	0.1490
		Highest	2.3842	2.3842

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.3378	0.0570	4.9430	2.6000e-004		0.0275	0.0275		0.0275	0.0275	0.0000	8.1028	8.1028	7.7100e-003	0.0000	8.2956
Energy	0.0514	0.4390	0.1868	2.8000e-003		0.0355	0.0355		0.0355	0.0355	0.0000	1,383.5950	1,383.5950	0.0527	0.0182	1,390.3420
Mobile	0.4501	2.3364	5.2563	0.0248	2.9101	0.0127	2.9227	0.7792	0.0118	0.7909	0.0000	2,293.7530	2,293.7530	0.0836	0.0000	2,295.8432
Waste						0.0000	0.0000		0.0000	0.0000	75.7298	0.0000	75.7298	4.4755	0.0000	187.6175
Water						0.0000	0.0000		0.0000	0.0000	11.0878	63.6093	74.6971	0.0413	0.0248	83.1075
Total	**3.8393**	**2.8324**	**10.3861**	**0.0278**	**2.9101**	**0.0757**	**2.9857**	**0.7792**	**0.0748**	**0.8539**	**86.8177**	**3,749.0601**	**3,835.8777**	**4.6609**	**0.0430**	**3,965.2058**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.3378	0.0570	4.9430	2.6000e-004		0.0275	0.0275		0.0275	0.0275	0.0000	8.1028	8.1028	7.7100e-003	0.0000	8.2956
Energy	0.0514	0.4390	0.1868	2.8000e-003		0.0355	0.0355		0.0355	0.0355	0.0000	1,383.5950	1,383.5950	0.0527	0.0182	1,390.3420
Mobile	0.4501	2.3364	5.2563	0.0248	2.9101	0.0127	2.9227	0.7792	0.0118	0.7909	0.0000	2,293.7530	2,293.7530	0.0836	0.0000	2,295.8432
Waste						0.0000	0.0000		0.0000	0.0000	75.7298	0.0000	75.7298	4.4755	0.0000	187.6175
Water						0.0000	0.0000		0.0000	0.0000	11.0878	63.6093	74.6971	0.0413	0.0248	83.1075
Total	**3.8393**	**2.8324**	**10.3861**	**0.0278**	**2.9101**	**0.0757**	**2.9857**	**0.7792**	**0.0748**	**0.8539**	**86.8177**	**3,749.0601**	**3,835.8777**	**4.6609**	**0.0430**	**3,965.2058**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	1,585.9200
Vegetation Land Change	-1,057.2430
Total	**528.6770**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2020	3/30/2020	5	64	
2	Grading	Grading	4/1/2020	10/30/2020	5	153	
3	Paving	Paving	11/1/2020	1/29/2021	5	65	
4	Building Construction	Building Construction	2/1/2021	5/1/2023	5	586	
5	Architectural Coating	Architectural Coating	5/1/2021	8/1/2023	5	587	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 173.6

Acres of Paving: 0

Residential Indoor: 1,411,425; Residential Outdoor: 470,475; Non-Residential Indoor: 10,500; Non-Residential Outdoor: 3,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	2	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	9,544.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	303.00	72.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	61.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5781	0.0000	0.5781	0.3178	0.0000	0.3178	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1305	1.3574	0.6884	1.2200e-003		0.0703	0.0703		0.0647	0.0647	0.0000	106.9782	106.9782	0.0346	0.0000	107.8432
Total	**0.1305**	**1.3574**	**0.6884**	**1.2200e-003**	**0.5781**	**0.0703**	**0.6484**	**0.3178**	**0.0647**	**0.3825**	**0.0000**	**106.9782**	**106.9782**	**0.0346**	**0.0000**	**107.8432**

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1400e-003	1.4500e-003	0.0159	4.0000e-005	4.2300e-003	3.0000e-005	4.2600e-003	1.1300e-003	3.0000e-005	1.1500e-003	0.0000	3.7482	3.7482	1.1000e-004	0.0000	3.7509
Total	**2.1400e-003**	**1.4500e-003**	**0.0159**	**4.0000e-005**	**4.2300e-003**	**3.0000e-005**	**4.2600e-003**	**1.1300e-003**	**3.0000e-005**	**1.1500e-003**	**0.0000**	**3.7482**	**3.7482**	**1.1000e-004**	**0.0000**	**3.7509**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2602	0.0000	0.2602	0.1430	0.0000	0.1430	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1305	1.3574	0.6884	1.2200e-003		0.0703	0.0703		0.0647	0.0647	0.0000	106.9781	106.9781	0.0346	0.0000	107.8430
Total	**0.1305**	**1.3574**	**0.6884**	**1.2200e-003**	**0.2602**	**0.0703**	**0.3305**	**0.1430**	**0.0647**	**0.2077**	**0.0000**	**106.9781**	**106.9781**	**0.0346**	**0.0000**	**107.8430**

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1400e-003	1.4500e-003	0.0159	4.0000e-005	3.9000e-003	3.0000e-005	3.9300e-003	1.0400e-003	3.0000e-005	1.0700e-003	0.0000	3.7482	3.7482	1.1000e-004	0.0000	3.7509
Total	**2.1400e-003**	**1.4500e-003**	**0.0159**	**4.0000e-005**	**3.9000e-003**	**3.0000e-005**	**3.9300e-003**	**1.0400e-003**	**3.0000e-005**	**1.0700e-003**	**0.0000**	**3.7482**	**3.7482**	**1.1000e-004**	**0.0000**	**3.7509**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5606	0.0000	0.5606	0.2644	0.0000	0.2644	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3404	3.8401	2.4448	4.7400e-003		0.1663	0.1663		0.1530	0.1530	0.0000	416.8048	416.8048	0.1348	0.0000	420.1749
Total	**0.3404**	**3.8401**	**2.4448**	**4.7400e-003**	**0.5606**	**0.1663**	**0.7269**	**0.2644**	**0.1530**	**0.4174**	**0.0000**	**416.8048**	**416.8048**	**0.1348**	**0.0000**	**420.1749**

3.3 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0367	1.3711	0.3098	3.7600e-003	0.0805	4.9100e-003	0.0854	0.0221	4.6900e-003	0.0268	0.0000	365.1176	365.1176	0.0212	0.0000	365.6482
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-003	3.8600e-003	0.0424	1.1000e-004	0.0112	8.0000e-005	0.0113	2.9900e-003	7.0000e-005	3.0600e-003	0.0000	9.9563	9.9563	2.8000e-004	0.0000	9.9633
Total	**0.0424**	**1.3750**	**0.3522**	**3.8700e-003**	**0.0918**	**4.9900e-003**	**0.0967**	**0.0251**	**4.7600e-003**	**0.0299**	**0.0000**	**375.0739**	**375.0739**	**0.0215**	**0.0000**	**375.6115**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2523	0.0000	0.2523	0.1190	0.0000	0.1190	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3404	3.8401	2.4448	4.7400e-003		0.1663	0.1663		0.1530	0.1530	0.0000	416.8044	416.8044	0.1348	0.0000	420.1744
Total	**0.3404**	**3.8401**	**2.4448**	**4.7400e-003**	**0.2523**	**0.1663**	**0.4186**	**0.1190**	**0.1530**	**0.2720**	**0.0000**	**416.8044**	**416.8044**	**0.1348**	**0.0000**	**420.1744**

3.3 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0367	1.3711	0.3098	3.7600e-003	0.0751	4.9100e-003	0.0800	0.0208	4.6900e-003	0.0255	0.0000	365.1176	365.1176	0.0212	0.0000	365.6482
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-003	3.8600e-003	0.0424	1.1000e-004	0.0104	8.0000e-005	0.0104	2.7700e-003	7.0000e-005	2.8500e-003	0.0000	9.9563	9.9563	2.8000e-004	0.0000	9.9633
Total	**0.0424**	**1.3750**	**0.3522**	**3.8700e-003**	**0.0854**	**4.9900e-003**	**0.0904**	**0.0235**	**4.7600e-003**	**0.0283**	**0.0000**	**375.0739**	**375.0739**	**0.0215**	**0.0000**	**375.6115**

3.4 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0298	0.3094	0.3224	5.0000e-004		0.0166	0.0166		0.0152	0.0152	0.0000	44.0621	44.0621	0.0143	0.0000	44.4184
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0298**	**0.3094**	**0.3224**	**5.0000e-004**		**0.0166**	**0.0166**		**0.0152**	**0.0152**	**0.0000**	**44.0621**	**44.0621**	**0.0143**	**0.0000**	**44.4184**

3.4 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2300e-003	8.3000e-004	9.1300e-003	2.0000e-005	2.4200e-003	2.0000e-005	2.4400e-003	6.4000e-004	2.0000e-005	6.6000e-004	0.0000	2.1474	2.1474	6.0000e-005	0.0000	2.1490
Total	**1.2300e-003**	**8.3000e-004**	**9.1300e-003**	**2.0000e-005**	**2.4200e-003**	**2.0000e-005**	**2.4400e-003**	**6.4000e-004**	**2.0000e-005**	**6.6000e-004**	**0.0000**	**2.1474**	**2.1474**	**6.0000e-005**	**0.0000**	**2.1490**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0298	0.3094	0.3224	5.0000e-004		0.0166	0.0166		0.0152	0.0152	0.0000	44.0620	44.0620	0.0143	0.0000	44.4183
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0298**	**0.3094**	**0.3224**	**5.0000e-004**		**0.0166**	**0.0166**		**0.0152**	**0.0152**	**0.0000**	**44.0620**	**44.0620**	**0.0143**	**0.0000**	**44.4183**

3.4 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2300e-003	8.3000e-004	9.1300e-003	2.0000e-005	2.2400e-003	2.0000e-005	2.2500e-003	6.0000e-004	2.0000e-005	6.1000e-004	0.0000	2.1474	2.1474	6.0000e-005	0.0000	2.1490
Total	**1.2300e-003**	**8.3000e-004**	**9.1300e-003**	**2.0000e-005**	**2.2400e-003**	**2.0000e-005**	**2.2500e-003**	**6.0000e-004**	**2.0000e-005**	**6.1000e-004**	**0.0000**	**2.1474**	**2.1474**	**6.0000e-005**	**0.0000**	**2.1490**

3.4 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0132	0.1357	0.1539	2.4000e-004		7.1200e-003	7.1200e-003		6.5500e-003	6.5500e-003	0.0000	21.0247	21.0247	6.8000e-003	0.0000	21.1947
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0132**	**0.1357**	**0.1539**	**2.4000e-004**		**7.1200e-003**	**7.1200e-003**		**6.5500e-003**	**6.5500e-003**	**0.0000**	**21.0247**	**21.0247**	**6.8000e-003**	**0.0000**	**21.1947**

3.4 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.5000e-004	3.6000e-004	3.9900e-003	1.0000e-005	1.1600e-003	1.0000e-005	1.1600e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9900	0.9900	3.0000e-005	0.0000	0.9907
Total	**5.5000e-004**	**3.6000e-004**	**3.9900e-003**	**1.0000e-005**	**1.1600e-003**	**1.0000e-005**	**1.1600e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9900**	**0.9900**	**3.0000e-005**	**0.0000**	**0.9907**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0132	0.1357	0.1539	2.4000e-004		7.1200e-003	7.1200e-003		6.5500e-003	6.5500e-003	0.0000	21.0246	21.0246	6.8000e-003	0.0000	21.1946
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0132**	**0.1357**	**0.1539**	**2.4000e-004**		**7.1200e-003**	**7.1200e-003**		**6.5500e-003**	**6.5500e-003**	**0.0000**	**21.0246**	**21.0246**	**6.8000e-003**	**0.0000**	**21.1946**

3.4 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.5000e-004	3.6000e-004	3.9900e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0700e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	0.9900	0.9900	3.0000e-005	0.0000	0.9907
Total	**5.5000e-004**	**3.6000e-004**	**3.9900e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0700e-003**	**2.9000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.9900**	**0.9900**	**3.0000e-005**	**0.0000**	**0.9907**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1733	1.5522	1.3742	2.3900e-003		0.0815	0.0815		0.0773	0.0773	0.0000	204.5257	204.5257	0.0433	0.0000	205.6084
Total	**0.1733**	**1.5522**	**1.3742**	**2.3900e-003**		**0.0815**	**0.0815**		**0.0773**	**0.0773**	**0.0000**	**204.5257**	**204.5257**	**0.0433**	**0.0000**	**205.6084**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0272	0.8838	0.2362	2.1100e-003	0.1218	2.4400e-003	0.1243	0.0321	2.3400e-003	0.0344	0.0000	202.7329	202.7329	0.0116	0.0000	203.0227
Worker	0.1259	0.0823	0.9203	2.5300e-003	0.7287	1.8700e-003	0.7305	0.1843	1.7200e-003	0.1861	0.0000	228.5513	228.5513	6.0000e-003	0.0000	228.7013
Total	**0.1531**	**0.9661**	**1.1565**	**4.6400e-003**	**0.8505**	**4.3100e-003**	**0.8548**	**0.2164**	**4.0600e-003**	**0.2205**	**0.0000**	**431.2843**	**431.2843**	**0.0176**	**0.0000**	**431.7240**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1733	1.5522	1.3742	2.3900e-003		0.0815	0.0815		0.0773	0.0773	0.0000	204.5254	204.5254	0.0433	0.0000	205.6081
Total	**0.1733**	**1.5522**	**1.3742**	**2.3900e-003**		**0.0815**	**0.0815**		**0.0773**	**0.0773**	**0.0000**	**204.5254**	**204.5254**	**0.0433**	**0.0000**	**205.6081**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0272	0.8838	0.2362	2.1100e-003	0.1122	2.4400e-003	0.1146	0.0297	2.3400e-003	0.0321	0.0000	202.7329	202.7329	0.0116	0.0000	203.0227
Worker	0.1259	0.0823	0.9203	2.5300e-003	0.6664	1.8700e-003	0.6682	0.1690	1.7200e-003	0.1708	0.0000	228.5513	228.5513	6.0000e-003	0.0000	228.7013
Total	**0.1531**	**0.9661**	**1.1565**	**4.6400e-003**	**0.7785**	**4.3100e-003**	**0.7828**	**0.1988**	**4.0600e-003**	**0.2028**	**0.0000**	**431.2843**	**431.2843**	**0.0176**	**0.0000**	**431.7240**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1696	1.5117	1.4681	2.5900e-003		0.0756	0.0756		0.0717	0.0717	0.0000	221.6139	221.6139	0.0464	0.0000	222.7743
Total	**0.1696**	**1.5117**	**1.4681**	**2.5900e-003**		**0.0756**	**0.0756**		**0.0717**	**0.0717**	**0.0000**	**221.6139**	**221.6139**	**0.0464**	**0.0000**	**222.7743**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0273	0.9091	0.2360	2.2600e-003	0.1320	2.3200e-003	0.1343	0.0348	2.2200e-003	0.0370	0.0000	217.6968	217.6968	0.0122	0.0000	218.0018
Worker	0.1275	0.0801	0.9161	2.6400e-003	0.7894	1.9700e-003	0.7914	0.1997	1.8100e-003	0.2015	0.0000	238.7287	238.7287	5.8400e-003	0.0000	238.8747
Total	**0.1548**	**0.9893**	**1.1521**	**4.9000e-003**	**0.9214**	**4.2900e-003**	**0.9256**	**0.2345**	**4.0300e-003**	**0.2385**	**0.0000**	**456.4255**	**456.4255**	**0.0180**	**0.0000**	**456.8765**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1696	1.5117	1.4681	2.5900e-003		0.0756	0.0756		0.0717	0.0717	0.0000	221.6136	221.6136	0.0464	0.0000	222.7740
Total	**0.1696**	**1.5117**	**1.4681**	**2.5900e-003**		**0.0756**	**0.0756**		**0.0717**	**0.0717**	**0.0000**	**221.6136**	**221.6136**	**0.0464**	**0.0000**	**222.7740**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0273	0.9091	0.2360	2.2600e-003	0.1215	2.3200e-003	0.1239	0.0322	2.2200e-003	0.0344	0.0000	217.6968	217.6968	0.0122	0.0000	218.0018
Worker	0.1275	0.0801	0.9161	2.6400e-003	0.7219	1.9700e-003	0.7238	0.1831	1.8100e-003	0.1849	0.0000	238.7287	238.7287	5.8400e-003	0.0000	238.8747
Total	**0.1548**	**0.9893**	**1.1521**	**4.9000e-003**	**0.8434**	**4.2900e-003**	**0.8477**	**0.2153**	**4.0300e-003**	**0.2194**	**0.0000**	**456.4255**	**456.4255**	**0.0180**	**0.0000**	**456.8765**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0518	0.4617	0.4814	8.6000e-004		0.0218	0.0218		0.0207	0.0207	0.0000	73.3142	73.3142	0.0152	0.0000	73.6938
Total	**0.0518**	**0.4617**	**0.4814**	**8.6000e-004**		**0.0218**	**0.0218**		**0.0207**	**0.0207**	**0.0000**	**73.3142**	**73.3142**	**0.0152**	**0.0000**	**73.6938**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.1400e-003	0.2542	0.0691	7.3000e-004	0.0437	3.7000e-004	0.0440	0.0115	3.5000e-004	0.0119	0.0000	70.6765	70.6765	3.6200e-003	0.0000	70.7670
Worker	0.0395	0.0239	0.2783	8.4000e-004	0.2611	6.4000e-004	0.2617	0.0661	5.9000e-004	0.0666	0.0000	75.9989	75.9989	1.7300e-003	0.0000	76.0422
Total	**0.0466**	**0.2780**	**0.3474**	**1.5700e-003**	**0.3048**	**1.0100e-003**	**0.3058**	**0.0776**	**9.4000e-004**	**0.0785**	**0.0000**	**146.6754**	**146.6754**	**5.3500e-003**	**0.0000**	**146.8091**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0518	0.4617	0.4814	8.6000e-004		0.0218	0.0218		0.0207	0.0207	0.0000	73.3141	73.3141	0.0152	0.0000	73.6938
Total	**0.0518**	**0.4617**	**0.4814**	**8.6000e-004**		**0.0218**	**0.0218**		**0.0207**	**0.0207**	**0.0000**	**73.3141**	**73.3141**	**0.0152**	**0.0000**	**73.6938**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.1400e-003	0.2542	0.0691	7.3000e-004	0.0402	3.7000e-004	0.0406	0.0107	3.5000e-004	0.0110	0.0000	70.6765	70.6765	3.6200e-003	0.0000	70.7670
Worker	0.0395	0.0239	0.2783	8.4000e-004	0.2388	6.4000e-004	0.2394	0.0606	5.9000e-004	0.0612	0.0000	75.9989	75.9989	1.7300e-003	0.0000	76.0422
Total	**0.0466**	**0.2780**	**0.3474**	**1.5700e-003**	**0.2790**	**1.0100e-003**	**0.2800**	**0.0712**	**9.4000e-004**	**0.0722**	**0.0000**	**146.6754**	**146.6754**	**5.3500e-003**	**0.0000**	**146.8091**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.9824					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0192	0.1336	0.1590	2.6000e-004		8.2300e-003	8.2300e-003		8.2300e-003	8.2300e-003	0.0000	22.3410	22.3410	1.5300e-003	0.0000	22.3793
Total	**1.0016**	**0.1336**	**0.1590**	**2.6000e-004**		**8.2300e-003**	**8.2300e-003**		**8.2300e-003**	**8.2300e-003**	**0.0000**	**22.3410**	**22.3410**	**1.5300e-003**	**0.0000**	**22.3793**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0185	0.0121	0.1351	3.7000e-004	0.0392	2.7000e-004	0.0395	0.0104	2.5000e-004	0.0107	0.0000	33.5504	33.5504	8.8000e-004	0.0000	33.5724
Total	**0.0185**	**0.0121**	**0.1351**	**3.7000e-004**	**0.0392**	**2.7000e-004**	**0.0395**	**0.0104**	**2.5000e-004**	**0.0107**	**0.0000**	**33.5504**	**33.5504**	**8.8000e-004**	**0.0000**	**33.5724**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.9824					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0192	0.1336	0.1590	2.6000e-004		8.2300e-003	8.2300e-003		8.2300e-003	8.2300e-003	0.0000	22.3409	22.3409	1.5300e-003	0.0000	22.3793
Total	**1.0016**	**0.1336**	**0.1590**	**2.6000e-004**		**8.2300e-003**	**8.2300e-003**		**8.2300e-003**	**8.2300e-003**	**0.0000**	**22.3409**	**22.3409**	**1.5300e-003**	**0.0000**	**22.3793**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0185	0.0121	0.1351	3.7000e-004	0.0362	2.7000e-004	0.0364	9.6800e-003	2.5000e-004	9.9300e-003	0.0000	33.5504	33.5504	8.8000e-004	0.0000	33.5724
Total	**0.0185**	**0.0121**	**0.1351**	**3.7000e-004**	**0.0362**	**2.7000e-004**	**0.0364**	**9.6800e-003**	**2.5000e-004**	**9.9300e-003**	**0.0000**	**33.5504**	**33.5504**	**8.8000e-004**	**0.0000**	**33.5724**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.4596					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.1831	0.2358	3.9000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	33.1923	33.1923	2.1600e-003	0.0000	33.2463
Total	**1.4862**	**0.1831**	**0.2358**	**3.9000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**33.1923**	**33.1923**	**2.1600e-003**	**0.0000**	**33.2463**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0257	0.0161	0.1844	5.3000e-004	0.0582	4.0000e-004	0.0586	0.0155	3.7000e-004	0.0159	0.0000	48.0609	48.0609	1.1800e-003	0.0000	48.0903
Total	**0.0257**	**0.0161**	**0.1844**	**5.3000e-004**	**0.0582**	**4.0000e-004**	**0.0586**	**0.0155**	**3.7000e-004**	**0.0159**	**0.0000**	**48.0609**	**48.0609**	**1.1800e-003**	**0.0000**	**48.0903**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.4596					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.1831	0.2358	3.9000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	33.1923	33.1923	2.1600e-003	0.0000	33.2463
Total	**1.4862**	**0.1831**	**0.2358**	**3.9000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**33.1923**	**33.1923**	**2.1600e-003**	**0.0000**	**33.2463**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0257	0.0161	0.1844	5.3000e-004	0.0537	4.0000e-004	0.0541	0.0144	3.7000e-004	0.0147	0.0000	48.0609	48.0609	1.1800e-003	0.0000	48.0903
Total	**0.0257**	**0.0161**	**0.1844**	**5.3000e-004**	**0.0537**	**4.0000e-004**	**0.0541**	**0.0144**	**3.7000e-004**	**0.0147**	**0.0000**	**48.0609**	**48.0609**	**1.1800e-003**	**0.0000**	**48.0903**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8533					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0146	0.0990	0.1376	2.3000e-004		5.3800e-003	5.3800e-003		5.3800e-003	5.3800e-003	0.0000	19.4047	19.4047	1.1600e-003	0.0000	19.4338
Total	**0.8679**	**0.0990**	**0.1376**	**2.3000e-004**		**5.3800e-003**	**5.3800e-003**		**5.3800e-003**	**5.3800e-003**	**0.0000**	**19.4047**	**19.4047**	**1.1600e-003**	**0.0000**	**19.4338**

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0140	8.4900e-003	0.0990	3.0000e-004	0.0341	2.3000e-004	0.0343	9.0600e-003	2.1000e-004	9.2600e-003	0.0000	27.0421	27.0421	6.2000e-004	0.0000	27.0575
Total	**0.0140**	**8.4900e-003**	**0.0990**	**3.0000e-004**	**0.0341**	**2.3000e-004**	**0.0343**	**9.0600e-003**	**2.1000e-004**	**9.2600e-003**	**0.0000**	**27.0421**	**27.0421**	**6.2000e-004**	**0.0000**	**27.0575**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8533					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0146	0.0990	0.1376	2.3000e-004		5.3800e-003	5.3800e-003		5.3800e-003	5.3800e-003	0.0000	19.4047	19.4047	1.1600e-003	0.0000	19.4337
Total	**0.8679**	**0.0990**	**0.1376**	**2.3000e-004**		**5.3800e-003**	**5.3800e-003**		**5.3800e-003**	**5.3800e-003**	**0.0000**	**19.4047**	**19.4047**	**1.1600e-003**	**0.0000**	**19.4337**

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0140	8.4900e-003	0.0990	3.0000e-004	0.0314	2.3000e-004	0.0316	8.4100e-003	2.1000e-004	8.6100e-003	0.0000	27.0421	27.0421	6.2000e-004	0.0000	27.0575
Total	**0.0140**	**8.4900e-003**	**0.0990**	**3.0000e-004**	**0.0314**	**2.3000e-004**	**0.0316**	**8.4100e-003**	**2.1000e-004**	**8.6100e-003**	**0.0000**	**27.0421**	**27.0421**	**6.2000e-004**	**0.0000**	**27.0575**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4501	2.3364	5.2563	0.0248	2.9101	0.0127	2.9227	0.7792	0.0118	0.7909	0.0000	2,293.7530	2,293.7530	0.0836	0.0000	2,295.8432
Unmitigated	0.4501	2.3364	5.2563	0.0248	2.9101	0.0127	2.9227	0.7792	0.0118	0.7909	0.0000	2,293.7530	2,293.7530	0.0836	0.0000	2,295.8432

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	2.91	35.04	25.78	19,864	19,864
City Park	2.65	31.85	23.44	18,058	18,058
Retirement Community	506.40	428.33	411.45	1,236,051	1,236,051
Single Family Housing	2,570.40	2,675.70	2327.40	6,545,448	6,545,448
Total	3,082.36	3,170.92	2,788.07	7,819,421	7,819,421

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	875.1341	875.1341	0.0430	8.8900e-003	878.8597
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	875.1341	875.1341	0.0430	8.8900e-003	878.8597
NaturalGas Mitigated	0.0514	0.4390	0.1868	2.8000e-003		0.0355	0.0355		0.0355	0.0355	0.0000	508.4608	508.4608	9.7500e-003	9.3200e-003	511.4824
NaturalGas Unmitigated	0.0514	0.4390	0.1868	2.8000e-003		0.0355	0.0355		0.0355	0.0355	0.0000	508.4608	508.4608	9.7500e-003	9.3200e-003	511.4824

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	2.55283e+006	0.0138	0.1176	0.0501	7.5000e-004		9.5100e-003	9.5100e-003		9.5100e-003	9.5100e-003	0.0000	136.2287	136.2287	2.6100e-003	2.5000e-003	137.0383
Single Family Housing	6.97537e+006	0.0376	0.3214	0.1368	2.0500e-003		0.0260	0.0260		0.0260	0.0260	0.0000	372.2321	372.2321	7.1300e-003	6.8200e-003	374.4441
Total		**0.0514**	**0.4390**	**0.1868**	**2.8000e-003**		**0.0355**	**0.0355**		**0.0355**	**0.0355**	**0.0000**	**508.4608**	**508.4608**	**9.7400e-003**	**9.3200e-003**	**511.4824**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	2.55283e+006	0.0138	0.1176	0.0501	7.5000e-004		9.5100e-003	9.5100e-003		9.5100e-003	9.5100e-003	0.0000	136.2287	136.2287	2.6100e-003	2.5000e-003	137.0383
Single Family Housing	6.97537e+006	0.0376	0.3214	0.1368	2.0500e-003		0.0260	0.0260		0.0260	0.0260	0.0000	372.2321	372.2321	7.1300e-003	6.8200e-003	374.4441
Total		**0.0514**	**0.4390**	**0.1868**	**2.8000e-003**		**0.0355**	**0.0355**		**0.0355**	**0.0355**	**0.0000**	**508.4608**	**508.4608**	**9.7400e-003**	**9.3200e-003**	**511.4824**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Retirement Community	988531	264.6891	0.0130	2.6900e-003	265.8159
Single Family Housing	2.27982e+006	610.4450	0.0300	6.2000e-003	613.0437
Total		**875.1341**	**0.0430**	**8.8900e-003**	**878.8597**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Retirement Community	988531	264.6891	0.0130	2.6900e-003	265.8159
Single Family Housing	2.27982e+006	610.4450	0.0300	6.2000e-003	613.0437
Total		**875.1341**	**0.0430**	**8.8900e-003**	**878.8597**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.3378	0.0570	4.9430	2.6000e-004		0.0275	0.0275		0.0275	0.0275	0.0000	8.1028	8.1028	7.7100e-003	0.0000	8.2956
Unmitigated	3.3378	0.0570	4.9430	2.6000e-004		0.0275	0.0275		0.0275	0.0275	0.0000	8.1028	8.1028	7.7100e-003	0.0000	8.2956

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4394					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.7506					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1478	0.0570	4.9430	2.6000e-004		0.0275	0.0275		0.0275	0.0275	0.0000	8.1028	8.1028	7.7100e-003	0.0000	8.2956
Total	**3.3378**	**0.0570**	**4.9430**	**2.6000e-004**		**0.0275**	**0.0275**		**0.0275**	**0.0275**	**0.0000**	**8.1028**	**8.1028**	**7.7100e-003**	**0.0000**	**8.2956**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4394					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.7506					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1478	0.0570	4.9430	2.6000e-004		0.0275	0.0275		0.0275	0.0275	0.0000	8.1028	8.1028	7.7100e-003	0.0000	8.2956
Total	**3.3378**	**0.0570**	**4.9430**	**2.6000e-004**		**0.0275**	**0.0275**		**0.0275**	**0.0275**	**0.0000**	**8.1028**	**8.1028**	**7.7100e-003**	**0.0000**	**8.2956**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	74.6971	0.0413	0.0248	83.1075
Unmitigated	74.6971	0.0413	0.0248	83.1075

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 3.50296	3.2828	1.6000e-004	3.0000e-005	3.2968
Retirement Community	13.7475 / 8.6669	31.3273	0.0180	0.0109	35.0105
Single Family Housing	17.5916 / 11.0903	40.0870	0.0231	0.0139	44.8002
Total		**74.6971**	**0.0413**	**0.0248**	**83.1075**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 3.50296	3.2828	1.6000e-004	3.0000e-005	3.2968
Retirement Community	13.7475 / 8.6669	31.3273	0.0180	0.0109	35.0105
Single Family Housing	17.5916 / 11.0903	40.0870	0.0231	0.0139	44.8002
Total		**74.6971**	**0.0413**	**0.0248**	**83.1075**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	75.7298	4.4755	0.0000	187.6175
Unmitigated	75.7298	4.4755	0.0000	187.6175

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.25	0.0508	3.0000e-003	0.0000	0.1257
Retirement Community	97.06	19.7023	1.1644	0.0000	48.8116
Single Family Housing	275.76	55.9768	3.3081	0.0000	138.6801
Total		**75.7298**	**4.4755**	**0.0000**	**187.6175**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.25	0.0508	3.0000e-003	0.0000	0.1257
Retirement Community	97.06	19.7023	1.1644	0.0000	48.8116
Single Family Housing	275.76	55.9768	3.3081	0.0000	138.6801
Total		**75.7298**	**4.4755**	**0.0000**	**187.6175**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	528.6770	0.0000	0.0000	528.6770

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	530.1 / 284.8	-1,057.2430	0.0000	0.0000	-1,057.2430
Total		**-1,057.2430**	**0.0000**	**0.0000**	**-1,057.2430**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	2240	1,585.9200	0.0000	0.0000	1,585.9200
Total		**1,585.9200**	**0.0000**	**0.0000**	**1,585.9200**

The Ranch - City of Rancho Cordova (Construction Only - Phase 1)

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.54	Acre	1.54	67,082.40	0
City Park	1.40	Acre	1.40	60,984.00	0
Retirement Community	211.00	Dwelling Unit	42.20	211,000.00	439
Single Family Housing	270.00	Dwelling Unit	28.61	486,000.00	766

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Estimated construction state date of January 2020 (provided by Applicant).

Land Use - This model run provides construction emissions only.

Construction Phase - Phase 1

Off-road Equipment -

Off-road Equipment - For building construction, assumes 1 crane, 2 forklifts, 1 generator set, 1 tractor/loader/backhoe, and 1 welder (as provided by the applicant)

Off-road Equipment -

Off-road Equipment - D
Off-road Equipment -

Off-road Equipment -

Trips and VMT - -

Grading - 173.6 acres graded (as provided by project applicant). Assume 1/2 of site is exported during this this phase (152,708 CY / 2 = 76,354 CY). Total net export for entire project (152,708 CY) as provided by applicant.

Architectural Coating - 75 g/L for architectural coatings as provided by SMAQMD (average as provided by the air district).

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust -

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 28.33% - reflects project person/du value (2.523) vs. statewide avg. (2.97) and latest statewide data (ARB). Parking Degreaser EF red. by 57.5% (corrects for walking paths modeled as 'parking lot').

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%. NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	75.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	40.00	64.00
tblConstructionPhase	NumDays	110.00	153.00
tblConstructionPhase	NumDays	75.00	65.00
tblConstructionPhase	NumDays	1,110.00	586.00
tblConstructionPhase	NumDays	75.00	587.00
tblGrading	AcresOfGrading	382.50	173.60
tblGrading	MaterialExported	0.00	76,354.00
tblLandUse	LotAcreage	87.66	28.61
tblLandUse	Population	563.00	439.00
tblLandUse	Population	721.00	766.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblTripsAndVMT	VendorTripNumber	72.00	0.00
tblTripsAndVMT	VendorTripNumber	72.00	0.00
tblTripsAndVMT	WorkerTripNumber	303.00	0.00
tblTripsAndVMT	WorkerTripNumber	303.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	5.0102	67.5510	36.5623	0.1130	18.2032	2.2382	20.4016	9.9670	2.0615	11.9895	0.0000	11,459.8154	11,459.8154	2.2472	0.0000	11,515.9945
2021	14.5718	22.4407	26.0053	0.0687	7.8269	0.8119	8.6389	1.9943	0.7746	2.7689	0.0000	6,832.8306	6,832.8306	0.7169	0.0000	6,847.6877
2022	14.3048	20.5838	24.8364	0.0675	7.8269	0.6987	8.5256	1.9943	0.6669	2.6612	0.0000	6,716.7292	6,716.7292	0.5786	0.0000	6,731.1931
2023	14.0606	18.4773	23.7452	0.0662	7.8268	0.6045	8.4314	1.9943	0.5768	2.5711	0.0000	6,581.3378	6,581.3378	0.5557	0.0000	6,595.2300
Maximum	**14.5718**	**67.5510**	**36.5623**	**0.1130**	**18.2032**	**2.2382**	**20.4016**	**9.9670**	**2.0615**	**11.9895**	**0.0000**	**11,459.8154**	**11,459.8154**	**2.2472**	**0.0000**	**11,515.9945**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	5.0102	67.5510	36.5623	0.1130	8.2560	2.2382	10.4544	4.5025	2.0615	6.5250	0.0000	11,459.8154	11,459.8154	2.2472	0.0000	11,515.9945
2021	14.5718	22.4407	26.0053	0.0687	7.1663	0.8119	7.9783	1.8322	0.7746	2.6068	0.0000	6,832.8306	6,832.8306	0.7169	0.0000	6,847.6877
2022	14.3048	20.5838	24.8364	0.0675	7.1663	0.6987	7.8650	1.8322	0.6669	2.4990	0.0000	6,716.7292	6,716.7292	0.5786	0.0000	6,731.1931
2023	14.0606	18.4773	23.7452	0.0662	7.1662	0.6045	7.7707	1.8321	0.5768	2.4090	0.0000	6,581.3378	6,581.3378	0.5557	0.0000	6,595.2300
Maximum	**14.5718**	**67.5510**	**36.5623**	**0.1130**	**8.2560**	**2.2382**	**10.4544**	**4.5025**	**2.0615**	**6.5250**	**0.0000**	**11,459.8154**	**11,459.8154**	**2.2472**	**0.0000**	**11,515.9945**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**28.62**	**0.00**	**25.93**	**37.31**	**0.00**	**29.77**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	18.6617	0.4562	39.5439	2.1000e-003		0.2201	0.2201		0.2201	0.2201	0.0000	71.4543	71.4543	0.0680	0.0000	73.1548
Energy	0.2815	2.4057	1.0237	0.0154		0.1945	0.1945		0.1945	0.1945		3,071.1350	3,071.1350	0.0589	0.0563	3,089.3852
Mobile	3.3629	13.3105	34.7581	0.1556	17.5477	0.0737	17.6214	4.6850	0.0685	4.7535		15,850.5945	15,850.5945	0.5426		15,864.1594
Total	**22.3061**	**16.1724**	**75.3257**	**0.1730**	**17.5477**	**0.4883**	**18.0360**	**4.6850**	**0.4831**	**5.1680**	**0.0000**	**18,993.1837**	**18,993.1837**	**0.6695**	**0.0563**	**19,026.6994**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	18.6617	0.4562	39.5439	2.1000e-003		0.2201	0.2201		0.2201	0.2201	0.0000	71.4543	71.4543	0.0680	0.0000	73.1548
Energy	0.2815	2.4057	1.0237	0.0154		0.1945	0.1945		0.1945	0.1945		3,071.1350	3,071.1350	0.0589	0.0563	3,089.3852
Mobile	3.3629	13.3105	34.7581	0.1556	17.5477	0.0737	17.6214	4.6850	0.0685	4.7535		15,850.5945	15,850.5945	0.5426		15,864.1594
Total	**22.3061**	**16.1724**	**75.3257**	**0.1730**	**17.5477**	**0.4883**	**18.0360**	**4.6850**	**0.4831**	**5.1680**	**0.0000**	**18,993.1837**	**18,993.1837**	**0.6695**	**0.0563**	**19,026.6994**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2020	3/30/2020	5	64	
2	Grading	Grading	4/1/2020	10/30/2020	5	153	
3	Paving	Paving	11/1/2020	1/29/2021	5	65	
4	Building Construction	Building Construction	2/1/2021	5/1/2023	5	586	
5	Architectural Coating	Architectural Coating	5/1/2021	8/1/2023	5	587	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 173.6

Acres of Paving: 0

Residential Indoor: 1,411,425; Residential Outdoor: 470,475; Non-Residential Indoor: 10,500; Non-Residential Outdoor: 3,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	2	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	9,544.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	303.00	72.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	61.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0776	0.0412	0.5877	1.4400e-003	0.1369	9.5000e-004	0.1379	0.0363	8.8000e-004	0.0372		142.8323	142.8323	4.0900e-003		142.9346
Total	**0.0776**	**0.0412**	**0.5877**	**1.4400e-003**	**0.1369**	**9.5000e-004**	**0.1379**	**0.0363**	**8.8000e-004**	**0.0372**		**142.8323**	**142.8323**	**4.0900e-003**		**142.9346**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**8.1298**	**2.1974**	**10.3272**	**4.4688**	**2.0216**	**6.4904**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0776	0.0412	0.5877	1.4400e-003	0.1262	9.5000e-004	0.1272	0.0337	8.8000e-004	0.0346		142.8323	142.8323	4.0900e-003		142.9346
Total	**0.0776**	**0.0412**	**0.5877**	**1.4400e-003**	**0.1262**	**9.5000e-004**	**0.1272**	**0.0337**	**8.8000e-004**	**0.0346**		**142.8323**	**142.8323**	**4.0900e-003**		**142.9346**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.3286	0.0000	7.3286	3.4558	0.0000	3.4558			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**7.3286**	**2.1739**	**9.5025**	**3.4558**	**2.0000**	**5.4558**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4739	17.3077	3.9510	0.0494	1.0852	0.0633	1.1485	0.2970	0.0605	0.3575		5,295.2475	5,295.2475	0.3002		5,302.7525
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0862	0.0458	0.6530	1.5900e-003	0.1521	1.0600e-003	0.1532	0.0404	9.7000e-004	0.0413		158.7026	158.7026	4.5500e-003		158.8163
Total	**0.5601**	**17.3535**	**4.6040**	**0.0510**	**1.2374**	**0.0643**	**1.3017**	**0.3374**	**0.0615**	**0.3989**		**5,453.9501**	**5,453.9501**	**0.3048**		**5,461.5688**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.2979	0.0000	3.2979	1.5551	0.0000	1.5551			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**3.2979**	**2.1739**	**5.4718**	**1.5551**	**2.0000**	**3.5551**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4739	17.3077	3.9510	0.0494	1.0110	0.0633	1.0743	0.2788	0.0605	0.3393		5,295.2475	5,295.2475	0.3002		5,302.7525
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0862	0.0458	0.6530	1.5900e-003	0.1402	1.0600e-003	0.1413	0.0374	9.7000e-004	0.0384		158.7026	158.7026	4.5500e-003		158.8163
Total	**0.5601**	**17.3535**	**4.6040**	**0.0510**	**1.1512**	**0.0643**	**1.2156**	**0.3162**	**0.0615**	**0.3777**		**5,453.9501**	**5,453.9501**	**0.3048**		**5,461.5688**

3.4 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**		**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

3.4 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0647	0.0343	0.4898	1.2000e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		119.0269	119.0269	3.4100e-003		119.1122
Total	**0.0647**	**0.0343**	**0.4898**	**1.2000e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**119.0269**	**119.0269**	**3.4100e-003**		**119.1122**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**	**0.0000**	**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

3.4 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0647	0.0343	0.4898	1.2000e-003	0.1052	7.9000e-004	0.1060	0.0281	7.3000e-004	0.0288		119.0269	119.0269	3.4100e-003		119.1122
Total	**0.0647**	**0.0343**	**0.4898**	**1.2000e-003**	**0.1052**	**7.9000e-004**	**0.1060**	**0.0281**	**7.3000e-004**	**0.0288**		**119.0269**	**119.0269**	**3.4100e-003**		**119.1122**

3.4 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

3.4 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0601	0.0308	0.4487	1.1500e-003	0.1141	7.7000e-004	0.1149	0.0303	7.1000e-004	0.0310		114.9719	114.9719	3.0600e-003		115.0483
Total	**0.0601**	**0.0308**	**0.4487**	**1.1500e-003**	**0.1141**	**7.7000e-004**	**0.1149**	**0.0303**	**7.1000e-004**	**0.0310**		**114.9719**	**114.9719**	**3.0600e-003**		**115.0483**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

3.4 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0601	0.0308	0.4487	1.1500e-003	0.1052	7.7000e-004	0.1060	0.0281	7.1000e-004	0.0288		114.9719	114.9719	3.0600e-003		115.0483
Total	**0.0601**	**0.0308**	**0.4487**	**1.1500e-003**	**0.1052**	**7.7000e-004**	**0.1060**	**0.0281**	**7.1000e-004**	**0.0288**		**114.9719**	**114.9719**	**3.0600e-003**		**115.0483**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4439	12.9353	11.4519	0.0200		0.6793	0.6793		0.6443	0.6443		1,878.7579	1,878.7579	0.3978		1,888.7038
Total	**1.4439**	**12.9353**	**11.4519**	**0.0200**		**0.6793**	**0.6793**		**0.6443**	**0.6443**		**1,878.7579**	**1,878.7579**	**0.3978**		**1,888.7038**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2225	7.2317	1.8466	0.0178	1.0520	0.0198	1.0718	0.2765	0.0190	0.2955		1,882.6409	1,882.6409	0.1029		1,885.2133
Worker	1.2144	0.6217	9.0644	0.0233	6.3109	0.0156	6.3265	1.5947	0.0143	1.6090		2,322.4315	2,322.4315	0.0618		2,323.9765
Total	**1.4369**	**7.8534**	**10.9110**	**0.0411**	**7.3629**	**0.0354**	**7.3983**	**1.8712**	**0.0333**	**1.9045**		**4,205.0724**	**4,205.0724**	**0.1647**		**4,209.1897**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4439	12.9353	11.4519	0.0200		0.6793	0.6793		0.6443	0.6443	0.0000	1,878.7579	1,878.7579	0.3978		1,888.7038
Total	**1.4439**	**12.9353**	**11.4519**	**0.0200**		**0.6793**	**0.6793**		**0.6443**	**0.6443**	**0.0000**	**1,878.7579**	**1,878.7579**	**0.3978**		**1,888.7038**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2225	7.2317	1.8466	0.0178	0.9685	0.0198	0.9883	0.2560	0.0190	0.2750		1,882.6409	1,882.6409	0.1029		1,885.2133
Worker	1.2144	0.6217	9.0644	0.0233	5.7701	0.0156	5.7857	1.4620	0.0143	1.4763		2,322.4315	2,322.4315	0.0618		2,323.9765
Total	**1.4369**	**7.8534**	**10.9110**	**0.0411**	**6.7386**	**0.0354**	**6.7740**	**1.7180**	**0.0333**	**1.7513**		**4,205.0724**	**4,205.0724**	**0.1647**		**4,209.1897**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3044	11.6284	11.2933	0.0200		0.5814	0.5814		0.5518	0.5518		1,879.1346	1,879.1346	0.3936		1,888.9739
Total	**1.3044**	**11.6284**	**11.2933**	**0.0200**		**0.5814**	**0.5814**		**0.5518**	**0.5518**		**1,879.1346**	**1,879.1346**	**0.3936**		**1,888.9739**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2065	6.8753	1.7014	0.0176	1.0519	0.0174	1.0693	0.2765	0.0166	0.2931		1,866.2185	1,866.2185	0.0999		1,868.7166
Worker	1.1335	0.5591	8.3476	0.0225	6.3109	0.0152	6.3261	1.5947	0.0140	1.6087		2,239.1434	2,239.1434	0.0556		2,240.5322
Total	**1.3400**	**7.4344**	**10.0490**	**0.0401**	**7.3629**	**0.0325**	**7.3954**	**1.8712**	**0.0306**	**1.9018**		**4,105.3619**	**4,105.3619**	**0.1555**		**4,109.2488**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3044	11.6284	11.2933	0.0200		0.5814	0.5814		0.5518	0.5518	0.0000	1,879.1346	1,879.1346	0.3936		1,888.9739
Total	**1.3044**	**11.6284**	**11.2933**	**0.0200**		**0.5814**	**0.5814**		**0.5518**	**0.5518**	**0.0000**	**1,879.1346**	**1,879.1346**	**0.3936**		**1,888.9739**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2065	6.8753	1.7014	0.0176	0.9684	0.0174	0.9858	0.2560	0.0166	0.2726		1,866.2185	1,866.2185	0.0999		1,868.7166
Worker	1.1335	0.5591	8.3476	0.0225	5.7701	0.0152	5.7853	1.4620	0.0140	1.4759		2,239.1434	2,239.1434	0.0556		2,240.5322
Total	**1.3400**	**7.4344**	**10.0490**	**0.0401**	**6.7385**	**0.0325**	**6.7710**	**1.7180**	**0.0306**	**1.7486**		**4,105.3619**	**4,105.3619**	**0.1555**		**4,109.2488**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2053	10.7378	11.1944	0.0200		0.5078	0.5078		0.4818	0.4818		1,879.4202	1,879.4202	0.3893		1,889.1523
Total	**1.2053**	**10.7378**	**11.1944**	**0.0200**		**0.5078**	**0.5078**		**0.4818**	**0.4818**		**1,879.4202**	**1,879.4202**	**0.3893**		**1,889.1523**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1632	5.8319	1.5093	0.0173	1.0519	8.1900e-003	1.0601	0.2765	7.8300e-003	0.2843		1,831.6716	1,831.6716	0.0898		1,833.9153
Worker	1.0595	0.5033	7.6836	0.0216	6.3109	0.0148	6.3257	1.5947	0.0136	1.6083		2,154.9609	2,154.9609	0.0498		2,156.2058
Total	**1.2227**	**6.3352**	**9.1929**	**0.0389**	**7.3628**	**0.0230**	**7.3858**	**1.8712**	**0.0215**	**1.8927**		**3,986.6325**	**3,986.6325**	**0.1395**		**3,990.1211**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2053	10.7378	11.1944	0.0200		0.5078	0.5078		0.4818	0.4818	0.0000	1,879.4202	1,879.4202	0.3893		1,889.1523
Total	**1.2053**	**10.7378**	**11.1944**	**0.0200**		**0.5078**	**0.5078**		**0.4818**	**0.4818**	**0.0000**	**1,879.4202**	**1,879.4202**	**0.3893**		**1,889.1523**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1632	5.8319	1.5093	0.0173	0.9684	8.1900e-003	0.9766	0.2560	7.8300e-003	0.2638		1,831.6716	1,831.6716	0.0898		1,833.9153
Worker	1.0595	0.5033	7.6836	0.0216	5.7701	0.0148	5.7849	1.4620	0.0136	1.4756		2,154.9609	2,154.9609	0.0498		2,156.2058
Total	**1.2227**	**6.3352**	**9.1929**	**0.0389**	**6.7385**	**0.0230**	**6.7614**	**1.7180**	**0.0215**	**1.7394**		**3,986.6325**	**3,986.6325**	**0.1395**		**3,990.1211**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	11.2276					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**11.4465**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2445	0.1252	1.8248	4.7000e-003	0.4640	3.1300e-003	0.4672	0.1231	2.8900e-003	0.1260		467.5522	467.5522	0.0124		467.8633
Total	**0.2445**	**0.1252**	**1.8248**	**4.7000e-003**	**0.4640**	**3.1300e-003**	**0.4672**	**0.1231**	**2.8900e-003**	**0.1260**		**467.5522**	**467.5522**	**0.0124**		**467.8633**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	11.2276					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**11.4465**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2445	0.1252	1.8248	4.7000e-003	0.4277	3.1300e-003	0.4309	0.1142	2.8900e-003	0.1171		467.5522	467.5522	0.0124		467.8633
Total	**0.2445**	**0.1252**	**1.8248**	**4.7000e-003**	**0.4277**	**3.1300e-003**	**0.4309**	**0.1142**	**2.8900e-003**	**0.1171**		**467.5522**	**467.5522**	**0.0124**		**467.8633**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	11.2276					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**11.4322**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2282	0.1126	1.6805	4.5300e-003	0.4640	3.0500e-003	0.4671	0.1231	2.8100e-003	0.1259		450.7847	450.7847	0.0112		451.0642
Total	**0.2282**	**0.1126**	**1.6805**	**4.5300e-003**	**0.4640**	**3.0500e-003**	**0.4671**	**0.1231**	**2.8100e-003**	**0.1259**		**450.7847**	**450.7847**	**0.0112**		**451.0642**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	11.2276					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**11.4322**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2282	0.1126	1.6805	4.5300e-003	0.4277	3.0500e-003	0.4308	0.1142	2.8100e-003	0.1170		450.7847	450.7847	0.0112		451.0642
Total	**0.2282**	**0.1126**	**1.6805**	**4.5300e-003**	**0.4277**	**3.0500e-003**	**0.4308**	**0.1142**	**2.8100e-003**	**0.1170**		**450.7847**	**450.7847**	**0.0112**		**451.0642**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	11.2276					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**11.4193**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2133	0.1013	1.5469	4.3600e-003	0.4640	2.9800e-003	0.4670	0.1231	2.7400e-003	0.1258		433.8370	433.8370	0.0100		434.0876
Total	**0.2133**	**0.1013**	**1.5469**	**4.3600e-003**	**0.4640**	**2.9800e-003**	**0.4670**	**0.1231**	**2.7400e-003**	**0.1258**		**433.8370**	**433.8370**	**0.0100**		**434.0876**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	11.2276					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**11.4193**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2133	0.1013	1.5469	4.3600e-003	0.4277	2.9800e-003	0.4307	0.1142	2.7400e-003	0.1169		433.8370	433.8370	0.0100		434.0876
Total	**0.2133**	**0.1013**	**1.5469**	**4.3600e-003**	**0.4277**	**2.9800e-003**	**0.4307**	**0.1142**	**2.7400e-003**	**0.1169**		**433.8370**	**433.8370**	**0.0100**		**434.0876**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.3629	13.3105	34.7581	0.1556	17.5477	0.0737	17.6214	4.6850	0.0685	4.7535		15,850.5945	15,850.5945	0.5426		15,864.1594
Unmitigated	3.3629	13.3105	34.7581	0.1556	17.5477	0.0737	17.6214	4.6850	0.0685	4.7535		15,850.5945	15,850.5945	0.5426		15,864.1594

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	2.91	35.04	25.78	19,864	19,864
City Park	2.65	31.85	23.44	18,058	18,058
Retirement Community	506.40	428.33	411.45	1,236,051	1,236,051
Single Family Housing	2,570.40	2,675.70	2327.40	6,545,448	6,545,448
Total	3,082.36	3,170.92	2,788.07	7,819,421	7,819,421

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2815	2.4057	1.0237	0.0154		0.1945	0.1945		0.1945	0.1945		3,071.1350	3,071.1350	0.0589	0.0563	3,089.3852
NaturalGas Unmitigated	0.2815	2.4057	1.0237	0.0154		0.1945	0.1945		0.1945	0.1945		3,071.1350	3,071.1350	0.0589	0.0563	3,089.3852

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	6994.05	0.0754	0.6446	0.2743	4.1100e-003		0.0521	0.0521		0.0521	0.0521		822.8300	822.8300	0.0158	0.0151	827.7196
Single Family Housing	19110.6	0.2061	1.7612	0.7494	0.0112		0.1424	0.1424		0.1424	0.1424		2,248.3050	2,248.3050	0.0431	0.0412	2,261.6656
Total		**0.2815**	**2.4057**	**1.0237**	**0.0154**		**0.1945**	**0.1945**		**0.1945**	**0.1945**		**3,071.1350**	**3,071.1350**	**0.0589**	**0.0563**	**3,089.3852**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	6.99405	0.0754	0.6446	0.2743	4.1100e-003		0.0521	0.0521		0.0521	0.0521		822.8300	822.8300	0.0158	0.0151	827.7196
Single Family Housing	19.1106	0.2061	1.7612	0.7494	0.0112		0.1424	0.1424		0.1424	0.1424		2,248.3050	2,248.3050	0.0431	0.0412	2,261.6656
Total		**0.2815**	**2.4057**	**1.0237**	**0.0154**		**0.1945**	**0.1945**		**0.1945**	**0.1945**		**3,071.1350**	**3,071.1350**	**0.0589**	**0.0563**	**3,089.3852**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	18.6617	0.4562	39.5439	2.1000e-003		0.2201	0.2201		0.2201	0.2201	0.0000	71.4543	71.4543	0.0680	0.0000	73.1548
Unmitigated	18.6617	0.4562	39.5439	2.1000e-003		0.2201	0.2201		0.2201	0.2201	0.0000	71.4543	71.4543	0.0680	0.0000	73.1548

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.4075					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	15.0718					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1824	0.4562	39.5439	2.1000e-003		0.2201	0.2201		0.2201	0.2201		71.4543	71.4543	0.0680		73.1548
Total	**18.6617**	**0.4562**	**39.5439**	**2.1000e-003**		**0.2201**	**0.2201**		**0.2201**	**0.2201**	**0.0000**	**71.4543**	**71.4543**	**0.0680**	**0.0000**	**73.1548**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.4075					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	15.0718					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1824	0.4562	39.5439	2.1000e-003		0.2201	0.2201		0.2201	0.2201		71.4543	71.4543	0.0680		73.1548
Total	**18.6617**	**0.4562**	**39.5439**	**2.1000e-003**		**0.2201**	**0.2201**		**0.2201**	**0.2201**	**0.0000**	**71.4543**	**71.4543**	**0.0680**	**0.0000**	**73.1548**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

The Ranch - City of Rancho Cordova (Construction Only - Phase 1)

Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.54	Acre	1.54	67,082.40	0
City Park	1.40	Acre	1.40	60,984.00	0
Retirement Community	211.00	Dwelling Unit	42.20	211,000.00	439
Single Family Housing	270.00	Dwelling Unit	28.61	486,000.00	766

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Estimated construction state date of January 2020 (provided by Applicant).

Land Use - This model run provides construction emissions only.

Construction Phase - Phase 1

Off-road Equipment -

Off-road Equipment - For building construction, assumes 1 crane, 2 forklifts, 1 generator set, 1 tractor/loader/backhoe, and 1 welder (as provided by the applicant)

Off-road Equipment -

Off-road Equipment - D
Off-road Equipment -

Off-road Equipment -

Trips and VMT - -

Grading - 173.6 acres graded (as provided by project applicant). Assume 1/2 of site is exported during this this phase (152,708 CY / 2 = 76,354 CY). Total net export for entire project (152,708 CY) as provided by applicant.

Architectural Coating - 75 g/L for architectural coatings as provided by SMAQMD (average as provided by the air district).

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust -

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 28.33% - reflects project person/du value (2.523) vs. statewide avg. (2.97) and latest statewide data (ARB). Parking Degreaser EF red. by 57.5% (corrects for walking paths modeled as 'parking lot').

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%. NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	75.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	40.00	64.00
tblConstructionPhase	NumDays	110.00	153.00
tblConstructionPhase	NumDays	75.00	65.00
tblConstructionPhase	NumDays	1,110.00	586.00
tblConstructionPhase	NumDays	75.00	587.00
tblGrading	AcresOfGrading	382.50	173.60
tblGrading	MaterialExported	0.00	76,354.00
tblLandUse	LotAcreage	87.66	28.61
tblLandUse	Population	563.00	439.00
tblLandUse	Population	721.00	766.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblTripsAndVMT	VendorTripNumber	72.00	0.00
tblTripsAndVMT	VendorTripNumber	72.00	0.00
tblTripsAndVMT	WorkerTripNumber	303.00	0.00
tblTripsAndVMT	WorkerTripNumber	303.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	5.0184	68.2687	36.7453	0.1121	18.2032	2.2403	20.4016	9.9670	2.0635	11.9895	0.0000	11,359.1594	11,359.1594	2.2605	0.0000	11,415.6713
2021	14.4696	22.7352	24.6991	0.0648	7.8269	0.8132	8.6401	1.9943	0.7758	2.7701	0.0000	6,444.7387	6,444.7387	0.7166	0.0000	6,459.5856
2022	14.2117	20.8422	23.5991	0.0638	7.8269	0.6999	8.5268	1.9943	0.6680	2.6623	0.0000	6,341.0839	6,341.0839	0.5787	0.0000	6,355.5520
2023	13.9753	18.6773	22.5498	0.0626	7.8268	0.6053	8.4321	1.9943	0.5775	2.5718	0.0000	6,219.1542	6,219.1542	0.5554	0.0000	6,233.0399
Maximum	**14.4696**	**68.2687**	**36.7453**	**0.1121**	**18.2032**	**2.2403**	**20.4016**	**9.9670**	**2.0635**	**11.9895**	**0.0000**	**11,359.1594**	**11,359.1594**	**2.2605**	**0.0000**	**11,415.6713**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	5.0184	68.2687	36.7453	0.1121	8.2560	2.2403	10.4544	4.5025	2.0635	6.5250	0.0000	11,359.1594	11,359.1594	2.2605	0.0000	11,415.6713
2021	14.4696	22.7352	24.6991	0.0648	7.1663	0.8132	7.9795	1.8322	0.7758	2.6080	0.0000	6,444.7387	6,444.7387	0.7166	0.0000	6,459.5856
2022	14.2117	20.8422	23.5991	0.0638	7.1663	0.6999	7.8661	1.8322	0.6680	2.5001	0.0000	6,341.0839	6,341.0839	0.5787	0.0000	6,355.5520
2023	13.9753	18.6773	22.5498	0.0626	7.1662	0.6053	7.7715	1.8321	0.5775	2.4096	0.0000	6,219.1542	6,219.1542	0.5554	0.0000	6,233.0399
Maximum	**14.4696**	**68.2687**	**36.7453**	**0.1121**	**8.2560**	**2.2403**	**10.4544**	**4.5025**	**2.0635**	**6.5250**	**0.0000**	**11,359.1594**	**11,359.1594**	**2.2605**	**0.0000**	**11,415.6713**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**28.62**	**0.00**	**25.93**	**37.31**	**0.00**	**29.76**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	18.6617	0.4562	39.5439	2.1000e-003		0.2201	0.2201		0.2201	0.2201	0.0000	71.4543	71.4543	0.0680	0.0000	73.1548
Energy	0.2815	2.4057	1.0237	0.0154		0.1945	0.1945		0.1945	0.1945		3,071.1350	3,071.1350	0.0589	0.0563	3,089.3852
Mobile	2.4442	13.8485	31.4031	0.1411	17.5477	0.0741	17.6217	4.6850	0.0688	4.7538		14,404.8364	14,404.8364	0.5503		14,418.5941
Total	**21.3874**	**16.7105**	**71.9707**	**0.1586**	**17.5477**	**0.4886**	**18.0363**	**4.6850**	**0.4834**	**5.1684**	**0.0000**	**17,547.4257**	**17,547.4257**	**0.6772**	**0.0563**	**17,581.1341**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	18.6617	0.4562	39.5439	2.1000e-003		0.2201	0.2201		0.2201	0.2201	0.0000	71.4543	71.4543	0.0680	0.0000	73.1548
Energy	0.2815	2.4057	1.0237	0.0154		0.1945	0.1945		0.1945	0.1945		3,071.1350	3,071.1350	0.0589	0.0563	3,089.3852
Mobile	2.4442	13.8485	31.4031	0.1411	17.5477	0.0741	17.6217	4.6850	0.0688	4.7538		14,404.8364	14,404.8364	0.5503		14,418.5941
Total	**21.3874**	**16.7105**	**71.9707**	**0.1586**	**17.5477**	**0.4886**	**18.0363**	**4.6850**	**0.4834**	**5.1684**	**0.0000**	**17,547.4257**	**17,547.4257**	**0.6772**	**0.0563**	**17,581.1341**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2020	3/30/2020	5	64	
2	Grading	Grading	4/1/2020	10/30/2020	5	153	
3	Paving	Paving	11/1/2020	1/29/2021	5	65	
4	Building Construction	Building Construction	2/1/2021	5/1/2023	5	586	
5	Architectural Coating	Architectural Coating	5/1/2021	8/1/2023	5	587	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 173.6

Acres of Paving: 0

Residential Indoor: 1,411,425; Residential Outdoor: 470,475; Non-Residential Indoor: 10,500; Non-Residential Outdoor: 3,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	2	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	9,544.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	303.00	72.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	61.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0714	0.0509	0.5032	1.2600e-003	0.1369	9.5000e-004	0.1379	0.0363	8.8000e-004	0.0372		125.4399	125.4399	3.6100e-003		125.5301
Total	**0.0714**	**0.0509**	**0.5032**	**1.2600e-003**	**0.1369**	**9.5000e-004**	**0.1379**	**0.0363**	**8.8000e-004**	**0.0372**		**125.4399**	**125.4399**	**3.6100e-003**		**125.5301**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**8.1298**	**2.1974**	**10.3272**	**4.4688**	**2.0216**	**6.4904**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0714	0.0509	0.5032	1.2600e-003	0.1262	9.5000e-004	0.1272	0.0337	8.8000e-004	0.0346		125.4399	125.4399	3.6100e-003		125.5301
Total	**0.0714**	**0.0509**	**0.5032**	**1.2600e-003**	**0.1262**	**9.5000e-004**	**0.1272**	**0.0337**	**8.8000e-004**	**0.0346**		**125.4399**	**125.4399**	**3.6100e-003**		**125.5301**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.3286	0.0000	7.3286	3.4558	0.0000	3.4558			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**7.3286**	**2.1739**	**9.5025**	**3.4558**	**2.0000**	**5.4558**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4889	18.0147	4.2279	0.0487	1.0852	0.0654	1.1506	0.2970	0.0625	0.3595		5,213.9165	5,213.9165	0.3141		5,221.7677
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0794	0.0565	0.5591	1.4000e-003	0.1521	1.0600e-003	0.1532	0.0404	9.7000e-004	0.0413		139.3777	139.3777	4.0100e-003		139.4779
Total	**0.5683**	**18.0712**	**4.7870**	**0.0501**	**1.2374**	**0.0664**	**1.3038**	**0.3374**	**0.0635**	**0.4009**		**5,353.2942**	**5,353.2942**	**0.3181**		**5,361.2456**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.2979	0.0000	3.2979	1.5551	0.0000	1.5551			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**3.2979**	**2.1739**	**5.4718**	**1.5551**	**2.0000**	**3.5551**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4889	18.0147	4.2279	0.0487	1.0110	0.0654	1.0764	0.2788	0.0625	0.3413		5,213.9165	5,213.9165	0.3141		5,221.7677
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0794	0.0565	0.5591	1.4000e-003	0.1402	1.0600e-003	0.1413	0.0374	9.7000e-004	0.0384		139.3777	139.3777	4.0100e-003		139.4779
Total	**0.5683**	**18.0712**	**4.7870**	**0.0501**	**1.1512**	**0.0664**	**1.2177**	**0.3162**	**0.0635**	**0.3797**		**5,353.2942**	**5,353.2942**	**0.3181**		**5,361.2456**

3.4 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**		**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

3.4 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0595	0.0424	0.4194	1.0500e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		104.5333	104.5333	3.0100e-003		104.6084
Total	**0.0595**	**0.0424**	**0.4194**	**1.0500e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**104.5333**	**104.5333**	**3.0100e-003**		**104.6084**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**	**0.0000**	**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

3.4 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0595	0.0424	0.4194	1.0500e-003	0.1052	7.9000e-004	0.1060	0.0281	7.3000e-004	0.0288		104.5333	104.5333	3.0100e-003		104.6084
Total	**0.0595**	**0.0424**	**0.4194**	**1.0500e-003**	**0.1052**	**7.9000e-004**	**0.1060**	**0.0281**	**7.3000e-004**	**0.0288**		**104.5333**	**104.5333**	**3.0100e-003**		**104.6084**

3.4 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

3.4 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0554	0.0380	0.3827	1.0100e-003	0.1141	7.7000e-004	0.1149	0.0303	7.1000e-004	0.0310		100.9746	100.9746	2.6900e-003		101.0419
Total	**0.0554**	**0.0380**	**0.3827**	**1.0100e-003**	**0.1141**	**7.7000e-004**	**0.1149**	**0.0303**	**7.1000e-004**	**0.0310**		**100.9746**	**100.9746**	**2.6900e-003**		**101.0419**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

3.4 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0554	0.0380	0.3827	1.0100e-003	0.1052	7.7000e-004	0.1060	0.0281	7.1000e-004	0.0288		100.9746	100.9746	2.6900e-003		101.0419
Total	**0.0554**	**0.0380**	**0.3827**	**1.0100e-003**	**0.1052**	**7.7000e-004**	**0.1060**	**0.0281**	**7.1000e-004**	**0.0288**		**100.9746**	**100.9746**	**2.6900e-003**		**101.0419**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4439	12.9353	11.4519	0.0200		0.6793	0.6793		0.6443	0.6443		1,878.7579	1,878.7579	0.3978		1,888.7038
Total	**1.4439**	**12.9353**	**11.4519**	**0.0200**		**0.6793**	**0.6793**		**0.6443**	**0.6443**		**1,878.7579**	**1,878.7579**	**0.3978**		**1,888.7038**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2357	7.3507	2.1417	0.0173	1.0520	0.0211	1.0731	0.2765	0.0202	0.2967		1,834.2149	1,834.2149	0.1114		1,837.0006
Worker	1.1183	0.7678	7.7314	0.0205	6.3109	0.0156	6.3265	1.5947	0.0143	1.6090		2,039.6877	2,039.6877	0.0544		2,041.0466
Total	**1.3540**	**8.1184**	**9.8731**	**0.0378**	**7.3629**	**0.0366**	**7.3995**	**1.8712**	**0.0345**	**1.9057**		**3,873.9026**	**3,873.9026**	**0.1658**		**3,878.0472**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4439	12.9353	11.4519	0.0200		0.6793	0.6793		0.6443	0.6443	0.0000	1,878.7579	1,878.7579	0.3978		1,888.7038
Total	**1.4439**	**12.9353**	**11.4519**	**0.0200**		**0.6793**	**0.6793**		**0.6443**	**0.6443**	**0.0000**	**1,878.7579**	**1,878.7579**	**0.3978**		**1,888.7038**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2357	7.3507	2.1417	0.0173	0.9685	0.0211	0.9895	0.2560	0.0202	0.2762		1,834.2149	1,834.2149	0.1114		1,837.0006
Worker	1.1183	0.7678	7.7314	0.0205	5.7701	0.0156	5.7857	1.4620	0.0143	1.4763		2,039.6877	2,039.6877	0.0544		2,041.0466
Total	**1.3540**	**8.1184**	**9.8731**	**0.0378**	**6.7386**	**0.0366**	**6.7752**	**1.7180**	**0.0345**	**1.7525**		**3,873.9026**	**3,873.9026**	**0.1658**		**3,878.0472**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3044	11.6284	11.2933	0.0200		0.5814	0.5814		0.5518	0.5518		1,879.1346	1,879.1346	0.3936		1,888.9739
Total	**1.3044**	**11.6284**	**11.2933**	**0.0200**		**0.5814**	**0.5814**		**0.5518**	**0.5518**		**1,879.1346**	**1,879.1346**	**0.3936**		**1,888.9739**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2188	6.9761	1.9752	0.0172	1.0519	0.0185	1.0705	0.2765	0.0177	0.2942		1,817.9171	1,817.9171	0.1083		1,820.6238
Worker	1.0458	0.6903	7.0898	0.0197	6.3109	0.0152	6.3261	1.5947	0.0140	1.6087		1,966.6566	1,966.6566	0.0488		1,967.8753
Total	**1.2646**	**7.6664**	**9.0649**	**0.0369**	**7.3629**	**0.0337**	**7.3965**	**1.8712**	**0.0317**	**1.9029**		**3,784.5737**	**3,784.5737**	**0.1570**		**3,788.4991**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3044	11.6284	11.2933	0.0200		0.5814	0.5814		0.5518	0.5518	0.0000	1,879.1346	1,879.1346	0.3936		1,888.9739
Total	**1.3044**	**11.6284**	**11.2933**	**0.0200**		**0.5814**	**0.5814**		**0.5518**	**0.5518**	**0.0000**	**1,879.1346**	**1,879.1346**	**0.3936**		**1,888.9739**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2188	6.9761	1.9752	0.0172	0.9684	0.0185	0.9869	0.2560	0.0177	0.2737		1,817.9171	1,817.9171	0.1083		1,820.6238
Worker	1.0458	0.6903	7.0898	0.0197	5.7701	0.0152	5.7853	1.4620	0.0140	1.4759		1,966.6566	1,966.6566	0.0488		1,967.8753
Total	**1.2646**	**7.6664**	**9.0649**	**0.0369**	**6.7385**	**0.0337**	**6.7722**	**1.7180**	**0.0317**	**1.7496**		**3,784.5737**	**3,784.5737**	**0.1570**		**3,788.4991**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2053	10.7378	11.1944	0.0200		0.5078	0.5078		0.4818	0.4818		1,879.4202	1,879.4202	0.3893		1,889.1523
Total	**1.2053**	**10.7378**	**11.1944**	**0.0200**		**0.5078**	**0.5078**		**0.4818**	**0.4818**		**1,879.4202**	**1,879.4202**	**0.3893**		**1,889.1523**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1734	5.8906	1.7406	0.0168	1.0519	8.9100e-003	1.0608	0.2765	8.5200e-003	0.2850		1,784.3885	1,784.3885	0.0969		1,786.8119
Worker	0.9800	0.6209	6.4959	0.0190	6.3109	0.0148	6.3257	1.5947	0.0136	1.6083		1,892.8322	1,892.8322	0.0436		1,893.9221
Total	**1.1534**	**6.5115**	**8.2365**	**0.0358**	**7.3628**	**0.0237**	**7.3865**	**1.8712**	**0.0221**	**1.8933**		**3,677.2207**	**3,677.2207**	**0.1405**		**3,680.7340**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2053	10.7378	11.1944	0.0200		0.5078	0.5078		0.4818	0.4818	0.0000	1,879.4202	1,879.4202	0.3893		1,889.1523
Total	**1.2053**	**10.7378**	**11.1944**	**0.0200**		**0.5078**	**0.5078**		**0.4818**	**0.4818**	**0.0000**	**1,879.4202**	**1,879.4202**	**0.3893**		**1,889.1523**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1734	5.8906	1.7406	0.0168	0.9684	8.9100e-003	0.9773	0.2560	8.5200e-003	0.2645		1,784.3885	1,784.3885	0.0969		1,786.8119
Worker	0.9800	0.6209	6.4959	0.0190	5.7701	0.0148	5.7849	1.4620	0.0136	1.4756		1,892.8322	1,892.8322	0.0436		1,893.9221
Total	**1.1534**	**6.5115**	**8.2365**	**0.0358**	**6.7385**	**0.0237**	**6.7622**	**1.7180**	**0.0221**	**1.7401**		**3,677.2207**	**3,677.2207**	**0.1405**		**3,680.7340**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	11.2276					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**11.4465**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2251	0.1546	1.5565	4.1200e-003	0.4640	3.1300e-003	0.4672	0.1231	2.8900e-003	0.1260		410.6302	410.6302	0.0109		410.9038
Total	**0.2251**	**0.1546**	**1.5565**	**4.1200e-003**	**0.4640**	**3.1300e-003**	**0.4672**	**0.1231**	**2.8900e-003**	**0.1260**		**410.6302**	**410.6302**	**0.0109**		**410.9038**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	11.2276					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**11.4465**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2251	0.1546	1.5565	4.1200e-003	0.4277	3.1300e-003	0.4309	0.1142	2.8900e-003	0.1171		410.6302	410.6302	0.0109		410.9038
Total	**0.2251**	**0.1546**	**1.5565**	**4.1200e-003**	**0.4277**	**3.1300e-003**	**0.4309**	**0.1142**	**2.8900e-003**	**0.1171**		**410.6302**	**410.6302**	**0.0109**		**410.9038**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	11.2276					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**11.4322**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2106	0.1390	1.4273	3.9700e-003	0.4640	3.0500e-003	0.4671	0.1231	2.8100e-003	0.1259		395.9276	395.9276	9.8100e-003		396.1729
Total	**0.2106**	**0.1390**	**1.4273**	**3.9700e-003**	**0.4640**	**3.0500e-003**	**0.4671**	**0.1231**	**2.8100e-003**	**0.1259**		**395.9276**	**395.9276**	**9.8100e-003**		**396.1729**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	11.2276					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**11.4322**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2106	0.1390	1.4273	3.9700e-003	0.4277	3.0500e-003	0.4308	0.1142	2.8100e-003	0.1170		395.9276	395.9276	9.8100e-003		396.1729
Total	**0.2106**	**0.1390**	**1.4273**	**3.9700e-003**	**0.4277**	**3.0500e-003**	**0.4308**	**0.1142**	**2.8100e-003**	**0.1170**		**395.9276**	**395.9276**	**9.8100e-003**		**396.1729**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	11.2276					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**11.4193**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1973	0.1250	1.3078	3.8200e-003	0.4640	2.9800e-003	0.4670	0.1231	2.7400e-003	0.1258		381.0652	381.0652	8.7800e-003		381.2846
Total	**0.1973**	**0.1250**	**1.3078**	**3.8200e-003**	**0.4640**	**2.9800e-003**	**0.4670**	**0.1231**	**2.7400e-003**	**0.1258**		**381.0652**	**381.0652**	**8.7800e-003**		**381.2846**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	11.2276					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**11.4193**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1973	0.1250	1.3078	3.8200e-003	0.4277	2.9800e-003	0.4307	0.1142	2.7400e-003	0.1169		381.0652	381.0652	8.7800e-003		381.2846
Total	**0.1973**	**0.1250**	**1.3078**	**3.8200e-003**	**0.4277**	**2.9800e-003**	**0.4307**	**0.1142**	**2.7400e-003**	**0.1169**		**381.0652**	**381.0652**	**8.7800e-003**		**381.2846**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.4442	13.8485	31.4031	0.1411	17.5477	0.0741	17.6217	4.6850	0.0688	4.7538		14,404.8364	14,404.8364	0.5503		14,418.5941
Unmitigated	2.4442	13.8485	31.4031	0.1411	17.5477	0.0741	17.6217	4.6850	0.0688	4.7538		14,404.8364	14,404.8364	0.5503		14,418.5941

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	2.91	35.04	25.78	19,864	19,864
City Park	2.65	31.85	23.44	18,058	18,058
Retirement Community	506.40	428.33	411.45	1,236,051	1,236,051
Single Family Housing	2,570.40	2,675.70	2327.40	6,545,448	6,545,448
Total	3,082.36	3,170.92	2,788.07	7,819,421	7,819,421

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2815	2.4057	1.0237	0.0154		0.1945	0.1945		0.1945	0.1945		3,071.1350	3,071.1350	0.0589	0.0563	3,089.3852
NaturalGas Unmitigated	0.2815	2.4057	1.0237	0.0154		0.1945	0.1945		0.1945	0.1945		3,071.1350	3,071.1350	0.0589	0.0563	3,089.3852

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	6994.05	0.0754	0.6446	0.2743	4.1100e-003		0.0521	0.0521		0.0521	0.0521		822.8300	822.8300	0.0158	0.0151	827.7196
Single Family Housing	19110.6	0.2061	1.7612	0.7494	0.0112		0.1424	0.1424		0.1424	0.1424		2,248.3050	2,248.3050	0.0431	0.0412	2,261.6656
Total		**0.2815**	**2.4057**	**1.0237**	**0.0154**		**0.1945**	**0.1945**		**0.1945**	**0.1945**		**3,071.1350**	**3,071.1350**	**0.0589**	**0.0563**	**3,089.3852**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	6.99405	0.0754	0.6446	0.2743	4.1100e-003		0.0521	0.0521		0.0521	0.0521		822.8300	822.8300	0.0158	0.0151	827.7196
Single Family Housing	19.1106	0.2061	1.7612	0.7494	0.0112		0.1424	0.1424		0.1424	0.1424		2,248.3050	2,248.3050	0.0431	0.0412	2,261.6656
Total		**0.2815**	**2.4057**	**1.0237**	**0.0154**		**0.1945**	**0.1945**		**0.1945**	**0.1945**		**3,071.1350**	**3,071.1350**	**0.0589**	**0.0563**	**3,089.3852**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	18.6617	0.4562	39.5439	2.1000e-003		0.2201	0.2201		0.2201	0.2201	0.0000	71.4543	71.4543	0.0680	0.0000	73.1548
Unmitigated	18.6617	0.4562	39.5439	2.1000e-003		0.2201	0.2201		0.2201	0.2201	0.0000	71.4543	71.4543	0.0680	0.0000	73.1548

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.4075					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	15.0718					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1824	0.4562	39.5439	2.1000e-003		0.2201	0.2201		0.2201	0.2201		71.4543	71.4543	0.0680		73.1548
Total	**18.6617**	**0.4562**	**39.5439**	**2.1000e-003**		**0.2201**	**0.2201**		**0.2201**	**0.2201**	**0.0000**	**71.4543**	**71.4543**	**0.0680**	**0.0000**	**73.1548**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.4075					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	15.0718					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1824	0.4562	39.5439	2.1000e-003		0.2201	0.2201		0.2201	0.2201		71.4543	71.4543	0.0680		73.1548
Total	**18.6617**	**0.4562**	**39.5439**	**2.1000e-003**		**0.2201**	**0.2201**		**0.2201**	**0.2201**	**0.0000**	**71.4543**	**71.4543**	**0.0680**	**0.0000**	**73.1548**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

The Ranch - City of Rancho Cordova (Construction Only - Phase 2)

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.54	Acre	1.54	67,082.40	0
City Park	2.19	Acre	2.19	95,396.40	0
Retirement Community	199.00	Dwelling Unit	39.80	199,000.00	414
Single Family Housing	197.00	Dwelling Unit	63.96	354,600.00	559
Retirement Community	38.00	Dwelling Unit	7.60	38,000.00	77

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Estimated construction state date of April 2022 (provided by Applicant).

Land Use - This model run provides construction emissions only.

Construction Phase - Phase 2

Off-road Equipment -

Off-road Equipment - For building construction, assumes 1 crane, 2 forklifts, 1 generator set, 1 tractor/loader/backhoe, and 1 welder (as provided by the applicant)

Off-road Equipment -
Off-road Equipment - D

Trips and VMT - -

Grading - No grading/soil export assumed for Phase 2 (already captured during Phase 1)

Architectural Coating - 75 g/L as provided by SMAQMD (average as provided by the air district).

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust -

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 28.33% - reflects project person/du value (2.523) vs. statewide avg. (2.97) and latest statewide data (ARB). Parking Degreaser EF red. by 57.5% (corrects for walking paths modeled as 'parking lot').

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%. NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Fleet Mix -

The Ranch - City of Rancho Cordova (Construction Only - Phase 2) - Sacramento County, Annual

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	75.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	220.00	870.00
tblConstructionPhase	NumDays	3,100.00	870.00
tblConstructionPhase	NumDays	220.00	65.00
tblConstructionPhase	NumDays	120.00	131.00
tblConstructionPhase	PhaseEndDate	4/10/2036	11/30/2026
tblConstructionPhase	PhaseEndDate	8/3/2034	7/31/2026
tblConstructionPhase	PhaseEndDate	6/7/2035	12/30/2022
tblConstructionPhase	PhaseEndDate	9/15/2022	9/30/2022
tblConstructionPhase	PhaseStartDate	6/8/2035	8/1/2023
tblConstructionPhase	PhaseStartDate	9/16/2022	4/1/2023
tblConstructionPhase	PhaseStartDate	8/4/2034	10/1/2022
tblLandUse	Population	531.00	414.00
tblLandUse	Population	526.00	559.00
tblLandUse	Population	101.00	77.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	62.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2473	2.5309	1.7915	3.3100e-003	1.1920	0.1241	1.3161	0.6528	0.1142	0.7670	0.0000	291.2631	291.2631	0.0921	0.0000	293.5647
2023	0.6329	2.1193	2.5590	6.6500e-003	0.3099	0.0746	0.3844	0.0829	0.0704	0.1533	0.0000	598.4194	598.4194	0.0674	0.0000	600.1040
2024	1.2197	2.7715	3.5183	9.2000e-003	0.4654	0.0917	0.5571	0.1240	0.0867	0.2107	0.0000	827.4163	827.4163	0.0906	0.0000	829.6811
2025	1.1916	2.6026	3.4127	9.0300e-003	0.4636	0.0789	0.5424	0.1235	0.0745	0.1981	0.0000	812.2331	812.2331	0.0891	0.0000	814.4609
2026	0.9806	1.5571	2.0698	5.4700e-003	0.3065	0.0482	0.3547	0.0813	0.0457	0.1270	0.0000	491.4901	491.4901	0.0524	0.0000	492.8005
Maximum	**1.2197**	**2.7715**	**3.5183**	**9.2000e-003**	**1.1920**	**0.1241**	**1.3161**	**0.6528**	**0.1142**	**0.7670**	**0.0000**	**827.4163**	**827.4163**	**0.0921**	**0.0000**	**829.6811**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2473	2.5309	1.7915	3.3100e-003	0.5405	0.1241	0.6646	0.2948	0.1142	0.4091	0.0000	291.2627	291.2627	0.0921	0.0000	293.5643
2023	0.6329	2.1193	2.5590	6.6500e-003	0.2861	0.0746	0.3606	0.0771	0.0704	0.1475	0.0000	598.4191	598.4191	0.0674	0.0000	600.1037
2024	1.2197	2.7715	3.5183	9.2000e-003	0.4293	0.0917	0.5210	0.1152	0.0867	0.2019	0.0000	827.4159	827.4159	0.0906	0.0000	829.6807
2025	1.1916	2.6026	3.4127	9.0300e-003	0.4277	0.0789	0.5065	0.1147	0.0745	0.1893	0.0000	812.2327	812.2327	0.0891	0.0000	814.4605
2026	0.9806	1.5571	2.0698	5.4700e-003	0.2825	0.0482	0.3307	0.0754	0.0457	0.1211	0.0000	491.4898	491.4898	0.0524	0.0000	492.8002
Maximum	**1.2197**	**2.7715**	**3.5183**	**9.2000e-003**	**0.5405**	**0.1241**	**0.6646**	**0.2948**	**0.1142**	**0.4091**	**0.0000**	**827.4159**	**827.4159**	**0.0921**	**0.0000**	**829.6807**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**28.17**	**0.00**	**24.45**	**36.38**	**0.00**	**26.60**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-1-2022	6-30-2022	1.1815	1.1815
2	7-1-2022	9-30-2022	1.1945	1.1945
3	10-1-2022	12-31-2022	0.3974	0.3974
5	4-1-2023	6-30-2023	0.7681	0.7681
6	7-1-2023	9-30-2023	0.9564	0.9564
7	10-1-2023	12-31-2023	1.0516	1.0516

8	**1-1-2024**	**3-31-2024**	0.9945	0.9945
9	**4-1-2024**	**6-30-2024**	0.9910	0.9910
10	**7-1-2024**	**9-30-2024**	1.0019	1.0019
11	**10-1-2024**	**12-31-2024**	1.0055	1.0055
12	**1-1-2025**	**3-31-2025**	0.9385	0.9385
13	**4-1-2025**	**6-30-2025**	0.9457	0.9457
14	**7-1-2025**	**9-30-2025**	0.9561	0.9561
15	**10-1-2025**	**12-31-2025**	0.9594	0.9594
16	**1-1-2026**	**3-31-2026**	0.9315	0.9315
17	**4-1-2026**	**6-30-2026**	0.9388	0.9388
18	**7-1-2026**	**9-30-2026**	0.4944	0.4944
		Highest	1.1945	1.1945

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.8461	0.0515	4.4600	2.4000e-004		0.0248	0.0248		0.0248	0.0248	0.0000	7.3111	7.3111	6.9600e-003	0.0000	7.4851
Energy	0.0429	0.3666	0.1560	2.3400e-003		0.0296	0.0296		0.0296	0.0296	0.0000	1,167.3104	1,167.3104	0.0446	0.0153	1,172.9954
Mobile	0.3579	1.8574	4.1769	0.0197	2.3119	0.0101	2.3220	0.6190	9.3500e-003	0.6284	0.0000	1,822.4444	1,822.4444	0.0664	0.0000	1,824.1055
Waste						0.0000	0.0000		0.0000	0.0000	63.0449	0.0000	63.0449	3.7259	0.0000	156.1912
Water						0.0000	0.0000		0.0000	0.0000	10.0044	58.5968	68.6012	0.0373	0.0224	76.1948
Total	**3.2468**	**2.2755**	**8.7929**	**0.0223**	**2.3119**	**0.0645**	**2.3765**	**0.6190**	**0.0638**	**0.6828**	**73.0493**	**3,055.6626**	**3,128.7120**	**3.8812**	**0.0377**	**3,236.9718**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.8461	0.0515	4.4600	2.4000e-004		0.0248	0.0248		0.0248	0.0248	0.0000	7.3111	7.3111	6.9600e-003	0.0000	7.4851
Energy	0.0429	0.3666	0.1560	2.3400e-003		0.0296	0.0296		0.0296	0.0296	0.0000	1,167.3104	1,167.3104	0.0446	0.0153	1,172.9954
Mobile	0.3579	1.8574	4.1769	0.0197	2.3119	0.0101	2.3220	0.6190	9.3500e-003	0.6284	0.0000	1,822.4444	1,822.4444	0.0664	0.0000	1,824.1055
Waste						0.0000	0.0000		0.0000	0.0000	63.0449	0.0000	63.0449	3.7259	0.0000	156.1912
Water						0.0000	0.0000		0.0000	0.0000	10.0044	58.5968	68.6012	0.0373	0.0224	76.1948
Total	**3.2468**	**2.2755**	**8.7929**	**0.0223**	**2.3119**	**0.0645**	**2.3765**	**0.6190**	**0.0638**	**0.6828**	**73.0493**	**3,055.6626**	**3,128.7120**	**3.8812**	**0.0377**	**3,236.9718**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	1,585.9200
Vegetation Land Change	-1,057.2430
Total	**528.6770**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Improvements for Phase	Site Preparation	4/1/2022	9/30/2022	5	131	
2	Building Construction	Building Construction	4/1/2023	7/31/2026	5	870	
3	Paving	Paving	10/1/2022	12/30/2022	5	65	
4	Architectural Coating	Architectural Coating	8/1/2023	11/30/2026	5	870	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 1,197,990; Residential Outdoor: 399,330; Non-Residential Indoor: 10,500; Non-Residential Outdoor: 3,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Improvements for Phase	Rubber Tired Dozers	3	8.00	247	0.40
Improvements for Phase	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Improvements for Phase	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	310.00	73.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	62.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Improvements for Phase - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.1833	0.0000	1.1833	0.6505	0.0000	0.6505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2076	2.1670	1.2902	2.4900e-003		0.1056	0.1056		0.0972	0.0972	0.0000	219.0280	219.0280	0.0708	0.0000	220.7990
Total	**0.2076**	**2.1670**	**1.2902**	**2.4900e-003**	**1.1833**	**0.1056**	**1.2890**	**0.6505**	**0.0972**	**0.7476**	**0.0000**	**219.0280**	**219.0280**	**0.0708**	**0.0000**	**220.7990**

3.2 Improvements for Phase - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8200e-003	2.4000e-003	0.0274	8.0000e-005	8.6600e-003	6.0000e-005	8.7200e-003	2.3000e-003	5.0000e-005	2.3600e-003	0.0000	7.1455	7.1455	1.7000e-004	0.0000	7.1499
Total	**3.8200e-003**	**2.4000e-003**	**0.0274**	**8.0000e-005**	**8.6600e-003**	**6.0000e-005**	**8.7200e-003**	**2.3000e-003**	**5.0000e-005**	**2.3600e-003**	**0.0000**	**7.1455**	**7.1455**	**1.7000e-004**	**0.0000**	**7.1499**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5325	0.0000	0.5325	0.2927	0.0000	0.2927	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2076	2.1670	1.2902	2.4900e-003		0.1056	0.1056		0.0972	0.0972	0.0000	219.0278	219.0278	0.0708	0.0000	220.7987
Total	**0.2076**	**2.1670**	**1.2902**	**2.4900e-003**	**0.5325**	**0.1056**	**0.6381**	**0.2927**	**0.0972**	**0.3899**	**0.0000**	**219.0278**	**219.0278**	**0.0708**	**0.0000**	**220.7987**

3.2 Improvements for Phase - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8200e-003	2.4000e-003	0.0274	8.0000e-005	7.9900e-003	6.0000e-005	8.0400e-003	2.1400e-003	5.0000e-005	2.1900e-003	0.0000	7.1455	7.1455	1.7000e-004	0.0000	7.1499
Total	**3.8200e-003**	**2.4000e-003**	**0.0274**	**8.0000e-005**	**7.9900e-003**	**6.0000e-005**	**8.0400e-003**	**2.1400e-003**	**5.0000e-005**	**2.1900e-003**	**0.0000**	**7.1455**	**7.1455**	**1.7000e-004**	**0.0000**	**7.1499**

3.3 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1533	1.4025	1.5838	2.6300e-003		0.0682	0.0682		0.0642	0.0642	0.0000	226.0096	226.0096	0.0538	0.0000	227.3537
Total	**0.1533**	**1.4025**	**1.5838**	**2.6300e-003**		**0.0682**	**0.0682**		**0.0642**	**0.0642**	**0.0000**	**226.0096**	**226.0096**	**0.0538**	**0.0000**	**227.3537**

3.3 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0164	0.5843	0.1587	1.6900e-003	0.0416	8.4000e-004	0.0424	0.0120	8.0000e-004	0.0128	0.0000	162.4805	162.4805	8.3200e-003	0.0000	162.6886
Worker	0.0916	0.0553	0.6456	1.9500e-003	0.2220	1.4700e-003	0.2235	0.0590	1.3600e-003	0.0604	0.0000	176.3041	176.3041	4.0200e-003	0.0000	176.4046
Total	**0.1080**	**0.6396**	**0.8043**	**3.6400e-003**	**0.2636**	**2.3100e-003**	**0.2659**	**0.0711**	**2.1600e-003**	**0.0732**	**0.0000**	**338.7846**	**338.7846**	**0.0123**	**0.0000**	**339.0931**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1533	1.4025	1.5838	2.6300e-003		0.0682	0.0682		0.0642	0.0642	0.0000	226.0094	226.0094	0.0538	0.0000	227.3535
Total	**0.1533**	**1.4025**	**1.5838**	**2.6300e-003**		**0.0682**	**0.0682**		**0.0642**	**0.0642**	**0.0000**	**226.0094**	**226.0094**	**0.0538**	**0.0000**	**227.3535**

3.3 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0164	0.5843	0.1587	1.6900e-003	0.0390	8.4000e-004	0.0398	0.0114	8.0000e-004	0.0122	0.0000	162.4805	162.4805	8.3200e-003	0.0000	162.6886
Worker	0.0916	0.0553	0.6456	1.9500e-003	0.2047	1.4700e-003	0.2062	0.0548	1.3600e-003	0.0562	0.0000	176.3041	176.3041	4.0200e-003	0.0000	176.4046
Total	**0.1080**	**0.6396**	**0.8043**	**3.6400e-003**	**0.2437**	**2.3100e-003**	**0.2460**	**0.0662**	**2.1600e-003**	**0.0683**	**0.0000**	**338.7846**	**338.7846**	**0.0123**	**0.0000**	**339.0931**

3.3 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7223	303.7223	0.0718	0.0000	305.5179
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7223**	**303.7223**	**0.0718**	**0.0000**	**305.5179**

3.3 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0210	0.7701	0.1994	2.2500e-003	0.0559	1.0700e-003	0.0570	0.0162	1.0200e-003	0.0172	0.0000	217.0398	217.0398	0.0110	0.0000	217.3159
Worker	0.1157	0.0672	0.8033	2.5200e-003	0.2983	1.9400e-003	0.3002	0.0793	1.7800e-003	0.0811	0.0000	227.6721	227.6721	4.8700e-003	0.0000	227.7939
Total	**0.1367**	**0.8373**	**1.0027**	**4.7700e-003**	**0.3542**	**3.0100e-003**	**0.3572**	**0.0955**	**2.8000e-003**	**0.0983**	**0.0000**	**444.7119**	**444.7119**	**0.0159**	**0.0000**	**445.1098**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7220	303.7220	0.0718	0.0000	305.5175
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7220**	**303.7220**	**0.0718**	**0.0000**	**305.5175**

3.3 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0210	0.7701	0.1994	2.2500e-003	0.0523	1.0700e-003	0.0534	0.0153	1.0200e-003	0.0163	0.0000	217.0398	217.0398	0.0110	0.0000	217.3159
Worker	0.1157	0.0672	0.8033	2.5200e-003	0.2751	1.9400e-003	0.2770	0.0736	1.7800e-003	0.0754	0.0000	227.6721	227.6721	4.8700e-003	0.0000	227.7939
Total	**0.1367**	**0.8373**	**1.0027**	**4.7700e-003**	**0.3274**	**3.0100e-003**	**0.3304**	**0.0889**	**2.8000e-003**	**0.0917**	**0.0000**	**444.7119**	**444.7119**	**0.0159**	**0.0000**	**445.1098**

3.3 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

3.3 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0201	0.7529	0.1881	2.2300e-003	0.0557	1.0100e-003	0.0567	0.0161	9.7000e-004	0.0171	0.0000	214.9910	214.9910	0.0109	0.0000	215.2628
Worker	0.1088	0.0608	0.7412	2.4100e-003	0.2971	1.8900e-003	0.2990	0.0790	1.7400e-003	0.0808	0.0000	217.7227	217.7227	4.4000e-003	0.0000	217.8326
Total	**0.1289**	**0.8137**	**0.9293**	**4.6400e-003**	**0.3528**	**2.9000e-003**	**0.3557**	**0.0951**	**2.7100e-003**	**0.0978**	**0.0000**	**432.7137**	**432.7137**	**0.0153**	**0.0000**	**433.0954**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

3.3 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0201	0.7529	0.1881	2.2300e-003	0.0521	1.0100e-003	0.0532	0.0152	9.7000e-004	0.0162	0.0000	214.9910	214.9910	0.0109	0.0000	215.2628
Worker	0.1088	0.0608	0.7412	2.4100e-003	0.2740	1.8900e-003	0.2759	0.0734	1.7400e-003	0.0751	0.0000	217.7227	217.7227	4.4000e-003	0.0000	217.8326
Total	**0.1289**	**0.8137**	**0.9293**	**4.6400e-003**	**0.3261**	**2.9000e-003**	**0.3291**	**0.0886**	**2.7100e-003**	**0.0913**	**0.0000**	**432.7137**	**432.7137**	**0.0153**	**0.0000**	**433.0954**

3.3 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1039	0.9477	1.2224	2.0500e-003		0.0401	0.0401		0.0377	0.0377	0.0000	176.2588	176.2588	0.0414	0.0000	177.2946
Total	**0.1039**	**0.9477**	**1.2224**	**2.0500e-003**		**0.0401**	**0.0401**		**0.0377**	**0.0377**	**0.0000**	**176.2588**	**176.2588**	**0.0414**	**0.0000**	**177.2946**

3.3 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0113	0.4306	0.1045	1.2900e-003	0.0324	5.6000e-004	0.0330	9.3700e-003	5.3000e-004	9.9000e-003	0.0000	124.5302	124.5302	6.2600e-003	0.0000	124.6868
Worker	0.0601	0.0323	0.4018	1.3500e-003	0.1730	1.0700e-003	0.1741	0.0460	9.9000e-004	0.0470	0.0000	122.0854	122.0854	2.3300e-003	0.0000	122.1436
Total	**0.0713**	**0.4629**	**0.5063**	**2.6400e-003**	**0.2055**	**1.6300e-003**	**0.2071**	**0.0554**	**1.5200e-003**	**0.0569**	**0.0000**	**246.6156**	**246.6156**	**8.5900e-003**	**0.0000**	**246.8305**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1039	0.9477	1.2224	2.0500e-003		0.0401	0.0401		0.0377	0.0377	0.0000	176.2586	176.2586	0.0414	0.0000	177.2944
Total	**0.1039**	**0.9477**	**1.2224**	**2.0500e-003**		**0.0401**	**0.0401**		**0.0377**	**0.0377**	**0.0000**	**176.2586**	**176.2586**	**0.0414**	**0.0000**	**177.2944**

3.3 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0113	0.4306	0.1045	1.2900e-003	0.0304	5.6000e-004	0.0309	8.8600e-003	5.3000e-004	9.3900e-003	0.0000	124.5302	124.5302	6.2600e-003	0.0000	124.6868
Worker	0.0601	0.0323	0.4018	1.3500e-003	0.1596	1.0700e-003	0.1606	0.0427	9.9000e-004	0.0437	0.0000	122.0854	122.0854	2.3300e-003	0.0000	122.1436
Total	**0.0713**	**0.4629**	**0.5063**	**2.6400e-003**	**0.1899**	**1.6300e-003**	**0.1916**	**0.0516**	**1.5200e-003**	**0.0531**	**0.0000**	**246.6156**	**246.6156**	**8.5900e-003**	**0.0000**	**246.8305**

3.4 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0358	0.3616	0.4739	7.4000e-004		0.0185	0.0185		0.0170	0.0170	0.0000	65.0896	65.0896	0.0211	0.0000	65.6158
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0358**	**0.3616**	**0.4739**	**7.4000e-004**		**0.0185**	**0.0185**		**0.0170**	**0.0170**	**0.0000**	**65.0896**	**65.0896**	**0.0211**	**0.0000**	**65.6158**

3.4 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0358	0.3616	0.4739	7.4000e-004		0.0185	0.0185		0.0170	0.0170	0.0000	65.0895	65.0895	0.0211	0.0000	65.6158
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0358**	**0.3616**	**0.4739**	**7.4000e-004**		**0.0185**	**0.0185**		**0.0170**	**0.0170**	**0.0000**	**65.0895**	**65.0895**	**0.0211**	**0.0000**	**65.6158**

3.4 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3509					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.0710	0.0987	1.6000e-004		3.8600e-003	3.8600e-003		3.8600e-003	3.8600e-003	0.0000	13.9152	13.9152	8.3000e-004	0.0000	13.9361
Total	**0.3613**	**0.0710**	**0.0987**	**1.6000e-004**		**3.8600e-003**	**3.8600e-003**		**3.8600e-003**	**3.8600e-003**	**0.0000**	**13.9152**	**13.9152**	**8.3000e-004**	**0.0000**	**13.9361**

3.5 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0102	6.1900e-003	0.0722	2.2000e-004	0.0463	1.6000e-004	0.0464	0.0119	1.5000e-004	0.0120	0.0000	19.7099	19.7099	4.5000e-004	0.0000	19.7211
Total	**0.0102**	**6.1900e-003**	**0.0722**	**2.2000e-004**	**0.0463**	**1.6000e-004**	**0.0464**	**0.0119**	**1.5000e-004**	**0.0120**	**0.0000**	**19.7099**	**19.7099**	**4.5000e-004**	**0.0000**	**19.7211**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3509					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.0710	0.0987	1.6000e-004		3.8600e-003	3.8600e-003		3.8600e-003	3.8600e-003	0.0000	13.9152	13.9152	8.3000e-004	0.0000	13.9360
Total	**0.3613**	**0.0710**	**0.0987**	**1.6000e-004**		**3.8600e-003**	**3.8600e-003**		**3.8600e-003**	**3.8600e-003**	**0.0000**	**13.9152**	**13.9152**	**8.3000e-004**	**0.0000**	**13.9360**

3.5 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0102	6.1900e-003	0.0722	2.2000e-004	0.0424	1.6000e-004	0.0426	0.0109	1.5000e-004	0.0111	0.0000	19.7099	19.7099	4.5000e-004	0.0000	19.7211
Total	**0.0102**	**6.1900e-003**	**0.0722**	**2.2000e-004**	**0.0424**	**1.6000e-004**	**0.0426**	**0.0109**	**1.5000e-004**	**0.0111**	**0.0000**	**19.7099**	**19.7099**	**4.5000e-004**	**0.0000**	**19.7211**

3.5 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8434					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0237	0.1597	0.2371	3.9000e-004		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	33.4476	33.4476	1.8800e-003	0.0000	33.4947
Total	**0.8671**	**0.1597**	**0.2371**	**3.9000e-004**		**7.9800e-003**	**7.9800e-003**		**7.9800e-003**	**7.9800e-003**	**0.0000**	**33.4476**	**33.4476**	**1.8800e-003**	**0.0000**	**33.4947**

3.5 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0231	0.0134	0.1607	5.0000e-004	0.1112	3.9000e-004	0.1116	0.0285	3.6000e-004	0.0289	0.0000	45.5344	45.5344	9.7000e-004	0.0000	45.5588
Total	**0.0231**	**0.0134**	**0.1607**	**5.0000e-004**	**0.1112**	**3.9000e-004**	**0.1116**	**0.0285**	**3.6000e-004**	**0.0289**	**0.0000**	**45.5344**	**45.5344**	**9.7000e-004**	**0.0000**	**45.5588**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8434					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0237	0.1597	0.2371	3.9000e-004		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	33.4476	33.4476	1.8800e-003	0.0000	33.4947
Total	**0.8671**	**0.1597**	**0.2371**	**3.9000e-004**		**7.9800e-003**	**7.9800e-003**		**7.9800e-003**	**7.9800e-003**	**0.0000**	**33.4476**	**33.4476**	**1.8800e-003**	**0.0000**	**33.4947**

3.5 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0231	0.0134	0.1607	5.0000e-004	0.1019	3.9000e-004	0.1023	0.0262	3.6000e-004	0.0266	0.0000	45.5344	45.5344	9.7000e-004	0.0000	45.5588
Total	**0.0231**	**0.0134**	**0.1607**	**5.0000e-004**	**0.1019**	**3.9000e-004**	**0.1023**	**0.0262**	**3.6000e-004**	**0.0266**	**0.0000**	**45.5344**	**45.5344**	**9.7000e-004**	**0.0000**	**45.5588**

3.5 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8402					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3200	33.3200	1.8200e-003	0.0000	33.3654
Total	**0.8625**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3200**	**33.3200**	**1.8200e-003**	**0.0000**	**33.3654**

3.5 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0218	0.0122	0.1483	4.8000e-004	0.1108	3.8000e-004	0.1112	0.0284	3.5000e-004	0.0288	0.0000	43.5445	43.5445	8.8000e-004	0.0000	43.5665
Total	**0.0218**	**0.0122**	**0.1483**	**4.8000e-004**	**0.1108**	**3.8000e-004**	**0.1112**	**0.0284**	**3.5000e-004**	**0.0288**	**0.0000**	**43.5445**	**43.5445**	**8.8000e-004**	**0.0000**	**43.5665**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8402					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3199	33.3199	1.8200e-003	0.0000	33.3654
Total	**0.8625**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3199**	**33.3199**	**1.8200e-003**	**0.0000**	**33.3654**

3.5 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0218	0.0122	0.1483	4.8000e-004	0.1015	3.8000e-004	0.1019	0.0261	3.5000e-004	0.0265	0.0000	43.5445	43.5445	8.8000e-004	0.0000	43.5665
Total	**0.0218**	**0.0122**	**0.1483**	**4.8000e-004**	**0.1015**	**3.8000e-004**	**0.1019**	**0.0261**	**3.5000e-004**	**0.0265**	**0.0000**	**43.5445**	**43.5445**	**8.8000e-004**	**0.0000**	**43.5665**

3.5 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7662					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0203	0.1363	0.2153	3.5000e-004		6.1300e-003	6.1300e-003		6.1300e-003	6.1300e-003	0.0000	30.3837	30.3837	1.6600e-003	0.0000	30.4252
Total	**0.7865**	**0.1363**	**0.2153**	**3.5000e-004**		**6.1300e-003**	**6.1300e-003**		**6.1300e-003**	**6.1300e-003**	**0.0000**	**30.3837**	**30.3837**	**1.6600e-003**	**0.0000**	**30.4252**

3.5 Architectural Coating - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0188	0.0101	0.1258	4.2000e-004	0.1010	3.4000e-004	0.1014	0.0259	3.1000e-004	0.0262	0.0000	38.2320	38.2320	7.3000e-004	0.0000	38.2503
Total	**0.0188**	**0.0101**	**0.1258**	**4.2000e-004**	**0.1010**	**3.4000e-004**	**0.1014**	**0.0259**	**3.1000e-004**	**0.0262**	**0.0000**	**38.2320**	**38.2320**	**7.3000e-004**	**0.0000**	**38.2503**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7662					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0203	0.1363	0.2153	3.5000e-004		6.1300e-003	6.1300e-003		6.1300e-003	6.1300e-003	0.0000	30.3837	30.3837	1.6600e-003	0.0000	30.4251
Total	**0.7865**	**0.1363**	**0.2153**	**3.5000e-004**		**6.1300e-003**	**6.1300e-003**		**6.1300e-003**	**6.1300e-003**	**0.0000**	**30.3837**	**30.3837**	**1.6600e-003**	**0.0000**	**30.4251**

3.5 Architectural Coating - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0188	0.0101	0.1258	4.2000e-004	0.0926	3.4000e-004	0.0929	0.0238	3.1000e-004	0.0242	0.0000	38.2320	38.2320	7.3000e-004	0.0000	38.2503
Total	**0.0188**	**0.0101**	**0.1258**	**4.2000e-004**	**0.0926**	**3.4000e-004**	**0.0929**	**0.0238**	**3.1000e-004**	**0.0242**	**0.0000**	**38.2320**	**38.2320**	**7.3000e-004**	**0.0000**	**38.2503**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3579	1.8574	4.1769	0.0197	2.3119	0.0101	2.3220	0.6190	9.3500e-003	0.6284	0.0000	1,822.4444	1,822.4444	0.0664	0.0000	1,824.1055
Unmitigated	0.3579	1.8574	4.1769	0.0197	2.3119	0.0101	2.3220	0.6190	9.3500e-003	0.6284	0.0000	1,822.4444	1,822.4444	0.0664	0.0000	1,824.1055

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	2.91	35.04	25.78	19,864	19,864
City Park	4.14	49.82	36.66	28,248	28,248
Retirement Community	477.60	403.97	388.05	1,165,754	1,165,754
Retirement Community	91.20	77.14	74.10	222,606	222,606
Single Family Housing	1,875.44	1,952.27	1698.14	4,775,752	4,775,752
Total	2,451.29	2,518.24	2,222.73	6,212,225	6,212,225

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	742.7036	742.7036	0.0365	7.5500e-003	745.8654
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	742.7036	742.7036	0.0365	7.5500e-003	745.8654
NaturalGas Mitigated	0.0429	0.3666	0.1560	2.3400e-003		0.0296	0.0296		0.0296	0.0296	0.0000	424.6068	424.6068	8.1400e-003	7.7800e-003	427.1300
NaturalGas Unmitigated	0.0429	0.3666	0.1560	2.3400e-003		0.0296	0.0296		0.0296	0.0296	0.0000	424.6068	424.6068	8.1400e-003	7.7800e-003	427.1300

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	2.40765e+006	0.0130	0.1109	0.0472	7.1000e-004		8.9700e-003	8.9700e-003		8.9700e-003	8.9700e-003	0.0000	128.4811	128.4811	2.4600e-003	2.3600e-003	129.2446
Retirement Community	459751	2.4800e-003	0.0212	9.0100e-003	1.4000e-004		1.7100e-003	1.7100e-003		1.7100e-003	1.7100e-003	0.0000	24.5341	24.5341	4.7000e-004	4.5000e-004	24.6799
Single Family Housing	5.08943e+006	0.0274	0.2345	0.0998	1.5000e-003		0.0190	0.0190		0.0190	0.0190	0.0000	271.5916	271.5916	5.2100e-003	4.9800e-003	273.2055
Total		**0.0429**	**0.3666**	**0.1560**	**2.3500e-003**		**0.0296**	**0.0296**		**0.0296**	**0.0296**	**0.0000**	**424.6068**	**424.6068**	**8.1400e-003**	**7.7900e-003**	**427.1300**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	2.40765e+006	0.0130	0.1109	0.0472	7.1000e-004		8.9700e-003	8.9700e-003		8.9700e-003	8.9700e-003	0.0000	128.4811	128.4811	2.4600e-003	2.3600e-003	129.2446
Retirement Community	459751	2.4800e-003	0.0212	9.0100e-003	1.4000e-004		1.7100e-003	1.7100e-003		1.7100e-003	1.7100e-003	0.0000	24.5341	24.5341	4.7000e-004	4.5000e-004	24.6799
Single Family Housing	5.08943e+006	0.0274	0.2345	0.0998	1.5000e-003		0.0190	0.0190		0.0190	0.0190	0.0000	271.5916	271.5916	5.2100e-003	4.9800e-003	273.2055
Total		**0.0429**	**0.3666**	**0.1560**	**2.3500e-003**		**0.0296**	**0.0296**		**0.0296**	**0.0296**	**0.0000**	**424.6068**	**424.6068**	**8.1400e-003**	**7.7900e-003**	**427.1300**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Retirement Community	178029	47.6691	2.3400e-003	4.8000e-004	47.8721
Retirement Community	932311	249.6357	0.0123	2.5400e-003	250.6984
Single Family Housing	1.66342e+006	445.3988	0.0219	4.5300e-003	447.2949
Total		**742.7036**	**0.0365**	**7.5500e-003**	**745.8654**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Retirement Community	178029	47.6691	2.3400e-003	4.8000e-004	47.8721
Retirement Community	932311	249.6357	0.0123	2.5400e-003	250.6984
Single Family Housing	1.66342e+006	445.3988	0.0219	4.5300e-003	447.2949
Total		**742.7036**	**0.0365**	**7.5500e-003**	**745.8654**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.8461	0.0515	4.4600	2.4000e-004		0.0248	0.0248		0.0248	0.0248	0.0000	7.3111	7.3111	6.9600e-003	0.0000	7.4851
Unmitigated	2.8461	0.0515	4.4600	2.4000e-004		0.0248	0.0248		0.0248	0.0248	0.0000	7.3111	7.3111	6.9600e-003	0.0000	7.4851

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3734					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.3393					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1334	0.0515	4.4600	2.4000e-004		0.0248	0.0248		0.0248	0.0248	0.0000	7.3111	7.3111	6.9600e-003	0.0000	7.4851
Total	**2.8461**	**0.0515**	**4.4600**	**2.4000e-004**		**0.0248**	**0.0248**		**0.0248**	**0.0248**	**0.0000**	**7.3111**	**7.3111**	**6.9600e-003**	**0.0000**	**7.4851**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3734					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.3393					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1334	0.0515	4.4600	2.4000e-004		0.0248	0.0248		0.0248	0.0248	0.0000	7.3111	7.3111	6.9600e-003	0.0000	7.4851
Total	**2.8461**	**0.0515**	**4.4600**	**2.4000e-004**		**0.0248**	**0.0248**		**0.0248**	**0.0248**	**0.0000**	**7.3111**	**7.3111**	**6.9600e-003**	**0.0000**	**7.4851**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	68.6012	0.0373	0.0224	76.1948
Unmitigated	68.6012	0.0373	0.0224	76.1948

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.44423	4.1650	2.0000e-004	4.0000e-005	4.1827
Retirement Community	15.4415 / 9.73486	35.1875	0.0203	0.0122	39.3246
Single Family Housing	12.8353 / 8.09185	29.2487	0.0168	0.0101	32.6875
Total		**68.6012**	**0.0373**	**0.0224**	**76.1948**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.44423	4.1650	2.0000e-004	4.0000e-005	4.1827
Retirement Community	15.4415 / 9.73486	35.1875	0.0203	0.0122	39.3246
Single Family Housing	12.8353 / 8.09185	29.2487	0.0168	0.0101	32.6875
Total		**68.6012**	**0.0373**	**0.0224**	**76.1948**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	63.0449	3.7259	0.0000	156.1912
Unmitigated	63.0449	3.7259	0.0000	156.1912

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.32	0.0650	3.8400e-003	0.0000	0.1609
Retirement Community	109.02	22.1301	1.3079	0.0000	54.8263
Single Family Housing	201.24	40.8499	2.4142	0.0000	101.2039
Total		**63.0449**	**3.7259**	**0.0000**	**156.1912**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.32	0.0650	3.8400e-003	0.0000	0.1609
Retirement Community	109.02	22.1301	1.3079	0.0000	54.8263
Single Family Housing	201.24	40.8499	2.4142	0.0000	101.2039
Total		**63.0449**	**3.7259**	**0.0000**	**156.1912**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	528.6770	0.0000	0.0000	528.6770

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	530.1 / 284.8	-1,057.2430	0.0000	0.0000	-1,057.2430
Total		**-1,057.2430**	**0.0000**	**0.0000**	**-1,057.2430**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	2240	1,585.9200	0.0000	0.0000	1,585.9200
Total		**1,585.9200**	**0.0000**	**0.0000**	**1,585.9200**

The Ranch - City of Rancho Cordova (Construction Only - Phase 2)

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.54	Acre	1.54	67,082.40	0
City Park	2.19	Acre	2.19	95,396.40	0
Retirement Community	199.00	Dwelling Unit	39.80	199,000.00	414
Single Family Housing	197.00	Dwelling Unit	63.96	354,600.00	559
Retirement Community	38.00	Dwelling Unit	7.60	38,000.00	77

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Estimated construction state date of April 2022 (provided by Applicant).

Land Use - This model run provides construction emissions only.

Construction Phase - Phase 2

Off-road Equipment -

Off-road Equipment - For building construction, assumes 1 crane, 2 forklifts, 1 generator set, 1 tractor/loader/backhoe, and 1 welder (as provided by the applicant)

Off-road Equipment -
Off-road Equipment - D

Trips and VMT - -

Grading - No grading/soil export assumed for Phase 2 (already captured during Phase 1)

Architectural Coating - 75 g/L as provided by SMAQMD (average as provided by the air district).

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust -

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 28.33% - reflects project person/du value (2.523) vs. statewide avg. (2.97) and latest statewide data (ARB). Parking Degreaser EF red. by 57.5% (corrects for walking paths modeled as 'parking lot').

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%. NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Fleet Mix -

The Ranch - City of Rancho Cordova (Construction Only - Phase 2) - Sacramento County, Summer

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	75.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	220.00	870.00
tblConstructionPhase	NumDays	3,100.00	870.00
tblConstructionPhase	NumDays	220.00	65.00
tblConstructionPhase	NumDays	120.00	131.00
tblConstructionPhase	PhaseEndDate	4/10/2036	11/30/2026
tblConstructionPhase	PhaseEndDate	8/3/2034	7/31/2026
tblConstructionPhase	PhaseEndDate	6/7/2035	12/30/2022
tblConstructionPhase	PhaseEndDate	9/15/2022	9/30/2022
tblConstructionPhase	PhaseStartDate	6/8/2035	8/1/2023
tblConstructionPhase	PhaseStartDate	9/16/2022	4/1/2023
tblConstructionPhase	PhaseStartDate	8/4/2034	10/1/2022
tblLandUse	Population	531.00	414.00
tblLandUse	Population	526.00	559.00
tblLandUse	Population	101.00	77.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	62.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.2375	33.1167	20.1937	0.0394	18.2032	1.6135	19.8167	9.9670	1.4844	11.4514	0.0000	3,819.0803	3,819.0803	1.1955	0.0000	3,848.9665
2023	9.6689	22.2187	29.0187	0.0740	3.6788	0.7970	4.4758	0.9776	0.7539	1.7315	0.0000	7,339.4640	7,339.4640	0.7768	0.0000	7,358.8843
2024	9.4697	21.0234	28.1582	0.0728	3.6788	0.6999	4.3787	0.9776	0.6617	1.6393	0.0000	7,226.1140	7,226.1140	0.7652	0.0000	7,245.2446
2025	9.2801	19.8189	27.3649	0.0717	3.6787	0.6040	4.2827	0.9776	0.5710	1.5486	0.0000	7,114.4446	7,114.4446	0.7551	0.0000	7,133.3226
2026	9.2128	19.6745	26.7523	0.0707	3.6787	0.6031	4.2818	0.9776	0.5701	1.5477	0.0000	7,013.7249	7,013.7249	0.7497	0.0000	7,032.4674
Maximum	**9.6689**	**33.1167**	**29.0187**	**0.0740**	**18.2032**	**1.6135**	**19.8167**	**9.9670**	**1.4844**	**11.4514**	**0.0000**	**7,339.4640**	**7,339.4640**	**1.1955**	**0.0000**	**7,358.8843**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.2375	33.1167	20.1937	0.0394	8.2560	1.6135	9.8695	4.5025	1.4844	5.9869	0.0000	3,819.0803	3,819.0803	1.1955	0.0000	3,848.9665
2023	9.6689	22.2187	29.0187	0.0740	3.3924	0.7970	4.1894	0.9073	0.7539	1.6612	0.0000	7,339.4640	7,339.4640	0.7768	0.0000	7,358.8843
2024	9.4697	21.0234	28.1582	0.0728	3.3923	0.6999	4.0922	0.9073	0.6617	1.5690	0.0000	7,226.1140	7,226.1140	0.7652	0.0000	7,245.2446
2025	9.2801	19.8189	27.3649	0.0717	3.3923	0.6040	3.9963	0.9073	0.5710	1.4782	0.0000	7,114.4446	7,114.4446	0.7551	0.0000	7,133.3226
2026	9.2128	19.6745	26.7523	0.0707	3.3923	0.6031	3.9954	0.9073	0.5701	1.4774	0.0000	7,013.7249	7,013.7249	0.7497	0.0000	7,032.4674
Maximum	**9.6689**	**33.1167**	**29.0187**	**0.0740**	**8.2560**	**1.6135**	**9.8695**	**4.5025**	**1.4844**	**5.9869**	**0.0000**	**7,339.4640**	**7,339.4640**	**1.1955**	**0.0000**	**7,358.8843**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**33.70**	**0.00**	**29.79**	**41.40**	**0.00**	**32.07**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	15.9311	0.4116	35.6801	1.8900e-003		0.1986	0.1986		0.1986	0.1986	0.0000	64.4725	64.4725	0.0614	0.0000	66.0069
Energy	0.2351	2.0090	0.8549	0.0128		0.1624	0.1624		0.1624	0.1624		2,564.6513	2,564.6513	0.0492	0.0470	2,579.8917
Mobile	2.6943	10.6629	27.7980	0.1244	14.0269	0.0590	14.0859	3.7450	0.0548	3.7998		12,673.3024	12,673.3024	0.4341		12,684.1540
Total	**18.8604**	**13.0835**	**64.3329**	**0.1391**	**14.0269**	**0.4200**	**14.4469**	**3.7450**	**0.4158**	**4.1607**	**0.0000**	**15,302.4262**	**15,302.4262**	**0.5446**	**0.0470**	**15,330.0526**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	15.9311	0.4116	35.6801	1.8900e-003		0.1986	0.1986		0.1986	0.1986	0.0000	64.4725	64.4725	0.0614	0.0000	66.0069
Energy	0.2351	2.0090	0.8549	0.0128		0.1624	0.1624		0.1624	0.1624		2,564.6513	2,564.6513	0.0492	0.0470	2,579.8917
Mobile	2.6943	10.6629	27.7980	0.1244	14.0269	0.0590	14.0859	3.7450	0.0548	3.7998		12,673.3024	12,673.3024	0.4341		12,684.1540
Total	**18.8604**	**13.0835**	**64.3329**	**0.1391**	**14.0269**	**0.4200**	**14.4469**	**3.7450**	**0.4158**	**4.1607**	**0.0000**	**15,302.4262**	**15,302.4262**	**0.5446**	**0.0470**	**15,330.0526**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Improvements for Phase	Site Preparation	4/1/2022	9/30/2022	5	131	
2	Building Construction	Building Construction	4/1/2023	7/31/2026	5	870	
3	Paving	Paving	10/1/2022	12/30/2022	5	65	
4	Architectural Coating	Architectural Coating	8/1/2023	11/30/2026	5	870	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 1,197,990; Residential Outdoor: 399,330; Non-Residential Indoor: 10,500; Non-Residential Outdoor: 3,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Improvements for Phase	Rubber Tired Dozers	3	8.00	247	0.40
Improvements for Phase	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Improvements for Phase	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	310.00	73.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	62.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Improvements for Phase - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**18.0663**	**1.6126**	**19.6788**	**9.9307**	**1.4836**	**11.4143**		**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

3.2 Improvements for Phase - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0673	0.0332	0.4959	1.3400e-003	0.1369	9.0000e-004	0.1378	0.0363	8.3000e-004	0.0372		133.0184	133.0184	3.3000e-003		133.1009
Total	**0.0673**	**0.0332**	**0.4959**	**1.3400e-003**	**0.1369**	**9.0000e-004**	**0.1378**	**0.0363**	**8.3000e-004**	**0.0372**		**133.0184**	**133.0184**	**3.3000e-003**		**133.1009**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**8.1298**	**1.6126**	**9.7424**	**4.4688**	**1.4836**	**5.9524**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

3.2 Improvements for Phase - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0673	0.0332	0.4959	1.3400e-003	0.1262	9.0000e-004	0.1271	0.0337	8.3000e-004	0.0345		133.0184	133.0184	3.3000e-003		133.1009
Total	**0.0673**	**0.0332**	**0.4959**	**1.3400e-003**	**0.1262**	**9.0000e-004**	**0.1271**	**0.0337**	**8.3000e-004**	**0.0345**		**133.0184**	**133.0184**	**3.3000e-003**		**133.1009**

3.3 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

3.3 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1654	5.9129	1.5302	0.0175	0.4392	8.3100e-003	0.4475	0.1264	7.9400e-003	0.1343		1,857.1115	1,857.1115	0.0910		1,859.3863
Worker	1.0840	0.5149	7.8611	0.0221	2.3582	0.0151	2.3733	0.6255	0.0139	0.6395		2,204.7455	2,204.7455	0.0509		2,206.0191
Total	**1.2494**	**6.4278**	**9.3913**	**0.0396**	**2.7973**	**0.0234**	**2.8208**	**0.7519**	**0.0219**	**0.7738**		**4,061.8569**	**4,061.8569**	**0.1419**		**4,065.4054**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

3.3 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1654	5.9129	1.5302	0.0175	0.4109	8.3100e-003	0.4192	0.1194	7.9400e-003	0.1274		1,857.1115	1,857.1115	0.0910		1,859.3863
Worker	1.0840	0.5149	7.8611	0.0221	2.1737	0.0151	2.1889	0.5803	0.0139	0.5942		2,204.7455	2,204.7455	0.0509		2,206.0191
Total	**1.2494**	**6.4278**	**9.3913**	**0.0396**	**2.5847**	**0.0234**	**2.6081**	**0.6997**	**0.0219**	**0.7216**		**4,061.8569**	**4,061.8569**	**0.1419**		**4,065.4054**

3.3 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

3.3 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1576	5.8021	1.4303	0.0174	0.4391	7.9000e-003	0.4470	0.1264	7.5600e-003	0.1339		1,846.2539	1,846.2539	0.0899		1,848.5009
Worker	1.0179	0.4655	7.2924	0.0213	2.3582	0.0148	2.3730	0.6255	0.0136	0.6392		2,118.9276	2,118.9276	0.0460		2,120.0765
Total	**1.1755**	**6.2677**	**8.7228**	**0.0387**	**2.7973**	**0.0227**	**2.8200**	**0.7519**	**0.0212**	**0.7731**		**3,965.1815**	**3,965.1815**	**0.1358**		**3,968.5774**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

3.3 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1576	5.8021	1.4303	0.0174	0.4109	7.9000e-003	0.4188	0.1194	7.5600e-003	0.1270		1,846.2539	1,846.2539	0.0899		1,848.5009
Worker	1.0179	0.4655	7.2924	0.0213	2.1737	0.0148	2.1885	0.5803	0.0136	0.5939		2,118.9276	2,118.9276	0.0460		2,120.0765
Total	**1.1755**	**6.2677**	**8.7228**	**0.0387**	**2.5846**	**0.0227**	**2.6073**	**0.6997**	**0.0212**	**0.7209**		**3,965.1815**	**3,965.1815**	**0.1358**		**3,968.5774**

3.3 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.3 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1512	5.6963	1.3543	0.0173	0.4391	7.5100e-003	0.4466	0.1263	7.1800e-003	0.1335		1,835.7441	1,835.7441	0.0888		1,837.9646
Worker	0.9603	0.4229	6.7640	0.0204	2.3582	0.0145	2.3727	0.6255	0.0134	0.6389		2,033.9818	2,033.9818	0.0417		2,035.0234
Total	**1.1114**	**6.1192**	**8.1183**	**0.0377**	**2.7973**	**0.0220**	**2.8193**	**0.7519**	**0.0206**	**0.7724**		**3,869.7259**	**3,869.7259**	**0.1305**		**3,872.9880**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.3 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1512	5.6963	1.3543	0.0173	0.4109	7.5100e-003	0.4184	0.1194	7.1800e-003	0.1266		1,835.7441	1,835.7441	0.0888		1,837.9646
Worker	0.9603	0.4229	6.7640	0.0204	2.1737	0.0145	2.1883	0.5803	0.0134	0.5936		2,033.9818	2,033.9818	0.0417		2,035.0234
Total	**1.1114**	**6.1192**	**8.1183**	**0.0377**	**2.5846**	**0.0220**	**2.6066**	**0.6997**	**0.0206**	**0.7202**		**3,869.7259**	**3,869.7259**	**0.1305**		**3,872.9880**

3.3 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.3 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1455	5.5957	1.2927	0.0172	0.4390	7.1200e-003	0.4462	0.1263	6.8100e-003	0.1331		1,825.7505	1,825.7505	0.0879		1,827.9471
Worker	0.9090	0.3864	6.3049	0.0197	2.3582	0.0141	2.3723	0.6255	0.0130	0.6385		1,958.3767	1,958.3767	0.0380		1,959.3253
Total	**1.0544**	**5.9820**	**7.5975**	**0.0368**	**2.7972**	**0.0212**	**2.8184**	**0.7519**	**0.0198**	**0.7716**		**3,784.1271**	**3,784.1271**	**0.1258**		**3,787.2724**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.3 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1455	5.5957	1.2927	0.0172	0.4108	7.1200e-003	0.4179	0.1194	6.8100e-003	0.1262		1,825.7505	1,825.7505	0.0879		1,827.9471
Worker	0.9090	0.3864	6.3049	0.0197	2.1737	0.0141	2.1878	0.5803	0.0130	0.5932		1,958.3767	1,958.3767	0.0380		1,959.3253
Total	**1.0544**	**5.9820**	**7.5975**	**0.0368**	**2.5845**	**0.0212**	**2.6058**	**0.6997**	**0.0198**	**0.7194**		**3,784.1271**	**3,784.1271**	**0.1258**		**3,787.2724**

3.4 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.4 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.4 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.5 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.4383					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**6.6300**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.5 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2168	0.1030	1.5722	4.4300e-003	0.8815	3.0300e-003	0.8845	0.2257	2.7900e-003	0.2285		440.9491	440.9491	0.0102		441.2038
Total	**0.2168**	**0.1030**	**1.5722**	**4.4300e-003**	**0.8815**	**3.0300e-003**	**0.8845**	**0.2257**	**2.7900e-003**	**0.2285**		**440.9491**	**440.9491**	**0.0102**		**441.2038**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.4383					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**6.6300**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.5 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2168	0.1030	1.5722	4.4300e-003	0.8077	3.0300e-003	0.8107	0.2076	2.7900e-003	0.2104		440.9491	440.9491	0.0102		441.2038
Total	**0.2168**	**0.1030**	**1.5722**	**4.4300e-003**	**0.8077**	**3.0300e-003**	**0.8107**	**0.2076**	**2.7900e-003**	**0.2104**		**440.9491**	**440.9491**	**0.0102**		**441.2038**

3.5 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.4383					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**6.6191**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.5 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2036	0.0931	1.4585	4.2500e-003	0.8815	2.9600e-003	0.8845	0.2257	2.7200e-003	0.2284		423.7855	423.7855	9.1900e-003		424.0153
Total	**0.2036**	**0.0931**	**1.4585**	**4.2500e-003**	**0.8815**	**2.9600e-003**	**0.8845**	**0.2257**	**2.7200e-003**	**0.2284**		**423.7855**	**423.7855**	**9.1900e-003**		**424.0153**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.4383					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**6.6191**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.5 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2036	0.0931	1.4585	4.2500e-003	0.8077	2.9600e-003	0.8107	0.2076	2.7200e-003	0.2103		423.7855	423.7855	9.1900e-003		424.0153
Total	**0.2036**	**0.0931**	**1.4585**	**4.2500e-003**	**0.8077**	**2.9600e-003**	**0.8107**	**0.2076**	**2.7200e-003**	**0.2103**		**423.7855**	**423.7855**	**9.1900e-003**		**424.0153**

3.5 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.4383					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**6.6092**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.5 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1921	0.0846	1.3528	4.0800e-003	0.8815	2.9000e-003	0.8844	0.2257	2.6700e-003	0.2284		406.7964	406.7964	8.3300e-003		407.0047
Total	**0.1921**	**0.0846**	**1.3528**	**4.0800e-003**	**0.8815**	**2.9000e-003**	**0.8844**	**0.2257**	**2.6700e-003**	**0.2284**		**406.7964**	**406.7964**	**8.3300e-003**		**407.0047**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.4383					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**6.6092**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.5 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1921	0.0846	1.3528	4.0800e-003	0.8077	2.9000e-003	0.8106	0.2076	2.6700e-003	0.2103		406.7964	406.7964	8.3300e-003		407.0047
Total	**0.1921**	**0.0846**	**1.3528**	**4.0800e-003**	**0.8077**	**2.9000e-003**	**0.8106**	**0.2076**	**2.6700e-003**	**0.2103**		**406.7964**	**406.7964**	**8.3300e-003**		**407.0047**

3.5 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.4383					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**6.6092**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.5 Architectural Coating - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1818	0.0773	1.2610	3.9300e-003	0.8815	2.8200e-003	0.8843	0.2257	2.5900e-003	0.2283		391.6753	391.6753	7.5900e-003		391.8651
Total	**0.1818**	**0.0773**	**1.2610**	**3.9300e-003**	**0.8815**	**2.8200e-003**	**0.8843**	**0.2257**	**2.5900e-003**	**0.2283**		**391.6753**	**391.6753**	**7.5900e-003**		**391.8651**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.4383					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**6.6092**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.5 Architectural Coating - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1818	0.0773	1.2610	3.9300e-003	0.8077	2.8200e-003	0.8105	0.2076	2.5900e-003	0.2102		391.6753	391.6753	7.5900e-003		391.8651
Total	**0.1818**	**0.0773**	**1.2610**	**3.9300e-003**	**0.8077**	**2.8200e-003**	**0.8105**	**0.2076**	**2.5900e-003**	**0.2102**		**391.6753**	**391.6753**	**7.5900e-003**		**391.8651**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.6943	10.6629	27.7980	0.1244	14.0269	0.0590	14.0859	3.7450	0.0548	3.7998		12,673.3024	12,673.3024	0.4341		12,684.1540
Unmitigated	2.6943	10.6629	27.7980	0.1244	14.0269	0.0590	14.0859	3.7450	0.0548	3.7998		12,673.3024	12,673.3024	0.4341		12,684.1540

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	2.91	35.04	25.78	19,864	19,864
City Park	4.14	49.82	36.66	28,248	28,248
Retirement Community	477.60	403.97	388.05	1,165,754	1,165,754
Retirement Community	91.20	77.14	74.10	222,606	222,606
Single Family Housing	1,875.44	1,952.27	1698.14	4,775,752	4,775,752
Total	2,451.29	2,518.24	2,222.73	6,212,225	6,212,225

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2351	2.0090	0.8549	0.0128		0.1624	0.1624		0.1624	0.1624		2,564.6513	2,564.6513	0.0492	0.0470	2,579.8917
NaturalGas Unmitigated	0.2351	2.0090	0.8549	0.0128		0.1624	0.1624		0.1624	0.1624		2,564.6513	2,564.6513	0.0492	0.0470	2,579.8917

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	1259.59	0.0136	0.1161	0.0494	7.4000e-004		9.3900e-003	9.3900e-003		9.3900e-003	9.3900e-003		148.1874	148.1874	2.8400e-003	2.7200e-003	149.0680
Retirement Community	6596.29	0.0711	0.6079	0.2587	3.8800e-003		0.0492	0.0492		0.0492	0.0492		776.0339	776.0339	0.0149	0.0142	780.6455
Single Family Housing	13943.7	0.1504	1.2850	0.5468	8.2000e-003		0.1039	0.1039		0.1039	0.1039		1,640.4300	1,640.4300	0.0314	0.0301	1,650.1782
Total		**0.2351**	**2.0090**	**0.8549**	**0.0128**		**0.1624**	**0.1624**		**0.1624**	**0.1624**		**2,564.6513**	**2,564.6513**	**0.0492**	**0.0470**	**2,579.8917**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	6.59629	0.0711	0.6079	0.2587	3.8800e-003		0.0492	0.0492		0.0492	0.0492		776.0339	776.0339	0.0149	0.0142	780.6455
Retirement Community	1.25959	0.0136	0.1161	0.0494	7.4000e-004		9.3900e-003	9.3900e-003		9.3900e-003	9.3900e-003		148.1874	148.1874	2.8400e-003	2.7200e-003	149.0680
Single Family Housing	13.9437	0.1504	1.2850	0.5468	8.2000e-003		0.1039	0.1039		0.1039	0.1039		1,640.4300	1,640.4300	0.0314	0.0301	1,650.1782
Total		**0.2351**	**2.0090**	**0.8549**	**0.0128**		**0.1624**	**0.1624**		**0.1624**	**0.1624**		**2,564.6513**	**2,564.6513**	**0.0492**	**0.0470**	**2,579.8917**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	15.9311	0.4116	35.6801	1.8900e-003		0.1986	0.1986		0.1986	0.1986	0.0000	64.4725	64.4725	0.0614	0.0000	66.0069
Unmitigated	15.9311	0.4116	35.6801	1.8900e-003		0.1986	0.1986		0.1986	0.1986	0.0000	64.4725	64.4725	0.0614	0.0000	66.0069

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.0462					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.8181					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0668	0.4116	35.6801	1.8900e-003		0.1986	0.1986		0.1986	0.1986		64.4725	64.4725	0.0614		66.0069
Total	**15.9311**	**0.4116**	**35.6801**	**1.8900e-003**		**0.1986**	**0.1986**		**0.1986**	**0.1986**	**0.0000**	**64.4725**	**64.4725**	**0.0614**	**0.0000**	**66.0069**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.0462					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.8181					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0668	0.4116	35.6801	1.8900e-003		0.1986	0.1986		0.1986	0.1986		64.4725	64.4725	0.0614		66.0069
Total	**15.9311**	**0.4116**	**35.6801**	**1.8900e-003**		**0.1986**	**0.1986**		**0.1986**	**0.1986**	**0.0000**	**64.4725**	**64.4725**	**0.0614**	**0.0000**	**66.0069**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

The Ranch - City of Rancho Cordova (Construction Only - Phase 2)

Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.54	Acre	1.54	67,082.40	0
City Park	2.19	Acre	2.19	95,396.40	0
Retirement Community	199.00	Dwelling Unit	39.80	199,000.00	414
Single Family Housing	197.00	Dwelling Unit	63.96	354,600.00	559
Retirement Community	38.00	Dwelling Unit	7.60	38,000.00	77

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Estimated construction state date of April 2022 (provided by Applicant).

Land Use - This model run provides construction emissions only.

Construction Phase - Phase 2

Off-road Equipment -

Off-road Equipment - For building construction, assumes 1 crane, 2 forklifts, 1 generator set, 1 tractor/loader/backhoe, and 1 welder (as provided by the applicant)

Off-road Equipment -
Off-road Equipment - D

Trips and VMT - -

Grading - No grading/soil export assumed for Phase 2 (already captured during Phase 1)

Architectural Coating - 75 g/L as provided by SMAQMD (average as provided by the air district).

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust -

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 28.33% - reflects project person/du value (2.523) vs. statewide avg. (2.97) and latest statewide data (ARB). Parking Degreaser EF red. by 57.5% (corrects for walking paths modeled as 'parking lot').

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%. NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Fleet Mix -

The Ranch - City of Rancho Cordova (Construction Only - Phase 2) - Sacramento County, Winter

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	75.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	220.00	870.00
tblConstructionPhase	NumDays	3,100.00	870.00
tblConstructionPhase	NumDays	220.00	65.00
tblConstructionPhase	NumDays	120.00	131.00
tblConstructionPhase	PhaseEndDate	4/10/2036	11/30/2026
tblConstructionPhase	PhaseEndDate	8/3/2034	7/31/2026
tblConstructionPhase	PhaseEndDate	6/7/2035	12/30/2022
tblConstructionPhase	PhaseEndDate	9/15/2022	9/30/2022
tblConstructionPhase	PhaseStartDate	6/8/2035	8/1/2023
tblConstructionPhase	PhaseStartDate	9/16/2022	4/1/2023
tblConstructionPhase	PhaseStartDate	8/4/2034	10/1/2022
tblLandUse	Population	531.00	414.00
tblLandUse	Population	526.00	559.00
tblLandUse	Population	101.00	77.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	62.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.2323	33.1245	20.1189	0.0392	18.2032	1.6135	19.8167	9.9670	1.4844	11.4514	0.0000	3,802.8929	3,802.8929	1.1951	0.0000	3,832.7690
2023	9.5817	22.4226	27.7951	0.0703	3.6788	0.7977	4.4765	0.9776	0.7546	1.7322	0.0000	6,969.7028	6,969.7028	0.7765	0.0000	6,989.1151
2024	9.3910	21.2098	26.9998	0.0693	3.6788	0.7005	4.3793	0.9776	0.6623	1.6399	0.0000	6,869.4932	6,869.4932	0.7655	0.0000	6,888.6301
2025	9.2084	19.9904	26.2761	0.0683	3.6787	0.6046	4.2833	0.9776	0.5715	1.5491	0.0000	6,770.8478	6,770.8478	0.7559	0.0000	6,789.7440
2026	9.1483	19.8331	25.7237	0.0674	3.6787	0.6036	4.2823	0.9776	0.5706	1.5482	0.0000	6,681.6746	6,681.6746	0.7509	0.0000	6,700.4458
Maximum	**9.5817**	**33.1245**	**27.7951**	**0.0703**	**18.2032**	**1.6135**	**19.8167**	**9.9670**	**1.4844**	**11.4514**	**0.0000**	**6,969.7028**	**6,969.7028**	**1.1951**	**0.0000**	**6,989.1151**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.2323	33.1245	20.1189	0.0392	8.2560	1.6135	9.8695	4.5025	1.4844	5.9869	0.0000	3,802.8929	3,802.8929	1.1951	0.0000	3,832.7690
2023	9.5817	22.4226	27.7951	0.0703	3.3924	0.7977	4.1901	0.9073	0.7546	1.6619	0.0000	6,969.7028	6,969.7028	0.7765	0.0000	6,989.1151
2024	9.3910	21.2098	26.9998	0.0693	3.3923	0.7005	4.0929	0.9073	0.6623	1.5696	0.0000	6,869.4932	6,869.4932	0.7655	0.0000	6,888.6301
2025	9.2084	19.9904	26.2761	0.0683	3.3923	0.6046	3.9969	0.9073	0.5715	1.4788	0.0000	6,770.8478	6,770.8478	0.7559	0.0000	6,789.7440
2026	9.1483	19.8331	25.7237	0.0674	3.3923	0.6036	3.9959	0.9073	0.5706	1.4779	0.0000	6,681.6746	6,681.6746	0.7509	0.0000	6,700.4458
Maximum	**9.5817**	**33.1245**	**27.7951**	**0.0703**	**8.2560**	**1.6135**	**9.8695**	**4.5025**	**1.4844**	**5.9869**	**0.0000**	**6,969.7028**	**6,969.7028**	**1.1951**	**0.0000**	**6,989.1151**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**33.70**	**0.00**	**29.79**	**41.40**	**0.00**	**32.06**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	15.9311	0.4116	35.6801	1.8900e-003		0.1986	0.1986		0.1986	0.1986	0.0000	64.4725	64.4725	0.0614	0.0000	66.0069
Energy	0.2351	2.0090	0.8549	0.0128		0.1624	0.1624		0.1624	0.1624		2,564.6513	2,564.6513	0.0492	0.0470	2,579.8917
Mobile	1.9575	11.0927	25.1221	0.1128	14.0269	0.0592	14.0861	3.7450	0.0550	3.8000		11,517.3428	11,517.3428	0.4403		11,528.3500
Total	**18.1236**	**13.5133**	**61.6571**	**0.1276**	**14.0269**	**0.4202**	**14.4471**	**3.7450**	**0.4160**	**4.1610**	**0.0000**	**14,146.4666**	**14,146.4666**	**0.5508**	**0.0470**	**14,174.2486**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	15.9311	0.4116	35.6801	1.8900e-003		0.1986	0.1986		0.1986	0.1986	0.0000	64.4725	64.4725	0.0614	0.0000	66.0069
Energy	0.2351	2.0090	0.8549	0.0128		0.1624	0.1624		0.1624	0.1624		2,564.6513	2,564.6513	0.0492	0.0470	2,579.8917
Mobile	1.9575	11.0927	25.1221	0.1128	14.0269	0.0592	14.0861	3.7450	0.0550	3.8000		11,517.3428	11,517.3428	0.4403		11,528.3500
Total	**18.1236**	**13.5133**	**61.6571**	**0.1276**	**14.0269**	**0.4202**	**14.4471**	**3.7450**	**0.4160**	**4.1610**	**0.0000**	**14,146.4666**	**14,146.4666**	**0.5508**	**0.0470**	**14,174.2486**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Improvements for Phase	Site Preparation	4/1/2022	9/30/2022	5	131	
2	Building Construction	Building Construction	4/1/2023	7/31/2026	5	870	
3	Paving	Paving	10/1/2022	12/30/2022	5	65	
4	Architectural Coating	Architectural Coating	8/1/2023	11/30/2026	5	870	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 1,197,990; Residential Outdoor: 399,330; Non-Residential Indoor: 10,500; Non-Residential Outdoor: 3,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Improvements for Phase	Rubber Tired Dozers	3	8.00	247	0.40
Improvements for Phase	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Improvements for Phase	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	310.00	73.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	62.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Improvements for Phase - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**18.0663**	**1.6126**	**19.6788**	**9.9307**	**1.4836**	**11.4143**		**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

3.2 Improvements for Phase - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0621	0.0410	0.4212	1.1700e-003	0.1369	9.0000e-004	0.1378	0.0363	8.3000e-004	0.0372		116.8311	116.8311	2.9000e-003		116.9035
Total	**0.0621**	**0.0410**	**0.4212**	**1.1700e-003**	**0.1369**	**9.0000e-004**	**0.1378**	**0.0363**	**8.3000e-004**	**0.0372**		**116.8311**	**116.8311**	**2.9000e-003**		**116.9035**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**8.1298**	**1.6126**	**9.7424**	**4.4688**	**1.4836**	**5.9524**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

3.2 Improvements for Phase - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0621	0.0410	0.4212	1.1700e-003	0.1262	9.0000e-004	0.1271	0.0337	8.3000e-004	0.0345		116.8311	116.8311	2.9000e-003		116.9035
Total	**0.0621**	**0.0410**	**0.4212**	**1.1700e-003**	**0.1262**	**9.0000e-004**	**0.1271**	**0.0337**	**8.3000e-004**	**0.0345**		**116.8311**	**116.8311**	**2.9000e-003**		**116.9035**

3.3 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

3.3 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1758	5.9724	1.7648	0.0171	0.4392	9.0300e-003	0.4482	0.1264	8.6400e-003	0.1350		1,809.1717	1,809.1717	0.0983		1,811.6288
Worker	1.0026	0.6353	6.6460	0.0194	2.3582	0.0151	2.3733	0.6255	0.0139	0.6395		1,936.5610	1,936.5610	0.0446		1,937.6760
Total	**1.1784**	**6.6077**	**8.4108**	**0.0365**	**2.7973**	**0.0242**	**2.8215**	**0.7519**	**0.0226**	**0.7745**		**3,745.7327**	**3,745.7327**	**0.1429**		**3,749.3048**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

3.3 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1758	5.9724	1.7648	0.0171	0.4109	9.0300e-003	0.4200	0.1194	8.6400e-003	0.1281		1,809.1717	1,809.1717	0.0983		1,811.6288
Worker	1.0026	0.6353	6.6460	0.0194	2.1737	0.0151	2.1889	0.5803	0.0139	0.5942		1,936.5610	1,936.5610	0.0446		1,937.6760
Total	**1.1784**	**6.6077**	**8.4108**	**0.0365**	**2.5847**	**0.0242**	**2.6088**	**0.6997**	**0.0226**	**0.7223**		**3,745.7327**	**3,745.7327**	**0.1429**		**3,749.3048**

3.3 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

3.3 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1674	5.8583	1.6493	0.0170	0.4391	8.5500e-003	0.4477	0.1264	8.1800e-003	0.1345		1,798.7733	1,798.7733	0.0971		1,801.2006
Worker	0.9441	0.5741	6.1446	0.0187	2.3582	0.0148	2.3730	0.6255	0.0136	0.6392		1,861.3108	1,861.3108	0.0402		1,862.3147
Total	**1.1115**	**6.4324**	**7.7939**	**0.0356**	**2.7973**	**0.0233**	**2.8206**	**0.7519**	**0.0218**	**0.7737**		**3,660.0841**	**3,660.0841**	**0.1373**		**3,663.5153**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

3.3 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1674	5.8583	1.6493	0.0170	0.4109	8.5500e-003	0.4194	0.1194	8.1800e-003	0.1276		1,798.7733	1,798.7733	0.0971		1,801.2006
Worker	0.9441	0.5741	6.1446	0.0187	2.1737	0.0148	2.1885	0.5803	0.0136	0.5939		1,861.3108	1,861.3108	0.0402		1,862.3147
Total	**1.1115**	**6.4324**	**7.7939**	**0.0356**	**2.5846**	**0.0233**	**2.6080**	**0.6997**	**0.0218**	**0.7215**		**3,660.0841**	**3,660.0841**	**0.1373**		**3,663.5153**

3.3 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.3 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1604	5.7497	1.5609	0.0169	0.4391	8.0900e-003	0.4472	0.1263	7.7300e-003	0.1341		1,788.7414	1,788.7414	0.0959		1,791.1399
Worker	0.8928	0.5213	5.6845	0.0179	2.3582	0.0145	2.3727	0.6255	0.0134	0.6389		1,786.8200	1,786.8200	0.0363		1,787.7285
Total	**1.0533**	**6.2710**	**7.2454**	**0.0348**	**2.7973**	**0.0226**	**2.8199**	**0.7519**	**0.0211**	**0.7730**		**3,575.5614**	**3,575.5614**	**0.1323**		**3,578.8684**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.3 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1604	5.7497	1.5609	0.0169	0.4109	8.0900e-003	0.4189	0.1194	7.7300e-003	0.1271		1,788.7414	1,788.7414	0.0959		1,791.1399
Worker	0.8928	0.5213	5.6845	0.0179	2.1737	0.0145	2.1883	0.5803	0.0134	0.5936		1,786.8200	1,786.8200	0.0363		1,787.7285
Total	**1.0533**	**6.2710**	**7.2454**	**0.0348**	**2.5846**	**0.0226**	**2.6072**	**0.6997**	**0.0211**	**0.7208**		**3,575.5614**	**3,575.5614**	**0.1323**		**3,578.8684**

3.3 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.3 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1543	5.6465	1.4887	0.0168	0.4390	7.6200e-003	0.4467	0.1263	7.2900e-003	0.1336		1,779.2222	1,779.2222	0.0949		1,781.5948
Worker	0.8479	0.4762	5.2843	0.0173	2.3582	0.0141	2.3723	0.6255	0.0130	0.6385		1,720.4416	1,720.4416	0.0330		1,721.2676
Total	**1.0022**	**6.1227**	**6.7731**	**0.0340**	**2.7972**	**0.0217**	**2.8189**	**0.7519**	**0.0203**	**0.7721**		**3,499.6638**	**3,499.6638**	**0.1279**		**3,502.8624**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

3.3 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1543	5.6465	1.4887	0.0168	0.4108	7.6200e-003	0.4184	0.1194	7.2900e-003	0.1267		1,779.2222	1,779.2222	0.0949		1,781.5948
Worker	0.8479	0.4762	5.2843	0.0173	2.1737	0.0141	2.1878	0.5803	0.0130	0.5932		1,720.4416	1,720.4416	0.0330		1,721.2676
Total	**1.0022**	**6.1227**	**6.7731**	**0.0340**	**2.5845**	**0.0217**	**2.6063**	**0.6997**	**0.0203**	**0.7199**		**3,499.6638**	**3,499.6638**	**0.1279**		**3,502.8624**

3.4 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.4 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.4 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.5 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.4383					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**6.6300**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.5 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2005	0.1271	1.3292	3.8900e-003	0.8815	3.0300e-003	0.8845	0.2257	2.7900e-003	0.2285		387.3122	387.3122	8.9200e-003		387.5352
Total	**0.2005**	**0.1271**	**1.3292**	**3.8900e-003**	**0.8815**	**3.0300e-003**	**0.8845**	**0.2257**	**2.7900e-003**	**0.2285**		**387.3122**	**387.3122**	**8.9200e-003**		**387.5352**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.4383					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**6.6300**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.5 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2005	0.1271	1.3292	3.8900e-003	0.8077	3.0300e-003	0.8107	0.2076	2.7900e-003	0.2104		387.3122	387.3122	8.9200e-003		387.5352
Total	**0.2005**	**0.1271**	**1.3292**	**3.8900e-003**	**0.8077**	**3.0300e-003**	**0.8107**	**0.2076**	**2.7900e-003**	**0.2104**		**387.3122**	**387.3122**	**8.9200e-003**		**387.5352**

3.5 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.4383					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**6.6191**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.5 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1888	0.1148	1.2289	3.7400e-003	0.8815	2.9600e-003	0.8845	0.2257	2.7200e-003	0.2284		372.2622	372.2622	8.0300e-003		372.4629
Total	**0.1888**	**0.1148**	**1.2289**	**3.7400e-003**	**0.8815**	**2.9600e-003**	**0.8845**	**0.2257**	**2.7200e-003**	**0.2284**		**372.2622**	**372.2622**	**8.0300e-003**		**372.4629**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.4383					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**6.6191**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.5 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1888	0.1148	1.2289	3.7400e-003	0.8077	2.9600e-003	0.8107	0.2076	2.7200e-003	0.2103		372.2622	372.2622	8.0300e-003		372.4629
Total	**0.1888**	**0.1148**	**1.2289**	**3.7400e-003**	**0.8077**	**2.9600e-003**	**0.8107**	**0.2076**	**2.7200e-003**	**0.2103**		**372.2622**	**372.2622**	**8.0300e-003**		**372.4629**

3.5 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.4383					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**6.6092**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.5 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1786	0.1043	1.1369	3.5900e-003	0.8815	2.9000e-003	0.8844	0.2257	2.6700e-003	0.2284		357.3640	357.3640	7.2700e-003		357.5457
Total	**0.1786**	**0.1043**	**1.1369**	**3.5900e-003**	**0.8815**	**2.9000e-003**	**0.8844**	**0.2257**	**2.6700e-003**	**0.2284**		**357.3640**	**357.3640**	**7.2700e-003**		**357.5457**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.4383					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**6.6092**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.5 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1786	0.1043	1.1369	3.5900e-003	0.8077	2.9000e-003	0.8106	0.2076	2.6700e-003	0.2103		357.3640	357.3640	7.2700e-003		357.5457
Total	**0.1786**	**0.1043**	**1.1369**	**3.5900e-003**	**0.8077**	**2.9000e-003**	**0.8106**	**0.2076**	**2.6700e-003**	**0.2103**		**357.3640**	**357.3640**	**7.2700e-003**		**357.5457**

3.5 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.4383					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**6.6092**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.5 Architectural Coating - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1696	0.0952	1.0569	3.4500e-003	0.8815	2.8200e-003	0.8843	0.2257	2.5900e-003	0.2283		344.0883	344.0883	6.6100e-003		344.2535
Total	**0.1696**	**0.0952**	**1.0569**	**3.4500e-003**	**0.8815**	**2.8200e-003**	**0.8843**	**0.2257**	**2.5900e-003**	**0.2283**		**344.0883**	**344.0883**	**6.6100e-003**		**344.2535**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.4383					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**6.6092**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.5 Architectural Coating - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1696	0.0952	1.0569	3.4500e-003	0.8077	2.8200e-003	0.8105	0.2076	2.5900e-003	0.2102		344.0883	344.0883	6.6100e-003		344.2535
Total	**0.1696**	**0.0952**	**1.0569**	**3.4500e-003**	**0.8077**	**2.8200e-003**	**0.8105**	**0.2076**	**2.5900e-003**	**0.2102**		**344.0883**	**344.0883**	**6.6100e-003**		**344.2535**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.9575	11.0927	25.1221	0.1128	14.0269	0.0592	14.0861	3.7450	0.0550	3.8000		11,517.3428	11,517.3428	0.4403		11,528.3500
Unmitigated	1.9575	11.0927	25.1221	0.1128	14.0269	0.0592	14.0861	3.7450	0.0550	3.8000		11,517.3428	11,517.3428	0.4403		11,528.3500

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	2.91	35.04	25.78	19,864	19,864
City Park	4.14	49.82	36.66	28,248	28,248
Retirement Community	477.60	403.97	388.05	1,165,754	1,165,754
Retirement Community	91.20	77.14	74.10	222,606	222,606
Single Family Housing	1,875.44	1,952.27	1698.14	4,775,752	4,775,752
Total	2,451.29	2,518.24	2,222.73	6,212,225	6,212,225

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2351	2.0090	0.8549	0.0128		0.1624	0.1624		0.1624	0.1624		2,564.6513	2,564.6513	0.0492	0.0470	2,579.8917
NaturalGas Unmitigated	0.2351	2.0090	0.8549	0.0128		0.1624	0.1624		0.1624	0.1624		2,564.6513	2,564.6513	0.0492	0.0470	2,579.8917

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	1259.59	0.0136	0.1161	0.0494	7.4000e-004		9.3900e-003	9.3900e-003		9.3900e-003	9.3900e-003		148.1874	148.1874	2.8400e-003	2.7200e-003	149.0680
Retirement Community	6596.29	0.0711	0.6079	0.2587	3.8800e-003		0.0492	0.0492		0.0492	0.0492		776.0339	776.0339	0.0149	0.0142	780.6455
Single Family Housing	13943.7	0.1504	1.2850	0.5468	8.2000e-003		0.1039	0.1039		0.1039	0.1039		1,640.4300	1,640.4300	0.0314	0.0301	1,650.1782
Total		**0.2351**	**2.0090**	**0.8549**	**0.0128**		**0.1624**	**0.1624**		**0.1624**	**0.1624**		**2,564.6513**	**2,564.6513**	**0.0492**	**0.0470**	**2,579.8917**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	6.59629	0.0711	0.6079	0.2587	3.8800e-003		0.0492	0.0492		0.0492	0.0492		776.0339	776.0339	0.0149	0.0142	780.6455
Retirement Community	1.25959	0.0136	0.1161	0.0494	7.4000e-004		9.3900e-003	9.3900e-003		9.3900e-003	9.3900e-003		148.1874	148.1874	2.8400e-003	2.7200e-003	149.0680
Single Family Housing	13.9437	0.1504	1.2850	0.5468	8.2000e-003		0.1039	0.1039		0.1039	0.1039		1,640.4300	1,640.4300	0.0314	0.0301	1,650.1782
Total		**0.2351**	**2.0090**	**0.8549**	**0.0128**		**0.1624**	**0.1624**		**0.1624**	**0.1624**		**2,564.6513**	**2,564.6513**	**0.0492**	**0.0470**	**2,579.8917**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	15.9311	0.4116	35.6801	1.8900e-003		0.1986	0.1986		0.1986	0.1986	0.0000	64.4725	64.4725	0.0614	0.0000	66.0069
Unmitigated	15.9311	0.4116	35.6801	1.8900e-003		0.1986	0.1986		0.1986	0.1986	0.0000	64.4725	64.4725	0.0614	0.0000	66.0069

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.0462					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.8181					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0668	0.4116	35.6801	1.8900e-003		0.1986	0.1986		0.1986	0.1986		64.4725	64.4725	0.0614		66.0069
Total	**15.9311**	**0.4116**	**35.6801**	**1.8900e-003**		**0.1986**	**0.1986**		**0.1986**	**0.1986**	**0.0000**	**64.4725**	**64.4725**	**0.0614**	**0.0000**	**66.0069**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.0462					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.8181					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0668	0.4116	35.6801	1.8900e-003		0.1986	0.1986		0.1986	0.1986		64.4725	64.4725	0.0614		66.0069
Total	**15.9311**	**0.4116**	**35.6801**	**1.8900e-003**		**0.1986**	**0.1986**		**0.1986**	**0.1986**	**0.0000**	**64.4725**	**64.4725**	**0.0614**	**0.0000**	**66.0069**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

The Ranch - City of Rancho Cordova (Construction Only - Phase 3)

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	1.50	Acre	1.50	65,340.00	0
City Park	1.54	Acre	1.54	67,082.40	0
City Park	10.78	Acre	10.78	469,576.80	0
Retirement Community	295.00	Dwelling Unit	59.00	295,000.00	613
Single Family Housing	265.00	Dwelling Unit	86.04	477,000.00	752

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Estimated construction state date of February 2025 (provided by Applicant).

Land Use - This model run provides construction emissions only. Includes 8,000 sf of restrooms (City Park) and 7,000 sf (1/3 of clubhouse).

Construction Phase - Phase 3

Off-road Equipment -

Off-road Equipment - For building construction, assumes 1 crane, 2 forklifts, 1 generator set, 1 tractor/loader/backhoe, and 1 welder (as provided by the applicant)

Off-road Equipment -
Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - -

Grading - 38,177 soil export. 143.0 acres graded during this phase (as provided by project applicant).

Architectural Coating - 75 g/L as provided by SMAQMD (average as provided by the air district).

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust -

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 28.33% - reflects project person/du value (2.523) vs. statewide avg. (2.97) and latest statewide data (ARB). Parking Degreaser EF red. by 57.5% (corrects for walking paths modeled as 'parking lot').

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%. NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Fleet Mix -

Off-road Equipment -

Off-road Equipment -

The Ranch - City of Rancho Cordova (Construction Only - Phase 3) - Sacramento County, Annual

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	75.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	220.00	1,240.00
tblConstructionPhase	NumDays	3,100.00	1,238.00
tblConstructionPhase	NumDays	310.00	113.00
tblConstructionPhase	NumDays	220.00	66.00
tblConstructionPhase	NumDays	220.00	86.00
tblConstructionPhase	NumDays	120.00	60.00
tblConstructionPhase	NumDays	120.00	196.00
tblGrading	AcresOfGrading	282.50	143.00
tblGrading	MaterialExported	0.00	38,177.00
tblLandUse	Population	788.00	613.00
tblLandUse	Population	708.00	752.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblTripsAndVMT	VendorTripNumber	159.00	0.00
tblTripsAndVMT	VendorTripNumber	159.00	0.00
tblTripsAndVMT	WorkerTripNumber	561.00	0.00
tblTripsAndVMT	WorkerTripNumber	561.00	0.00
tblTripsAndVMT	WorkerTripNumber	112.00	0.00
tblTripsAndVMT	WorkerTripNumber	112.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2025	0.2853	2.9510	2.6406	6.9200e-003	1.0058	0.1111	1.1169	0.5061	0.1023	0.6084	0.0000	621.9888	621.9888	0.1612	0.0000	626.0180
2026	0.9916	3.0544	3.4476	0.0126	1.9807	0.0618	2.0425	0.5041	0.0587	0.5629	0.0000	1,149.9781	1,149.9781	0.0784	0.0000	1,151.9374
2027	1.4604	5.8133	5.7147	0.0173	3.8396	0.1835	4.0231	1.4999	0.1708	1.6708	0.0000	1,562.9276	1,562.9276	0.2055	0.0000	1,568.0644
2028	1.1736	3.1052	3.4899	0.0127	2.0458	0.0671	2.1129	0.5206	0.0638	0.5844	0.0000	1,160.0481	1,160.0481	0.0838	0.0000	1,162.1417
2029	1.1529	2.9961	3.2506	0.0123	2.0525	0.0626	2.1151	0.5223	0.0596	0.5819	0.0000	1,128.4303	1,128.4303	0.0763	0.0000	1,130.3388
2030	1.0403	1.8635	2.4523	9.6300e-003	1.6076	0.0169	1.6245	0.4090	0.0167	0.4256	0.0000	877.6133	877.6133	0.0301	0.0000	878.3658
Maximum	**1.4604**	**5.8133**	**5.7147**	**0.0173**	**3.8396**	**0.1835**	**4.0231**	**1.4999**	**0.1708**	**1.6708**	**0.0000**	**1,562.9276**	**1,562.9276**	**0.2055**	**0.0000**	**1,568.0644**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2025	0.2853	2.9510	2.6406	6.9200e-003	0.4754	0.1111	0.5866	0.2340	0.1023	0.3363	0.0000	621.9882	621.9882	0.1612	0.0000	626.0175
2026	0.9916	3.0544	3.4476	0.0126	1.8132	0.0618	1.8750	0.4630	0.0587	0.5218	0.0000	1,149.9778	1,149.9778	0.0784	0.0000	1,151.9371
2027	1.4604	5.8133	5.7147	0.0173	2.6909	0.1835	2.8744	0.9217	0.1708	1.0926	0.0000	1,562.9268	1,562.9268	0.2055	0.0000	1,568.0636
2028	1.1736	3.1052	3.4899	0.0127	1.8728	0.0671	1.9399	0.4781	0.0638	0.5419	0.0000	1,160.0478	1,160.0478	0.0838	0.0000	1,162.1414
2029	1.1529	2.9961	3.2506	0.0123	1.8789	0.0626	1.9415	0.4797	0.0596	0.5393	0.0000	1,128.4300	1,128.4300	0.0763	0.0000	1,130.3385
2030	1.0403	1.8635	2.4523	9.6300e-003	1.4715	0.0169	1.4884	0.3756	0.0167	0.3922	0.0000	877.6130	877.6130	0.0301	0.0000	878.3656
Maximum	**1.4604**	**5.8133**	**5.7147**	**0.0173**	**2.6909**	**0.1835**	**2.8744**	**0.9217**	**0.1708**	**1.0926**	**0.0000**	**1,562.9268**	**1,562.9268**	**0.2055**	**0.0000**	**1,568.0636**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**18.59**	**0.00**	**17.87**	**25.49**	**0.00**	**22.78**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**2-1-2025**	**4-30-2025**	1.2026	1.2026
2	**5-1-2025**	**7-31-2025**	1.0164	1.0164
3	**8-1-2025**	**10-31-2025**	0.7915	0.7915
4	**11-1-2025**	**1-31-2026**	0.4908	0.4908
5	**2-1-2026**	**4-30-2026**	0.8875	0.8875

6	**5-1-2026**	**7-31-2026**	1.0808	1.0808
7	**8-1-2026**	**10-31-2026**	1.0829	1.0829
8	**11-1-2026**	**1-31-2027**	1.3902	1.3902
9	**2-1-2027**	**4-30-2027**	1.9199	1.9199
10	**5-1-2027**	**7-31-2027**	1.9806	1.9806
11	**8-1-2027**	**10-31-2027**	1.7879	1.7879
12	**11-1-2027**	**1-31-2028**	1.3853	1.3853
13	**2-1-2028**	**4-30-2028**	1.0370	1.0370
14	**5-1-2028**	**7-31-2028**	1.0562	1.0562
15	**8-1-2028**	**10-31-2028**	1.0582	1.0582
16	**11-1-2028**	**1-31-2029**	1.0579	1.0579
17	**2-1-2029**	**4-30-2029**	1.0141	1.0141
18	**5-1-2029**	**7-31-2029**	1.0447	1.0447
19	**8-1-2029**	**10-31-2029**	1.0465	1.0465
20	**11-1-2029**	**1-31-2030**	1.0007	1.0007
21	**2-1-2030**	**4-30-2030**	0.8723	0.8723
22	**5-1-2030**	**7-31-2030**	0.8982	0.8982
23	**8-1-2030**	**9-30-2030**	0.5955	0.5955
		Highest	1.9806	1.9806

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.7109	0.0664	5.7550	3.0000e-004		0.0320	0.0320		0.0320	0.0320	0.0000	9.4339	9.4339	8.9800e-003	0.0000	9.6584
Energy	0.0562	0.4799	0.2042	3.0600e-003		0.0388	0.0388		0.0388	0.0388	0.0000	1,531.1278	1,531.1278	0.0586	0.0201	1,538.5827
Mobile	0.4800	2.4919	5.5930	0.0264	3.0931	0.0135	3.1066	0.8282	0.0125	0.8407	0.0000	2,439.0037	2,439.0037	0.0890	0.0000	2,441.2283
Waste						0.0000	0.0000		0.0000	0.0000	82.7148	0.0000	82.7148	4.8883	0.0000	204.9223
Water						0.0000	0.0000		0.0000	0.0000	12.9089	83.9912	96.9001	0.0486	0.0289	106.7341
Total	**4.2471**	**3.0382**	**11.5522**	**0.0297**	**3.0931**	**0.0843**	**3.1774**	**0.8282**	**0.0833**	**0.9115**	**95.6237**	**4,063.5565**	**4,159.1801**	**5.0934**	**0.0490**	**4,301.1258**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.7109	0.0664	5.7550	3.0000e-004		0.0320	0.0320		0.0320	0.0320	0.0000	9.4339	9.4339	8.9800e-003	0.0000	9.6584
Energy	0.0562	0.4799	0.2042	3.0600e-003		0.0388	0.0388		0.0388	0.0388	0.0000	1,531.1278	1,531.1278	0.0586	0.0201	1,538.5827
Mobile	0.4800	2.4919	5.5930	0.0264	3.0931	0.0135	3.1066	0.8282	0.0125	0.8407	0.0000	2,439.0037	2,439.0037	0.0890	0.0000	2,441.2283
Waste						0.0000	0.0000		0.0000	0.0000	82.7148	0.0000	82.7148	4.8883	0.0000	204.9223
Water						0.0000	0.0000		0.0000	0.0000	12.9089	83.9912	96.9001	0.0486	0.0289	106.7341
Total	**4.2471**	**3.0382**	**11.5522**	**0.0297**	**3.0931**	**0.0843**	**3.1774**	**0.8282**	**0.0833**	**0.9115**	**95.6237**	**4,063.5565**	**4,159.1801**	**5.0934**	**0.0490**	**4,301.1258**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	1,585.9200
Vegetation Land Change	-1,057.2430
Total	**528.6770**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	2/1/2025	4/25/2025	5	60	
2	Grading	Grading	4/28/2025	10/1/2025	5	113	
3	Paving	Paving	10/1/2025	12/31/2025	5	66	
4	Building Construction	Building Construction	1/1/2026	9/30/2030	5	1238	
5	Architectural Coating	Architectural Coating	4/1/2026	12/31/2030	5	1240	
6	Site Preparation for Rancho Cordova Widening	Site Preparation	1/1/2027	10/1/2027	5	196	
7	Paving for Rancho Cordova widening	Paving	10/2/2027	1/31/2028	5	86	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 143

Acres of Paving: 1.5

Residential Indoor: 1,563,300; Residential Outdoor: 521,100; Non-Residential Indoor: 10,500; Non-Residential Outdoor: 3,500; Striped Parking Area: 3,920 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	2	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Site Preparation for Rancho Cordova Widening	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation for Rancho Cordova Widening	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Paving for Rancho Cordova widening	Pavers	2	8.00	130	0.42
Paving for Rancho Cordova widening	Paving Equipment	2	8.00	132	0.36
Paving for Rancho Cordova widening	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	3,775.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	561.00	159.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	112.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation for Rancho Cordova Wide	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving for Rancho Cordova widening	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5420	0.0000	0.5420	0.2979	0.0000	0.2979	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0742	0.7570	0.5374	1.1400e-003		0.0326	0.0326		0.0300	0.0300	0.0000	100.4010	100.4010	0.0325	0.0000	101.2128
Total	**0.0742**	**0.7570**	**0.5374**	**1.1400e-003**	**0.5420**	**0.0326**	**0.5746**	**0.2979**	**0.0300**	**0.3279**	**0.0000**	**100.4010**	**100.4010**	**0.0325**	**0.0000**	**101.2128**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.2200e-003	0.3287	0.0948	1.3900e-003	0.0318	7.2000e-004	0.0325	8.7300e-003	6.9000e-004	9.4200e-003	0.0000	135.9125	135.9125	7.5000e-003	0.0000	136.0999
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4500e-003	8.1000e-004	9.8900e-003	3.0000e-005	3.9700e-003	3.0000e-005	3.9900e-003	1.0500e-003	2.0000e-005	1.0800e-003	0.0000	2.9062	2.9062	6.0000e-005	0.0000	2.9077
Total	**0.0107**	**0.3295**	**0.1047**	**1.4200e-003**	**0.0358**	**7.5000e-004**	**0.0365**	**9.7800e-003**	**7.1000e-004**	**0.0105**	**0.0000**	**138.8187**	**138.8187**	**7.5600e-003**	**0.0000**	**139.0076**

3.2 Site Preparation - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2439	0.0000	0.2439	0.1341	0.0000	0.1341	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0742	0.7570	0.5374	1.1400e-003		0.0326	0.0326		0.0300	0.0300	0.0000	100.4008	100.4008	0.0325	0.0000	101.2126
Total	**0.0742**	**0.7570**	**0.5374**	**1.1400e-003**	**0.2439**	**0.0326**	**0.2765**	**0.1341**	**0.0300**	**0.1641**	**0.0000**	**100.4008**	**100.4008**	**0.0325**	**0.0000**	**101.2126**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.2200e-003	0.3287	0.0948	1.3900e-003	0.0297	7.2000e-004	0.0304	8.2000e-003	6.9000e-004	8.8900e-003	0.0000	135.9125	135.9125	7.5000e-003	0.0000	136.0999
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4500e-003	8.1000e-004	9.8900e-003	3.0000e-005	3.6600e-003	3.0000e-005	3.6800e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9062	2.9062	6.0000e-005	0.0000	2.9077
Total	**0.0107**	**0.3295**	**0.1047**	**1.4200e-003**	**0.0333**	**7.5000e-004**	**0.0341**	**9.1800e-003**	**7.1000e-004**	**9.8900e-003**	**0.0000**	**138.8187**	**138.8187**	**7.5600e-003**	**0.0000**	**139.0076**

3.3 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4161	0.0000	0.4161	0.1952	0.0000	0.1952	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1639	1.5788	1.4877	3.5100e-003		0.0639	0.0639		0.0588	0.0588	0.0000	307.9601	307.9601	0.0996	0.0000	310.4501
Total	**0.1639**	**1.5788**	**1.4877**	**3.5100e-003**	**0.4161**	**0.0639**	**0.4800**	**0.1952**	**0.0588**	**0.2540**	**0.0000**	**307.9601**	**307.9601**	**0.0996**	**0.0000**	**310.4501**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0400e-003	1.7000e-003	0.0207	7.0000e-005	8.3000e-003	5.0000e-005	8.3500e-003	2.2100e-003	5.0000e-005	2.2600e-003	0.0000	6.0815	6.0815	1.2000e-004	0.0000	6.0846
Total	**3.0400e-003**	**1.7000e-003**	**0.0207**	**7.0000e-005**	**8.3000e-003**	**5.0000e-005**	**8.3500e-003**	**2.2100e-003**	**5.0000e-005**	**2.2600e-003**	**0.0000**	**6.0815**	**6.0815**	**1.2000e-004**	**0.0000**	**6.0846**

3.3 Grading - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1872	0.0000	0.1872	0.0879	0.0000	0.0879	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1639	1.5788	1.4877	3.5100e-003		0.0639	0.0639		0.0588	0.0588	0.0000	307.9597	307.9597	0.0996	0.0000	310.4497
Total	**0.1639**	**1.5788**	**1.4877**	**3.5100e-003**	**0.1872**	**0.0639**	**0.2511**	**0.0879**	**0.0588**	**0.1466**	**0.0000**	**307.9597**	**307.9597**	**0.0996**	**0.0000**	**310.4497**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0400e-003	1.7000e-003	0.0207	7.0000e-005	7.6500e-003	5.0000e-005	7.7100e-003	2.0500e-003	5.0000e-005	2.1000e-003	0.0000	6.0815	6.0815	1.2000e-004	0.0000	6.0846
Total	**3.0400e-003**	**1.7000e-003**	**0.0207**	**7.0000e-005**	**7.6500e-003**	**5.0000e-005**	**7.7100e-003**	**2.0500e-003**	**5.0000e-005**	**2.1000e-003**	**0.0000**	**6.0815**	**6.0815**	**1.2000e-004**	**0.0000**	**6.0846**

3.4 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0302	0.2832	0.4811	7.5000e-004		0.0138	0.0138		0.0127	0.0127	0.0000	66.0635	66.0635	0.0214	0.0000	66.5977
Paving	1.9700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0322**	**0.2832**	**0.4811**	**7.5000e-004**		**0.0138**	**0.0138**		**0.0127**	**0.0127**	**0.0000**	**66.0635**	**66.0635**	**0.0214**	**0.0000**	**66.5977**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3300e-003	7.4000e-004	9.0700e-003	3.0000e-005	3.6400e-003	2.0000e-005	3.6600e-003	9.7000e-004	2.0000e-005	9.9000e-004	0.0000	2.6640	2.6640	5.0000e-005	0.0000	2.6654
Total	**1.3300e-003**	**7.4000e-004**	**9.0700e-003**	**3.0000e-005**	**3.6400e-003**	**2.0000e-005**	**3.6600e-003**	**9.7000e-004**	**2.0000e-005**	**9.9000e-004**	**0.0000**	**2.6640**	**2.6640**	**5.0000e-005**	**0.0000**	**2.6654**

3.4 Paving - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0302	0.2832	0.4811	7.5000e-004		0.0138	0.0138		0.0127	0.0127	0.0000	66.0635	66.0635	0.0214	0.0000	66.5976
Paving	1.9700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0322**	**0.2832**	**0.4811**	**7.5000e-004**		**0.0138**	**0.0138**		**0.0127**	**0.0127**	**0.0000**	**66.0635**	**66.0635**	**0.0214**	**0.0000**	**66.5976**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3300e-003	7.4000e-004	9.0700e-003	3.0000e-005	3.3500e-003	2.0000e-005	3.3800e-003	9.0000e-004	2.0000e-005	9.2000e-004	0.0000	2.6640	2.6640	5.0000e-005	0.0000	2.6654
Total	**1.3300e-003**	**7.4000e-004**	**9.0700e-003**	**3.0000e-005**	**3.3500e-003**	**2.0000e-005**	**3.3800e-003**	**9.0000e-004**	**2.0000e-005**	**9.2000e-004**	**0.0000**	**2.6640**	**2.6640**	**5.0000e-005**	**0.0000**	**2.6654**

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1369	1.2156	1.4419	2.6100e-003		0.0508	0.0508		0.0481	0.0481	0.0000	222.5505	222.5505	0.0452	0.0000	223.6814
Total	**0.1369**	**1.2156**	**1.4419**	**2.6100e-003**		**0.0508**	**0.0508**		**0.0481**	**0.0481**	**0.0000**	**222.5505**	**222.5505**	**0.0452**	**0.0000**	**223.6814**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0421	1.6104	0.3909	4.8300e-003	0.2925	2.0800e-003	0.2946	0.0771	1.9900e-003	0.0791	0.0000	465.7426	465.7426	0.0234	0.0000	466.3282
Worker	0.1867	0.1005	1.2485	4.1900e-003	1.4672	3.3300e-003	1.4705	0.3712	3.0600e-003	0.3742	0.0000	379.3689	379.3689	7.2400e-003	0.0000	379.5500
Total	**0.2288**	**1.7109**	**1.6394**	**9.0200e-003**	**1.7596**	**5.4100e-003**	**1.7651**	**0.4482**	**5.0500e-003**	**0.4533**	**0.0000**	**845.1114**	**845.1114**	**0.0307**	**0.0000**	**845.8782**

3.5 Building Construction - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1369	1.2156	1.4419	2.6100e-003		0.0508	0.0508		0.0481	0.0481	0.0000	222.5502	222.5502	0.0452	0.0000	223.6811
Total	**0.1369**	**1.2156**	**1.4419**	**2.6100e-003**		**0.0508**	**0.0508**		**0.0481**	**0.0481**	**0.0000**	**222.5502**	**222.5502**	**0.0452**	**0.0000**	**223.6811**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0421	1.6104	0.3909	4.8300e-003	0.2694	2.0800e-003	0.2715	0.0714	1.9900e-003	0.0734	0.0000	465.7426	465.7426	0.0234	0.0000	466.3282
Worker	0.1867	0.1005	1.2485	4.1900e-003	1.3417	3.3300e-003	1.3450	0.3404	3.0600e-003	0.3434	0.0000	379.3689	379.3689	7.2400e-003	0.0000	379.5500
Total	**0.2288**	**1.7109**	**1.6394**	**9.0200e-003**	**1.6111**	**5.4100e-003**	**1.6165**	**0.4117**	**5.0500e-003**	**0.4168**	**0.0000**	**845.1114**	**845.1114**	**0.0307**	**0.0000**	**845.8782**

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1369	1.2156	1.4419	2.6100e-003		0.0508	0.0508		0.0481	0.0481	0.0000	222.5505	222.5505	0.0452	0.0000	223.6814
Total	**0.1369**	**1.2156**	**1.4419**	**2.6100e-003**		**0.0508**	**0.0508**		**0.0481**	**0.0481**	**0.0000**	**222.5505**	**222.5505**	**0.0452**	**0.0000**	**223.6814**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0407	1.5833	0.3746	4.8100e-003	0.2925	1.9800e-003	0.2945	0.0771	1.9000e-003	0.0790	0.0000	463.3676	463.3676	0.0232	0.0000	463.9471
Worker	0.1766	0.0919	1.1647	4.0500e-003	1.4672	3.1600e-003	1.4703	0.3712	2.9100e-003	0.3741	0.0000	366.2642	366.2642	6.6000e-003	0.0000	366.4292
Total	**0.2173**	**1.6753**	**1.5392**	**8.8600e-003**	**1.7596**	**5.1400e-003**	**1.7648**	**0.4482**	**4.8100e-003**	**0.4530**	**0.0000**	**829.6319**	**829.6319**	**0.0298**	**0.0000**	**830.3763**

3.5 Building Construction - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1369	1.2156	1.4419	2.6100e-003		0.0508	0.0508		0.0481	0.0481	0.0000	222.5502	222.5502	0.0452	0.0000	223.6811
Total	**0.1369**	**1.2156**	**1.4419**	**2.6100e-003**		**0.0508**	**0.0508**		**0.0481**	**0.0481**	**0.0000**	**222.5502**	**222.5502**	**0.0452**	**0.0000**	**223.6811**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0407	1.5833	0.3746	4.8100e-003	0.2694	1.9800e-003	0.2713	0.0714	1.9000e-003	0.0733	0.0000	463.3676	463.3676	0.0232	0.0000	463.9471
Worker	0.1766	0.0919	1.1647	4.0500e-003	1.3417	3.1600e-003	1.3448	0.3404	2.9100e-003	0.3433	0.0000	366.2642	366.2642	6.6000e-003	0.0000	366.4292
Total	**0.2173**	**1.6753**	**1.5392**	**8.8600e-003**	**1.6110**	**5.1400e-003**	**1.6162**	**0.4117**	**4.8100e-003**	**0.4165**	**0.0000**	**829.6319**	**829.6319**	**0.0298**	**0.0000**	**830.3763**

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1364	1.2109	1.4364	2.6000e-003		0.0506	0.0506		0.0480	0.0480	0.0000	221.6978	221.6978	0.0451	0.0000	222.8244
Total	**0.1364**	**1.2109**	**1.4364**	**2.6000e-003**		**0.0506**	**0.0506**		**0.0480**	**0.0480**	**0.0000**	**221.6978**	**221.6978**	**0.0451**	**0.0000**	**222.8244**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0393	1.5543	0.3595	4.7600e-003	0.2914	1.8900e-003	0.2932	0.0768	1.8000e-003	0.0786	0.0000	459.5740	459.5740	0.0228	0.0000	460.1450
Worker	0.1656	0.0840	1.0866	3.9000e-003	1.4615	2.9400e-003	1.4645	0.3697	2.7100e-003	0.3724	0.0000	353.2724	353.2724	6.0200e-003	0.0000	353.4229
Total	**0.2048**	**1.6383**	**1.4460**	**8.6600e-003**	**1.7529**	**4.8300e-003**	**1.7577**	**0.4465**	**4.5100e-003**	**0.4510**	**0.0000**	**812.8464**	**812.8464**	**0.0289**	**0.0000**	**813.5678**

3.5 Building Construction - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1364	1.2109	1.4364	2.6000e-003		0.0506	0.0506		0.0480	0.0480	0.0000	221.6975	221.6975	0.0451	0.0000	222.8241
Total	**0.1364**	**1.2109**	**1.4364**	**2.6000e-003**		**0.0506**	**0.0506**		**0.0480**	**0.0480**	**0.0000**	**221.6975**	**221.6975**	**0.0451**	**0.0000**	**222.8241**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0393	1.5543	0.3595	4.7600e-003	0.2683	1.8900e-003	0.2702	0.0711	1.8000e-003	0.0729	0.0000	459.5740	459.5740	0.0228	0.0000	460.1450
Worker	0.1656	0.0840	1.0866	3.9000e-003	1.3365	2.9400e-003	1.3395	0.3391	2.7100e-003	0.3418	0.0000	353.2724	353.2724	6.0200e-003	0.0000	353.4229
Total	**0.2048**	**1.6383**	**1.4460**	**8.6600e-003**	**1.6049**	**4.8300e-003**	**1.6097**	**0.4102**	**4.5100e-003**	**0.4147**	**0.0000**	**812.8464**	**812.8464**	**0.0289**	**0.0000**	**813.5678**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1369	1.2156	1.4419	2.6100e-003		0.0508	0.0508		0.0481	0.0481	0.0000	222.5505	222.5505	0.0452	0.0000	223.6814
Total	**0.1369**	**1.2156**	**1.4419**	**2.6100e-003**		**0.0508**	**0.0508**		**0.0481**	**0.0481**	**0.0000**	**222.5505**	**222.5505**	**0.0452**	**0.0000**	**223.6814**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0382	1.5383	0.3493	4.7600e-003	0.2925	1.8000e-003	0.2943	0.0771	1.7200e-003	0.0788	0.0000	459.4975	459.4975	0.0227	0.0000	460.0643
Worker	0.1549	0.0773	1.0197	3.8000e-003	1.4672	2.7500e-003	1.4699	0.3712	2.5300e-003	0.3737	0.0000	344.3209	344.3209	5.5100e-003	0.0000	344.4588
Total	**0.1931**	**1.6156**	**1.3691**	**8.5600e-003**	**1.7596**	**4.5500e-003**	**1.7642**	**0.4482**	**4.2500e-003**	**0.4525**	**0.0000**	**803.8184**	**803.8184**	**0.0282**	**0.0000**	**804.5231**

3.5 Building Construction - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1369	1.2156	1.4419	2.6100e-003		0.0508	0.0508		0.0481	0.0481	0.0000	222.5502	222.5502	0.0452	0.0000	223.6811
Total	**0.1369**	**1.2156**	**1.4419**	**2.6100e-003**		**0.0508**	**0.0508**		**0.0481**	**0.0481**	**0.0000**	**222.5502**	**222.5502**	**0.0452**	**0.0000**	**223.6811**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0382	1.5383	0.3493	4.7600e-003	0.2693	1.8000e-003	0.2712	0.0714	1.7200e-003	0.0731	0.0000	459.4975	459.4975	0.0227	0.0000	460.0643
Worker	0.1549	0.0773	1.0197	3.8000e-003	1.3417	2.7500e-003	1.3444	0.3404	2.5300e-003	0.3429	0.0000	344.3209	344.3209	5.5100e-003	0.0000	344.4588
Total	**0.1931**	**1.6156**	**1.3691**	**8.5600e-003**	**1.6110**	**4.5500e-003**	**1.6156**	**0.4117**	**4.2500e-003**	**0.4160**	**0.0000**	**803.8184**	**803.8184**	**0.0282**	**0.0000**	**804.5231**

3.5 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0896	0.5506	1.0589	2.1900e-003		0.0106	0.0106		0.0106	0.0106	0.0000	184.8272	184.8272	7.2400e-003	0.0000	185.0081
Total	**0.0896**	**0.5506**	**1.0589**	**2.1900e-003**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**184.8272**	**184.8272**	**7.2400e-003**	**0.0000**	**185.0081**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0278	1.1340	0.2539	3.5400e-003	0.2185	1.2800e-003	0.2198	0.0576	1.2200e-003	0.0588	0.0000	342.0725	342.0725	0.0167	0.0000	342.4911
Worker	0.1075	0.0530	0.7142	2.7700e-003	1.0962	1.9100e-003	1.0981	0.2773	1.7600e-003	0.2791	0.0000	250.4655	250.4655	3.7700e-003	0.0000	250.5596
Total	**0.1353**	**1.1869**	**0.9680**	**6.3100e-003**	**1.3147**	**3.1900e-003**	**1.3179**	**0.3349**	**2.9800e-003**	**0.3379**	**0.0000**	**592.5380**	**592.5380**	**0.0205**	**0.0000**	**593.0507**

3.5 Building Construction - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0896	0.5506	1.0589	2.1900e-003		0.0106	0.0106		0.0106	0.0106	0.0000	184.8270	184.8270	7.2400e-003	0.0000	185.0079
Total	**0.0896**	**0.5506**	**1.0589**	**2.1900e-003**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**184.8270**	**184.8270**	**7.2400e-003**	**0.0000**	**185.0079**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0278	1.1340	0.2539	3.5400e-003	0.2012	1.2800e-003	0.2025	0.0533	1.2200e-003	0.0546	0.0000	342.0725	342.0725	0.0167	0.0000	342.4911
Worker	0.1075	0.0530	0.7142	2.7700e-003	1.0024	1.9100e-003	1.0043	0.2543	1.7600e-003	0.2561	0.0000	250.4655	250.4655	3.7700e-003	0.0000	250.5596
Total	**0.1353**	**1.1869**	**0.9680**	**6.3100e-003**	**1.2036**	**3.1900e-003**	**1.2068**	**0.3076**	**2.9800e-003**	**0.3106**	**0.0000**	**592.5380**	**592.5380**	**0.0205**	**0.0000**	**593.0507**

3.6 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5809					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0168	0.1128	0.1782	2.9000e-004		5.0700e-003	5.0700e-003		5.0700e-003	5.0700e-003	0.0000	25.1496	25.1496	1.3700e-003	0.0000	25.1839
Total	**0.5977**	**0.1128**	**0.1782**	**2.9000e-004**		**5.0700e-003**	**5.0700e-003**		**5.0700e-003**	**5.0700e-003**	**0.0000**	**25.1496**	**25.1496**	**1.3700e-003**	**0.0000**	**25.1839**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0281	0.0151	0.1881	6.3000e-004	0.2211	5.0000e-004	0.2216	0.0559	4.6000e-004	0.0564	0.0000	57.1666	57.1666	1.0900e-003	0.0000	57.1939
Total	**0.0281**	**0.0151**	**0.1881**	**6.3000e-004**	**0.2211**	**5.0000e-004**	**0.2216**	**0.0559**	**4.6000e-004**	**0.0564**	**0.0000**	**57.1666**	**57.1666**	**1.0900e-003**	**0.0000**	**57.1939**

3.6 Architectural Coating - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5809					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0168	0.1128	0.1782	2.9000e-004		5.0700e-003	5.0700e-003		5.0700e-003	5.0700e-003	0.0000	25.1495	25.1495	1.3700e-003	0.0000	25.1838
Total	**0.5977**	**0.1128**	**0.1782**	**2.9000e-004**		**5.0700e-003**	**5.0700e-003**		**5.0700e-003**	**5.0700e-003**	**0.0000**	**25.1495**	**25.1495**	**1.3700e-003**	**0.0000**	**25.1838**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0281	0.0151	0.1881	6.3000e-004	0.2022	5.0000e-004	0.2027	0.0513	4.6000e-004	0.0518	0.0000	57.1666	57.1666	1.0900e-003	0.0000	57.1939
Total	**0.0281**	**0.0151**	**0.1881**	**6.3000e-004**	**0.2022**	**5.0000e-004**	**0.2027**	**0.0513**	**4.6000e-004**	**0.0518**	**0.0000**	**57.1666**	**57.1666**	**1.0900e-003**	**0.0000**	**57.1939**

3.6 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7696					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3200	33.3200	1.8200e-003	0.0000	33.3654
Total	**0.7919**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3200**	**33.3200**	**1.8200e-003**	**0.0000**	**33.3654**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0353	0.0184	0.2325	8.1000e-004	0.2929	6.3000e-004	0.2935	0.0741	5.8000e-004	0.0747	0.0000	73.1223	73.1223	1.3200e-003	0.0000	73.1552
Total	**0.0353**	**0.0184**	**0.2325**	**8.1000e-004**	**0.2929**	**6.3000e-004**	**0.2935**	**0.0741**	**5.8000e-004**	**0.0747**	**0.0000**	**73.1223**	**73.1223**	**1.3200e-003**	**0.0000**	**73.1552**

3.6 Architectural Coating - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7696					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3199	33.3199	1.8200e-003	0.0000	33.3654
Total	**0.7919**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3199**	**33.3199**	**1.8200e-003**	**0.0000**	**33.3654**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0353	0.0184	0.2325	8.1000e-004	0.2679	6.3000e-004	0.2685	0.0680	5.8000e-004	0.0685	0.0000	73.1223	73.1223	1.3200e-003	0.0000	73.1552
Total	**0.0353**	**0.0184**	**0.2325**	**8.1000e-004**	**0.2679**	**6.3000e-004**	**0.2685**	**0.0680**	**5.8000e-004**	**0.0685**	**0.0000**	**73.1223**	**73.1223**	**1.3200e-003**	**0.0000**	**73.1552**

3.6 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7667					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0222	0.1489	0.2352	3.9000e-004		6.7000e-003	6.7000e-003		6.7000e-003	6.7000e-003	0.0000	33.1923	33.1923	1.8100e-003	0.0000	33.2376
Total	**0.7889**	**0.1489**	**0.2352**	**3.9000e-004**		**6.7000e-003**	**6.7000e-003**		**6.7000e-003**	**6.7000e-003**	**0.0000**	**33.1923**	**33.1923**	**1.8100e-003**	**0.0000**	**33.2376**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0331	0.0168	0.2169	7.8000e-004	0.2918	5.9000e-004	0.2924	0.0738	5.4000e-004	0.0744	0.0000	70.5285	70.5285	1.2000e-003	0.0000	70.5586
Total	**0.0331**	**0.0168**	**0.2169**	**7.8000e-004**	**0.2918**	**5.9000e-004**	**0.2924**	**0.0738**	**5.4000e-004**	**0.0744**	**0.0000**	**70.5285**	**70.5285**	**1.2000e-003**	**0.0000**	**70.5586**

3.6 Architectural Coating - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7667					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0222	0.1489	0.2352	3.9000e-004		6.7000e-003	6.7000e-003		6.7000e-003	6.7000e-003	0.0000	33.1923	33.1923	1.8100e-003	0.0000	33.2375
Total	**0.7889**	**0.1489**	**0.2352**	**3.9000e-004**		**6.7000e-003**	**6.7000e-003**		**6.7000e-003**	**6.7000e-003**	**0.0000**	**33.1923**	**33.1923**	**1.8100e-003**	**0.0000**	**33.2375**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0331	0.0168	0.2169	7.8000e-004	0.2668	5.9000e-004	0.2674	0.0677	5.4000e-004	0.0682	0.0000	70.5285	70.5285	1.2000e-003	0.0000	70.5586
Total	**0.0331**	**0.0168**	**0.2169**	**7.8000e-004**	**0.2668**	**5.9000e-004**	**0.2674**	**0.0677**	**5.4000e-004**	**0.0682**	**0.0000**	**70.5285**	**70.5285**	**1.2000e-003**	**0.0000**	**70.5586**

3.6 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7696					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3200	33.3200	1.8200e-003	0.0000	33.3654
Total	**0.7919**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3200**	**33.3200**	**1.8200e-003**	**0.0000**	**33.3654**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0309	0.0154	0.2036	7.6000e-004	0.2929	5.5000e-004	0.2935	0.0741	5.1000e-004	0.0746	0.0000	68.7414	68.7414	1.1000e-003	0.0000	68.7690
Total	**0.0309**	**0.0154**	**0.2036**	**7.6000e-004**	**0.2929**	**5.5000e-004**	**0.2935**	**0.0741**	**5.1000e-004**	**0.0746**	**0.0000**	**68.7414**	**68.7414**	**1.1000e-003**	**0.0000**	**68.7690**

3.6 Architectural Coating - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7696					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3199	33.3199	1.8200e-003	0.0000	33.3654
Total	**0.7919**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3199**	**33.3199**	**1.8200e-003**	**0.0000**	**33.3654**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0309	0.0154	0.2036	7.6000e-004	0.2679	5.5000e-004	0.2684	0.0680	5.1000e-004	0.0685	0.0000	68.7414	68.7414	1.1000e-003	0.0000	68.7690
Total	**0.0309**	**0.0154**	**0.2036**	**7.6000e-004**	**0.2679**	**5.5000e-004**	**0.2684**	**0.0680**	**5.1000e-004**	**0.0685**	**0.0000**	**68.7414**	**68.7414**	**1.1000e-003**	**0.0000**	**68.7690**

3.6 Architectural Coating - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7696					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1117	0.2346	3.9000e-004		2.6500e-003	2.6500e-003		2.6500e-003	2.6500e-003	0.0000	33.3200	33.3200	1.3500e-003	0.0000	33.3537
Total	**0.7867**	**0.1117**	**0.2346**	**3.9000e-004**		**2.6500e-003**	**2.6500e-003**		**2.6500e-003**	**2.6500e-003**	**0.0000**	**33.3200**	**33.3200**	**1.3500e-003**	**0.0000**	**33.3537**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0287	0.0142	0.1908	7.4000e-004	0.2929	5.1000e-004	0.2934	0.0741	4.7000e-004	0.0746	0.0000	66.9282	66.9282	1.0100e-003	0.0000	66.9533
Total	**0.0287**	**0.0142**	**0.1908**	**7.4000e-004**	**0.2929**	**5.1000e-004**	**0.2934**	**0.0741**	**4.7000e-004**	**0.0746**	**0.0000**	**66.9282**	**66.9282**	**1.0100e-003**	**0.0000**	**66.9533**

3.6 Architectural Coating - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7696					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1117	0.2346	3.9000e-004		2.6500e-003	2.6500e-003		2.6500e-003	2.6500e-003	0.0000	33.3199	33.3199	1.3500e-003	0.0000	33.3536
Total	**0.7867**	**0.1117**	**0.2346**	**3.9000e-004**		**2.6500e-003**	**2.6500e-003**		**2.6500e-003**	**2.6500e-003**	**0.0000**	**33.3199**	**33.3199**	**1.3500e-003**	**0.0000**	**33.3536**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0287	0.0142	0.1908	7.4000e-004	0.2679	5.1000e-004	0.2684	0.0680	4.7000e-004	0.0684	0.0000	66.9282	66.9282	1.0100e-003	0.0000	66.9533
Total	**0.0287**	**0.0142**	**0.1908**	**7.4000e-004**	**0.2679**	**5.1000e-004**	**0.2684**	**0.0680**	**4.7000e-004**	**0.0684**	**0.0000**	**66.9282**	**66.9282**	**1.0100e-003**	**0.0000**	**66.9533**

3.7 Site Preparation for Rancho Cordova Widening - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.7705	0.0000	1.7705	0.9732	0.0000	0.9732	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2423	2.4729	1.7554	3.7300e-003		0.1065	0.1065		0.0980	0.0980	0.0000	327.9765	327.9765	0.1061	0.0000	330.6283
Total	**0.2423**	**2.4729**	**1.7554**	**3.7300e-003**	**1.7705**	**0.1065**	**1.8770**	**0.9732**	**0.0980**	**1.0712**	**0.0000**	**327.9765**	**327.9765**	**0.1061**	**0.0000**	**330.6283**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2600e-003	2.2200e-003	0.0281	1.0000e-004	0.0130	8.0000e-005	0.0130	3.4500e-003	7.0000e-005	3.5200e-003	0.0000	8.8251	8.8251	1.6000e-004	0.0000	8.8291
Total	**4.2600e-003**	**2.2200e-003**	**0.0281**	**1.0000e-004**	**0.0130**	**8.0000e-005**	**0.0130**	**3.4500e-003**	**7.0000e-005**	**3.5200e-003**	**0.0000**	**8.8251**	**8.8251**	**1.6000e-004**	**0.0000**	**8.8291**

3.7 Site Preparation for Rancho Cordova Widening - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.7967	0.0000	0.7967	0.4379	0.0000	0.4379	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2423	2.4729	1.7554	3.7300e-003		0.1065	0.1065		0.0980	0.0980	0.0000	327.9761	327.9761	0.1061	0.0000	330.6279
Total	**0.2423**	**2.4729**	**1.7554**	**3.7300e-003**	**0.7967**	**0.1065**	**0.9032**	**0.4379**	**0.0980**	**0.5359**	**0.0000**	**327.9761**	**327.9761**	**0.1061**	**0.0000**	**330.6279**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2600e-003	2.2200e-003	0.0281	1.0000e-004	0.0120	8.0000e-005	0.0120	3.2000e-003	7.0000e-005	3.2700e-003	0.0000	8.8251	8.8251	1.6000e-004	0.0000	8.8291
Total	**4.2600e-003**	**2.2200e-003**	**0.0281**	**1.0000e-004**	**0.0120**	**8.0000e-005**	**0.0120**	**3.2000e-003**	**7.0000e-005**	**3.2700e-003**	**0.0000**	**8.8251**	**8.8251**	**1.6000e-004**	**0.0000**	**8.8291**

3.8 Paving for Rancho Cordova widening - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0297	0.2789	0.4738	7.4000e-004		0.0136	0.0136		0.0125	0.0125	0.0000	65.0626	65.0626	0.0210	0.0000	65.5886
Paving	1.4900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0312**	**0.2789**	**0.4738**	**7.4000e-004**		**0.0136**	**0.0136**		**0.0125**	**0.0125**	**0.0000**	**65.0626**	**65.0626**	**0.0210**	**0.0000**	**65.5886**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1800e-003	6.1000e-004	7.7600e-003	3.0000e-005	3.5800e-003	2.0000e-005	3.6000e-003	9.5000e-004	2.0000e-005	9.7000e-004	0.0000	2.4389	2.4389	4.0000e-005	0.0000	2.4400
Total	**1.1800e-003**	**6.1000e-004**	**7.7600e-003**	**3.0000e-005**	**3.5800e-003**	**2.0000e-005**	**3.6000e-003**	**9.5000e-004**	**2.0000e-005**	**9.7000e-004**	**0.0000**	**2.4389**	**2.4389**	**4.0000e-005**	**0.0000**	**2.4400**

3.8 Paving for Rancho Cordova widening - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0297	0.2789	0.4738	7.4000e-004		0.0136	0.0136		0.0125	0.0125	0.0000	65.0625	65.0625	0.0210	0.0000	65.5886
Paving	1.4900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0312**	**0.2789**	**0.4738**	**7.4000e-004**		**0.0136**	**0.0136**		**0.0125**	**0.0125**	**0.0000**	**65.0625**	**65.0625**	**0.0210**	**0.0000**	**65.5886**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1800e-003	6.1000e-004	7.7600e-003	3.0000e-005	3.3000e-003	2.0000e-005	3.3200e-003	8.8000e-004	2.0000e-005	9.0000e-004	0.0000	2.4389	2.4389	4.0000e-005	0.0000	2.4400
Total	**1.1800e-003**	**6.1000e-004**	**7.7600e-003**	**3.0000e-005**	**3.3000e-003**	**2.0000e-005**	**3.3200e-003**	**8.8000e-004**	**2.0000e-005**	**9.0000e-004**	**0.0000**	**2.4389**	**2.4389**	**4.0000e-005**	**0.0000**	**2.4400**

3.8 Paving for Rancho Cordova widening - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.6100e-003	0.0901	0.1531	2.4000e-004		4.3900e-003	4.3900e-003		4.0400e-003	4.0400e-003	0.0000	21.0202	21.0202	6.8000e-003	0.0000	21.1902
Paving	4.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0101**	**0.0901**	**0.1531**	**2.4000e-004**		**4.3900e-003**	**4.3900e-003**		**4.0400e-003**	**4.0400e-003**	**0.0000**	**21.0202**	**21.0202**	**6.8000e-003**	**0.0000**	**21.1902**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	1.8000e-004	2.3500e-003	1.0000e-005	1.1600e-003	1.0000e-005	1.1600e-003	3.1000e-004	1.0000e-005	3.1000e-004	0.0000	0.7629	0.7629	1.0000e-005	0.0000	0.7633
Total	**3.6000e-004**	**1.8000e-004**	**2.3500e-003**	**1.0000e-005**	**1.1600e-003**	**1.0000e-005**	**1.1600e-003**	**3.1000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**0.7629**	**0.7629**	**1.0000e-005**	**0.0000**	**0.7633**

3.8 Paving for Rancho Cordova widening - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.6100e-003	0.0901	0.1531	2.4000e-004		4.3900e-003	4.3900e-003		4.0400e-003	4.0400e-003	0.0000	21.0202	21.0202	6.8000e-003	0.0000	21.1902
Paving	4.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0101**	**0.0901**	**0.1531**	**2.4000e-004**		**4.3900e-003**	**4.3900e-003**		**4.0400e-003**	**4.0400e-003**	**0.0000**	**21.0202**	**21.0202**	**6.8000e-003**	**0.0000**	**21.1902**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	1.8000e-004	2.3500e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0700e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	0.7629	0.7629	1.0000e-005	0.0000	0.7633
Total	**3.6000e-004**	**1.8000e-004**	**2.3500e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0700e-003**	**2.9000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.7629**	**0.7629**	**1.0000e-005**	**0.0000**	**0.7633**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4800	2.4919	5.5930	0.0264	3.0931	0.0135	3.1066	0.8282	0.0125	0.8407	0.0000	2,439.0037	2,439.0037	0.0890	0.0000	2,441.2283
Unmitigated	0.4800	2.4919	5.5930	0.0264	3.0931	0.0135	3.1066	0.8282	0.0125	0.8407	0.0000	2,439.0037	2,439.0037	0.0890	0.0000	2,441.2283

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	2.91	35.04	25.78	19,864	19,864
City Park	20.37	245.25	180.46	139,050	139,050
Parking Lot	0.00	0.00	0.00		
Retirement Community	708.00	598.85	575.25	1,728,128	1,728,128
Single Family Housing	2,522.80	2,626.15	2284.30	6,424,236	6,424,236
Total	3,254.08	3,505.28	3,065.79	8,311,277	8,311,277

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Parking Lot	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	975.3269	975.3269	0.0479	9.9100e-003	979.4789
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	975.3269	975.3269	0.0479	9.9100e-003	979.4789
NaturalGas Mitigated	0.0562	0.4799	0.2042	3.0600e-003		0.0388	0.0388		0.0388	0.0388	0.0000	555.8009	555.8009	0.0107	0.0102	559.1037
NaturalGas Unmitigated	0.0562	0.4799	0.2042	3.0600e-003		0.0388	0.0388		0.0388	0.0388	0.0000	555.8009	555.8009	0.0107	0.0102	559.1037

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	3.56912e+006	0.0193	0.1645	0.0700	1.0500e-003		0.0133	0.0133		0.0133	0.0133	0.0000	190.4620	190.4620	3.6500e-003	3.4900e-003	191.5938
Single Family Housing	6.84619e+006	0.0369	0.3155	0.1342	2.0100e-003		0.0255	0.0255		0.0255	0.0255	0.0000	365.3389	365.3389	7.0000e-003	6.7000e-003	367.5100
Total		**0.0562**	**0.4799**	**0.2042**	**3.0600e-003**		**0.0388**	**0.0388**		**0.0388**	**0.0388**	**0.0000**	**555.8009**	**555.8009**	**0.0107**	**0.0102**	**559.1037**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	3.56912e+006	0.0193	0.1645	0.0700	1.0500e-003		0.0133	0.0133		0.0133	0.0133	0.0000	190.4620	190.4620	3.6500e-003	3.4900e-003	191.5938
Single Family Housing	6.84619e+006	0.0369	0.3155	0.1342	2.0100e-003		0.0255	0.0255		0.0255	0.0255	0.0000	365.3389	365.3389	7.0000e-003	6.7000e-003	367.5100
Total		**0.0562**	**0.4799**	**0.2042**	**3.0600e-003**		**0.0388**	**0.0388**		**0.0388**	**0.0388**	**0.0000**	**555.8009**	**555.8009**	**0.0107**	**0.0102**	**559.1037**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	22869	6.1234	3.0000e-004	6.0000e-005	6.1495
Retirement Community	1.38207e+006	370.0630	0.0182	3.7600e-003	371.6384
Single Family Housing	2.2376e+006	599.1405	0.0294	6.0900e-003	601.6911
Total		**975.3269**	**0.0479**	**9.9100e-003**	**979.4789**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	22869	6.1234	3.0000e-004	6.0000e-005	6.1495
Retirement Community	1.38207e+006	370.0630	0.0182	3.7600e-003	371.6384
Single Family Housing	2.2376e+006	599.1405	0.0294	6.0900e-003	601.6911
Total		**975.3269**	**0.0479**	**9.9100e-003**	**979.4789**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.7109	0.0664	5.7550	3.0000e-004		0.0320	0.0320		0.0320	0.0320	0.0000	9.4339	9.4339	8.9800e-003	0.0000	9.6584
Unmitigated	3.7109	0.0664	5.7550	3.0000e-004		0.0320	0.0320		0.0320	0.0320	0.0000	9.4339	9.4339	8.9800e-003	0.0000	9.6584

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4872					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.0516					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1721	0.0664	5.7550	3.0000e-004		0.0320	0.0320		0.0320	0.0320	0.0000	9.4339	9.4339	8.9800e-003	0.0000	9.6584
Total	**3.7109**	**0.0664**	**5.7550**	**3.0000e-004**		**0.0320**	**0.0320**		**0.0320**	**0.0320**	**0.0000**	**9.4339**	**9.4339**	**8.9800e-003**	**0.0000**	**9.6584**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4872					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.0516					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1721	0.0664	5.7550	3.0000e-004		0.0320	0.0320		0.0320	0.0320	0.0000	9.4339	9.4339	8.9800e-003	0.0000	9.6584
Total	**3.7109**	**0.0664**	**5.7550**	**3.0000e-004**		**0.0320**	**0.0320**		**0.0320**	**0.0320**	**0.0000**	**9.4339**	**9.4339**	**8.9800e-003**	**0.0000**	**9.6584**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	96.9001	0.0486	0.0289	106.7341
Unmitigated	96.9001	0.0486	0.0289	106.7341

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 14.6791	13.7566	6.8000e-004	1.4000e-004	13.8152
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Retirement Community	19.2204 / 12.1172	43.7988	0.0252	0.0152	48.9483
Single Family Housing	17.2658 / 10.885	39.3447	0.0227	0.0136	43.9706
Total		**96.9001**	**0.0486**	**0.0289**	**106.7341**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 14.6791	13.7566	6.8000e-004	1.4000e-004	13.8152
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Retirement Community	19.2204 / 12.1172	43.7988	0.0252	0.0152	48.9483
Single Family Housing	17.2658 / 10.885	39.3447	0.0227	0.0136	43.9706
Total		**96.9001**	**0.0486**	**0.0289**	**106.7341**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	82.7148	4.8883	0.0000	204.9223
Unmitigated	82.7148	4.8883	0.0000	204.9223

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	1.06	0.2152	0.0127	0.0000	0.5331
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Retirement Community	135.7	27.5459	1.6279	0.0000	68.2437
Single Family Housing	270.72	54.9537	3.2477	0.0000	136.1455
Total		**82.7148**	**4.8883**	**0.0000**	**204.9223**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	1.06	0.2152	0.0127	0.0000	0.5331
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Retirement Community	135.7	27.5459	1.6279	0.0000	68.2437
Single Family Housing	270.72	54.9537	3.2477	0.0000	136.1455
Total		**82.7148**	**4.8883**	**0.0000**	**204.9223**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	528.6770	0.0000	0.0000	528.6770

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	530.1 / 284.8	-1,057.2430	0.0000	0.0000	-1,057.2430
Total		**-1,057.2430**	**0.0000**	**0.0000**	**-1,057.2430**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	2240	1,585.9200	0.0000	0.0000	1,585.9200
Total		**1,585.9200**	**0.0000**	**0.0000**	**1,585.9200**

The Ranch - City of Rancho Cordova (Construction Only - Phase 3)

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	1.50	Acre	1.50	65,340.00	0
City Park	1.54	Acre	1.54	67,082.40	0
City Park	10.78	Acre	10.78	469,576.80	0
Retirement Community	295.00	Dwelling Unit	59.00	295,000.00	613
Single Family Housing	265.00	Dwelling Unit	86.04	477,000.00	752

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Estimated construction state date of February 2025 (provided by Applicant).

Land Use - This model run provides construction emissions only. Includes 8,000 sf of restrooms (City Park) and 7,000 sf (1/3 of clubhouse).

Construction Phase - Phase 3

Off-road Equipment -

Off-road Equipment - For building construction, assumes 1 crane, 2 forklifts, 1 generator set, 1 tractor/loader/backhoe, and 1 welder (as provided by the applicant)

Off-road Equipment -
Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - -

Grading - 38,177 soil export. 143.0 acres graded during this phase (as provided by project applicant).

Architectural Coating - 75 g/L as provided by SMAQMD (average as provided by the air district).

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust -

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 28.33% - reflects project person/du value (2.523) vs. statewide avg. (2.97) and latest statewide data (ARB). Parking Degreaser EF red. by 57.5% (corrects for walking paths modeled as 'parking lot').

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%. NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Fleet Mix -

Off-road Equipment -

Off-road Equipment -

The Ranch - City of Rancho Cordova (Construction Only - Phase 3) - Sacramento County, Summer

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	75.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	220.00	1,240.00
tblConstructionPhase	NumDays	3,100.00	1,238.00
tblConstructionPhase	NumDays	310.00	113.00
tblConstructionPhase	NumDays	220.00	66.00
tblConstructionPhase	NumDays	220.00	86.00
tblConstructionPhase	NumDays	120.00	60.00
tblConstructionPhase	NumDays	120.00	196.00
tblGrading	AcresOfGrading	282.50	143.00
tblGrading	MaterialExported	0.00	38,177.00
tblLandUse	Population	788.00	613.00
tblLandUse	Population	708.00	752.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblTripsAndVMT	VendorTripNumber	159.00	0.00
tblTripsAndVMT	VendorTripNumber	159.00	0.00
tblTripsAndVMT	WorkerTripNumber	561.00	0.00
tblTripsAndVMT	WorkerTripNumber	561.00	0.00
tblTripsAndVMT	WorkerTripNumber	112.00	0.00
tblTripsAndVMT	WorkerTripNumber	112.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2025	3.9844	36.5723	41.6727	0.0872	19.2965	1.5511	20.4078	10.2661	1.4270	11.2893	0.0000	8,833.8992	8,833.8992	2.6616	0.0000	8,870.5568
2026	9.4077	23.4868	29.3613	0.1030	16.3400	0.4867	16.8267	4.1525	0.4633	4.6159	0.0000	10,389.5010	10,389.5010	0.6712	0.0000	10,406.2814
2027	11.8107	48.4687	46.5993	0.1405	34.5431	1.5720	36.1151	14.1195	1.4618	15.5813	0.0000	14,021.1949	14,021.1949	1.8570	0.0000	14,067.6209
2028	10.1677	31.5762	42.2997	0.1235	16.4540	0.9010	17.3550	4.1828	0.8445	5.0272	0.0000	12,369.9931	12,369.9931	1.3688	0.0000	12,404.2135
2029	9.0389	22.7558	26.6131	0.0985	16.3398	0.4794	16.8192	4.1525	0.4565	4.6090	0.0000	9,943.5327	9,943.5327	0.6456	0.0000	9,959.6717
2030	8.7440	18.5927	25.6635	0.0998	16.3398	0.1650	16.5048	4.1525	0.1626	4.3150	0.0000	10,037.7103	10,037.7103	0.3339	0.0000	10,046.0569
Maximum	**11.8107**	**48.4687**	**46.5993**	**0.1405**	**34.5431**	**1.5720**	**36.1151**	**14.1195**	**1.4618**	**15.5813**	**0.0000**	**14,021.1949**	**14,021.1949**	**2.6616**	**0.0000**	**14,067.6209**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2025	3.9844	36.5723	41.6727	0.0872	9.2745	1.5511	10.3857	4.7832	1.4270	5.8065	0.0000	8,833.8992	8,833.8992	2.6616	0.0000	8,870.5568
2026	9.4077	23.4868	29.3613	0.1030	14.9543	0.4867	15.4410	3.8124	0.4633	4.2758	0.0000	10,389.5010	10,389.5010	0.6712	0.0000	10,406.2814
2027	11.8107	48.4687	46.5993	0.1405	23.2103	1.5720	24.7823	8.3149	1.4618	9.7767	0.0000	14,021.1949	14,021.1949	1.8570	0.0000	14,067.6209
2028	10.1677	31.5762	42.2997	0.1235	15.0594	0.9010	15.9604	3.8404	0.8445	4.6849	0.0000	12,369.9931	12,369.9931	1.3688	0.0000	12,404.2135
2029	9.0389	22.7558	26.6131	0.0985	14.9542	0.4794	15.4335	3.8123	0.4565	4.2689	0.0000	9,943.5327	9,943.5327	0.6456	0.0000	9,959.6717
2030	8.7440	18.5927	25.6635	0.0998	14.9541	0.1650	15.1191	3.8123	0.1626	3.9749	0.0000	10,037.7103	10,037.7103	0.3339	0.0000	10,046.0569
Maximum	**11.8107**	**48.4687**	**46.5993**	**0.1405**	**23.2103**	**1.5720**	**24.7823**	**8.3149**	**1.4618**	**9.7767**	**0.0000**	**14,021.1949**	**14,021.1949**	**2.6616**	**0.0000**	**14,067.6209**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**22.55**	**0.00**	**21.69**	**30.83**	**0.00**	**27.84**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	20.7674	0.5312	46.0397	2.4400e-003		0.2562	0.2562		0.2562	0.2562	0.0000	83.1923	83.1923	0.0792	0.0000	85.1723
Energy	0.3077	2.6297	1.1190	0.0168		0.2126	0.2126		0.2126	0.2126		3,357.0718	3,357.0718	0.0643	0.0616	3,377.0212
Mobile	3.7215	14.7214	38.1360	0.1705	19.2071	0.0809	19.2880	5.1280	0.0752	5.2032		17,369.2706	17,369.2706	0.5961		17,384.1734
Total	**24.7966**	**17.8823**	**85.2948**	**0.1897**	**19.2071**	**0.5497**	**19.7569**	**5.1280**	**0.5440**	**5.6720**	**0.0000**	**20,809.5347**	**20,809.5347**	**0.7397**	**0.0616**	**20,846.3669**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	20.7674	0.5312	46.0397	2.4400e-003		0.2562	0.2562		0.2562	0.2562	0.0000	83.1923	83.1923	0.0792	0.0000	85.1723
Energy	0.3077	2.6297	1.1190	0.0168		0.2126	0.2126		0.2126	0.2126		3,357.0718	3,357.0718	0.0643	0.0616	3,377.0212
Mobile	3.7215	14.7214	38.1360	0.1705	19.2071	0.0809	19.2880	5.1280	0.0752	5.2032		17,369.2706	17,369.2706	0.5961		17,384.1734
Total	**24.7966**	**17.8823**	**85.2948**	**0.1897**	**19.2071**	**0.5497**	**19.7569**	**5.1280**	**0.5440**	**5.6720**	**0.0000**	**20,809.5347**	**20,809.5347**	**0.7397**	**0.0616**	**20,846.3669**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	2/1/2025	4/25/2025	5	60	
2	Grading	Grading	4/28/2025	10/1/2025	5	113	
3	Paving	Paving	10/1/2025	12/31/2025	5	66	
4	Building Construction	Building Construction	1/1/2026	9/30/2030	5	1238	
5	Architectural Coating	Architectural Coating	4/1/2026	12/31/2030	5	1240	
6	Site Preparation for Rancho Cordova Widening	Site Preparation	1/1/2027	10/1/2027	5	196	
7	Paving for Rancho Cordova widening	Paving	10/2/2027	1/31/2028	5	86	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 143

Acres of Paving: 1.5

Residential Indoor: 1,563,300; Residential Outdoor: 521,100; Non-Residential Indoor: 10,500; Non-Residential Outdoor: 3,500; Striped Parking Area: 3,920 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	2	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Site Preparation for Rancho Cordova Widening	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation for Rancho Cordova Widening	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Paving for Rancho Cordova widening	Pavers	2	8.00	130	0.42
Paving for Rancho Cordova widening	Paving Equipment	2	8.00	132	0.36
Paving for Rancho Cordova widening	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	3,775.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	561.00	159.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	112.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation for Rancho Cordova Wide	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving for Rancho Cordova widening	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999		3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.0663**	**1.0868**	**19.1531**	**9.9307**	**0.9999**	**10.9305**		**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3036	10.6722	3.0895	0.0467	1.0933	0.0236	1.1169	0.2991	0.0226	0.3217		5,026.6933	5,026.6933	0.2708		5,033.4621
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0558	0.0246	0.3928	1.1900e-003	0.1369	8.4000e-004	0.1378	0.0363	7.8000e-004	0.0371		118.1022	118.1022	2.4200e-003		118.1627
Total	**0.3593**	**10.6967**	**3.4822**	**0.0479**	**1.2302**	**0.0245**	**1.2547**	**0.3354**	**0.0234**	**0.3588**		**5,144.7955**	**5,144.7955**	**0.2732**		**5,151.6248**

3.2 Site Preparation - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999	0.0000	3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**8.1298**	**1.0868**	**9.2166**	**4.4688**	**0.9999**	**5.4687**	**0.0000**	**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3036	10.6722	3.0895	0.0467	1.0185	0.0236	1.0421	0.2807	0.0226	0.3033		5,026.6933	5,026.6933	0.2708		5,033.4621
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0558	0.0246	0.3928	1.1900e-003	0.1262	8.4000e-004	0.1271	0.0337	7.8000e-004	0.0345		118.1022	118.1022	2.4200e-003		118.1627
Total	**0.3593**	**10.6967**	**3.4822**	**0.0479**	**1.1447**	**0.0245**	**1.1691**	**0.3144**	**0.0234**	**0.3378**		**5,144.7955**	**5,144.7955**	**0.2732**		**5,151.6248**

3.3 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.3641	0.0000	7.3641	3.4551	0.0000	3.4551			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404		6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**7.3641**	**1.1309**	**8.4950**	**3.4551**	**1.0404**	**4.4956**		**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0620	0.0273	0.4364	1.3200e-003	0.1521	9.4000e-004	0.1531	0.0404	8.6000e-004	0.0412		131.2246	131.2246	2.6900e-003		131.2918
Total	**0.0620**	**0.0273**	**0.4364**	**1.3200e-003**	**0.1521**	**9.4000e-004**	**0.1531**	**0.0404**	**8.6000e-004**	**0.0412**		**131.2246**	**131.2246**	**2.6900e-003**		**131.2918**

3.3 Grading - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.3139	0.0000	3.3139	1.5548	0.0000	1.5548			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404	0.0000	6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**3.3139**	**1.1309**	**4.4448**	**1.5548**	**1.0404**	**2.5952**	**0.0000**	**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0620	0.0273	0.4364	1.3200e-003	0.1402	9.4000e-004	0.1412	0.0374	8.6000e-004	0.0383		131.2246	131.2246	2.6900e-003		131.2918
Total	**0.0620**	**0.0273**	**0.4364**	**1.3200e-003**	**0.1402**	**9.4000e-004**	**0.1412**	**0.0374**	**8.6000e-004**	**0.0383**		**131.2246**	**131.2246**	**2.6900e-003**		**131.2918**

3.4 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0596					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9747**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0465	0.0205	0.3273	9.9000e-004	0.1141	7.0000e-004	0.1148	0.0303	6.5000e-004	0.0309		98.4185	98.4185	2.0200e-003		98.4689
Total	**0.0465**	**0.0205**	**0.3273**	**9.9000e-004**	**0.1141**	**7.0000e-004**	**0.1148**	**0.0303**	**6.5000e-004**	**0.0309**		**98.4185**	**98.4185**	**2.0200e-003**		**98.4689**

3.4 Paving - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0596					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9747**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0465	0.0205	0.3273	9.9000e-004	0.1052	7.0000e-004	0.1059	0.0281	6.5000e-004	0.0287		98.4185	98.4185	2.0200e-003		98.4689
Total	**0.0465**	**0.0205**	**0.3273**	**9.9000e-004**	**0.1052**	**7.0000e-004**	**0.1059**	**0.0281**	**6.5000e-004**	**0.0287**		**98.4185**	**98.4185**	**2.0200e-003**		**98.4689**

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0493	9.3147	11.0490	0.0200		0.3891	0.3891		0.3689	0.3689		1,879.8458	1,879.8458	0.3821		1,889.3986
Total	**1.0493**	**9.3147**	**11.0490**	**0.0200**		**0.3891**	**0.3891**		**0.3689**	**0.3689**		**1,879.8458**	**1,879.8458**	**0.3821**		**1,889.3986**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3169	12.1878	2.8156	0.0374	2.3227	0.0155	2.3382	0.6105	0.0148	0.6254		3,976.6346	3,976.6346	0.1914		3,981.4189
Worker	1.6450	0.6992	11.4097	0.0356	11.6846	0.0255	11.7101	2.9526	0.0235	2.9760		3,544.0300	3,544.0300	0.0687		3,545.7468
Total	**1.9618**	**12.8870**	**14.2253**	**0.0730**	**14.0072**	**0.0410**	**14.0483**	**3.5631**	**0.0383**	**3.6014**		**7,520.6646**	**7,520.6646**	**0.2600**		**7,527.1657**

3.5 Building Construction - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0493	9.3147	11.0490	0.0200		0.3891	0.3891		0.3689	0.3689	0.0000	1,879.8458	1,879.8458	0.3821		1,889.3986
Total	**1.0493**	**9.3147**	**11.0490**	**0.0200**		**0.3891**	**0.3891**		**0.3689**	**0.3689**	**0.0000**	**1,879.8458**	**1,879.8458**	**0.3821**		**1,889.3986**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3169	12.1878	2.8156	0.0374	2.1382	0.0155	2.1537	0.5653	0.0148	0.5801		3,976.6346	3,976.6346	0.1914		3,981.4189
Worker	1.6450	0.6992	11.4097	0.0356	10.6833	0.0255	10.7088	2.7068	0.0235	2.7303		3,544.0300	3,544.0300	0.0687		3,545.7468
Total	**1.9618**	**12.8870**	**14.2253**	**0.0730**	**12.8215**	**0.0410**	**12.8625**	**3.2720**	**0.0383**	**3.3103**		**7,520.6646**	**7,520.6646**	**0.2600**		**7,527.1657**

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0493	9.3147	11.0490	0.0200		0.3891	0.3891		0.3689	0.3689		1,879.8458	1,879.8458	0.3821		1,889.3986
Total	**1.0493**	**9.3147**	**11.0490**	**0.0200**		**0.3891**	**0.3891**		**0.3689**	**0.3689**		**1,879.8458**	**1,879.8458**	**0.3821**		**1,889.3986**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3060	11.9863	2.6989	0.0372	2.3226	0.0148	2.3374	0.6105	0.0141	0.6246		3,956.1732	3,956.1732	0.1893		3,960.9067
Worker	1.5544	0.6400	10.6602	0.0343	11.6846	0.0243	11.7088	2.9526	0.0223	2.9749		3,421.7137	3,421.7137	0.0626		3,423.2787
Total	**1.8603**	**12.6263**	**13.3591**	**0.0715**	**14.0072**	**0.0390**	**14.0462**	**3.5631**	**0.0365**	**3.5995**		**7,377.8869**	**7,377.8869**	**0.2519**		**7,384.1853**

3.5 Building Construction - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0493	9.3147	11.0490	0.0200		0.3891	0.3891		0.3689	0.3689	0.0000	1,879.8458	1,879.8458	0.3821		1,889.3986
Total	**1.0493**	**9.3147**	**11.0490**	**0.0200**		**0.3891**	**0.3891**		**0.3689**	**0.3689**	**0.0000**	**1,879.8458**	**1,879.8458**	**0.3821**		**1,889.3986**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3060	11.9863	2.6989	0.0372	2.1381	0.0148	2.1529	0.5652	0.0141	0.5794		3,956.1732	3,956.1732	0.1893		3,960.9067
Worker	1.5544	0.6400	10.6602	0.0343	10.6833	0.0243	10.7075	2.7068	0.0223	2.7291		3,421.7137	3,421.7137	0.0626		3,423.2787
Total	**1.8603**	**12.6263**	**13.3591**	**0.0715**	**12.8214**	**0.0390**	**12.8604**	**3.2720**	**0.0365**	**3.3084**		**7,377.8869**	**7,377.8869**	**0.2519**		**7,384.1853**

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0493	9.3147	11.0490	0.0200		0.3891	0.3891		0.3689	0.3689		1,879.8458	1,879.8458	0.3821		1,889.3986
Total	**1.0493**	**9.3147**	**11.0490**	**0.0200**		**0.3891**	**0.3891**		**0.3689**	**0.3689**		**1,879.8458**	**1,879.8458**	**0.3821**		**1,889.3986**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2963	11.8139	2.6007	0.0370	2.3226	0.0142	2.3367	0.6105	0.0135	0.6240		3,938.6671	3,938.6671	0.1873		3,943.3492
Worker	1.4621	0.5874	9.9993	0.0332	11.6846	0.0226	11.7072	2.9526	0.0208	2.9734		3,313.2326	3,313.2326	0.0574		3,314.6669
Total	**1.7584**	**12.4013**	**12.5999**	**0.0703**	**14.0071**	**0.0368**	**14.0439**	**3.5630**	**0.0343**	**3.5974**		**7,251.8997**	**7,251.8997**	**0.2447**		**7,258.0161**

3.5 Building Construction - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0493	9.3147	11.0490	0.0200		0.3891	0.3891		0.3689	0.3689	0.0000	1,879.8458	1,879.8458	0.3821		1,889.3986
Total	**1.0493**	**9.3147**	**11.0490**	**0.0200**		**0.3891**	**0.3891**		**0.3689**	**0.3689**	**0.0000**	**1,879.8458**	**1,879.8458**	**0.3821**		**1,889.3986**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2963	11.8139	2.6007	0.0370	2.1381	0.0142	2.1522	0.5652	0.0135	0.5787		3,938.6671	3,938.6671	0.1873		3,943.3492
Worker	1.4621	0.5874	9.9993	0.0332	10.6833	0.0226	10.7059	2.7068	0.0208	2.7276		3,313.2326	3,313.2326	0.0574		3,314.6669
Total	**1.7584**	**12.4013**	**12.5999**	**0.0703**	**12.8214**	**0.0368**	**12.8581**	**3.2720**	**0.0343**	**3.3063**		**7,251.8997**	**7,251.8997**	**0.2447**		**7,258.0161**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0493	9.3147	11.0490	0.0200		0.3891	0.3891		0.3689	0.3689		1,879.8458	1,879.8458	0.3821		1,889.3986
Total	**1.0493**	**9.3147**	**11.0490**	**0.0200**		**0.3891**	**0.3891**		**0.3689**	**0.3689**		**1,879.8458**	**1,879.8458**	**0.3821**		**1,889.3986**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2877	11.6497	2.5188	0.0369	2.3225	0.0135	2.3360	0.6105	0.0129	0.6234		3,922.7346	3,922.7346	0.1852		3,927.3655
Worker	1.3618	0.5384	9.3663	0.0323	11.6846	0.0211	11.7057	2.9526	0.0194	2.9719		3,217.2094	3,217.2094	0.0524		3,218.5193
Total	**1.6495**	**12.1881**	**11.8851**	**0.0691**	**14.0071**	**0.0346**	**14.0416**	**3.5630**	**0.0323**	**3.5953**		**7,139.9440**	**7,139.9440**	**0.2376**		**7,145.8847**

3.5 Building Construction - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0493	9.3147	11.0490	0.0200		0.3891	0.3891		0.3689	0.3689	0.0000	1,879.8458	1,879.8458	0.3821		1,889.3986
Total	**1.0493**	**9.3147**	**11.0490**	**0.0200**		**0.3891**	**0.3891**		**0.3689**	**0.3689**	**0.0000**	**1,879.8458**	**1,879.8458**	**0.3821**		**1,889.3986**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2877	11.6497	2.5188	0.0369	2.1380	0.0135	2.1515	0.5652	0.0129	0.5781		3,922.7346	3,922.7346	0.1852		3,927.3655
Worker	1.3618	0.5384	9.3663	0.0323	10.6833	0.0211	10.7044	2.7068	0.0194	2.7262		3,217.2094	3,217.2094	0.0524		3,218.5193
Total	**1.6495**	**12.1881**	**11.8851**	**0.0691**	**12.8213**	**0.0346**	**12.8559**	**3.2720**	**0.0323**	**3.3043**		**7,139.9440**	**7,139.9440**	**0.2376**		**7,145.8847**

3.5 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9190	5.6475	10.8602	0.0224		0.1083	0.1083		0.1083	0.1083		2,089.6114	2,089.6114	0.0818		2,091.6567
Total	**0.9190**	**5.6475**	**10.8602**	**0.0224**		**0.1083**	**0.1083**		**0.1083**	**0.1083**		**2,089.6114**	**2,089.6114**	**0.0818**		**2,091.6567**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2799	11.4960	2.4516	0.0367	2.3225	0.0128	2.3353	0.6104	0.0123	0.6227		3,908.5374	3,908.5374	0.1831		3,913.1151
Worker	1.2646	0.4942	8.7976	0.0314	11.6846	0.0196	11.7042	2.9526	0.0181	2.9706		3,132.6919	3,132.6919	0.0480		3,133.8912
Total	**1.5445**	**11.9902**	**11.2492**	**0.0682**	**14.0070**	**0.0325**	**14.0395**	**3.5630**	**0.0303**	**3.5933**		**7,041.2293**	**7,041.2293**	**0.2311**		**7,047.0064**

3.5 Building Construction - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9190	5.6475	10.8602	0.0224		0.1083	0.1083		0.1083	0.1083	0.0000	2,089.6114	2,089.6114	0.0818		2,091.6567
Total	**0.9190**	**5.6475**	**10.8602**	**0.0224**		**0.1083**	**0.1083**		**0.1083**	**0.1083**	**0.0000**	**2,089.6114**	**2,089.6114**	**0.0818**		**2,091.6567**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2799	11.4960	2.4516	0.0367	2.1380	0.0128	2.1508	0.5652	0.0123	0.5774		3,908.5374	3,908.5374	0.1831		3,913.1151
Worker	1.2646	0.4942	8.7976	0.0314	10.6833	0.0196	10.7029	2.7068	0.0181	2.7248		3,132.6919	3,132.6919	0.0480		3,133.8912
Total	**1.5445**	**11.9902**	**11.2492**	**0.0682**	**12.8213**	**0.0325**	**12.8537**	**3.2719**	**0.0303**	**3.3023**		**7,041.2293**	**7,041.2293**	**0.2311**		**7,047.0064**

3.6 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**6.0682**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3284	0.1396	2.2779	7.1000e-003	2.3328	5.0900e-003	2.3378	0.5895	4.6900e-003	0.5941		707.5425	707.5425	0.0137		707.8853
Total	**0.3284**	**0.1396**	**2.2779**	**7.1000e-003**	**2.3328**	**5.0900e-003**	**2.3378**	**0.5895**	**4.6900e-003**	**0.5941**		**707.5425**	**707.5425**	**0.0137**		**707.8853**

3.6 Architectural Coating - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**6.0682**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3284	0.1396	2.2779	7.1000e-003	2.1329	5.0900e-003	2.1379	0.5404	4.6900e-003	0.5451		707.5425	707.5425	0.0137		707.8853
Total	**0.3284**	**0.1396**	**2.2779**	**7.1000e-003**	**2.1329**	**5.0900e-003**	**2.1379**	**0.5404**	**4.6900e-003**	**0.5451**		**707.5425**	**707.5425**	**0.0137**		**707.8853**

3.6 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**6.0682**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3103	0.1278	2.1282	6.8500e-003	2.3328	4.8400e-003	2.3376	0.5895	4.4600e-003	0.5939		683.1229	683.1229	0.0125		683.4353
Total	**0.3103**	**0.1278**	**2.1282**	**6.8500e-003**	**2.3328**	**4.8400e-003**	**2.3376**	**0.5895**	**4.4600e-003**	**0.5939**		**683.1229**	**683.1229**	**0.0125**		**683.4353**

3.6 Architectural Coating - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**6.0682**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3103	0.1278	2.1282	6.8500e-003	2.1329	4.8400e-003	2.1377	0.5404	4.4600e-003	0.5449		683.1229	683.1229	0.0125		683.4353
Total	**0.3103**	**0.1278**	**2.1282**	**6.8500e-003**	**2.1329**	**4.8400e-003**	**2.1377**	**0.5404**	**4.4600e-003**	**0.5449**		**683.1229**	**683.1229**	**0.0125**		**683.4353**

3.6 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**6.0682**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2919	0.1173	1.9963	6.6300e-003	2.3328	4.5200e-003	2.3373	0.5895	4.1600e-003	0.5936		661.4653	661.4653	0.0115		661.7517
Total	**0.2919**	**0.1173**	**1.9963**	**6.6300e-003**	**2.3328**	**4.5200e-003**	**2.3373**	**0.5895**	**4.1600e-003**	**0.5936**		**661.4653**	**661.4653**	**0.0115**		**661.7517**

3.6 Architectural Coating - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**6.0682**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2919	0.1173	1.9963	6.6300e-003	2.1329	4.5200e-003	2.1374	0.5404	4.1600e-003	0.5446		661.4653	661.4653	0.0115		661.7517
Total	**0.2919**	**0.1173**	**1.9963**	**6.6300e-003**	**2.1329**	**4.5200e-003**	**2.1374**	**0.5404**	**4.1600e-003**	**0.5446**		**661.4653**	**661.4653**	**0.0115**		**661.7517**

3.6 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**6.0682**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2719	0.1075	1.8699	6.4400e-003	2.3328	4.2100e-003	2.3370	0.5895	3.8700e-003	0.5933		642.2949	642.2949	0.0105		642.5564
Total	**0.2719**	**0.1075**	**1.8699**	**6.4400e-003**	**2.3328**	**4.2100e-003**	**2.3370**	**0.5895**	**3.8700e-003**	**0.5933**		**642.2949**	**642.2949**	**0.0105**		**642.5564**

3.6 Architectural Coating - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**6.0682**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2719	0.1075	1.8699	6.4400e-003	2.1329	4.2100e-003	2.1371	0.5404	3.8700e-003	0.5443		642.2949	642.2949	0.0105		642.5564
Total	**0.2719**	**0.1075**	**1.8699**	**6.4400e-003**	**2.1329**	**4.2100e-003**	**2.1371**	**0.5404**	**3.8700e-003**	**0.5443**		**642.2949**	**642.2949**	**0.0105**		**642.5564**

3.6 Architectural Coating - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**6.0281**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2525	0.0987	1.7564	6.2700e-003	2.3328	3.9200e-003	2.3367	0.5895	3.6100e-003	0.5931		625.4216	625.4216	9.5800e-003		625.6610
Total	**0.2525**	**0.0987**	**1.7564**	**6.2700e-003**	**2.3328**	**3.9200e-003**	**2.3367**	**0.5895**	**3.6100e-003**	**0.5931**		**625.4216**	**625.4216**	**9.5800e-003**		**625.6610**

3.6 Architectural Coating - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**6.0281**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2525	0.0987	1.7564	6.2700e-003	2.1329	3.9200e-003	2.1368	0.5404	3.6100e-003	0.5440		625.4216	625.4216	9.5800e-003		625.6610
Total	**0.2525**	**0.0987**	**1.7564**	**6.2700e-003**	**2.1329**	**3.9200e-003**	**2.1368**	**0.5404**	**3.6100e-003**	**0.5440**		**625.4216**	**625.4216**	**9.5800e-003**		**625.6610**

3.7 Site Preparation for Rancho Cordova Widening - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999		3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.0663**	**1.0868**	**19.1531**	**9.9307**	**0.9999**	**10.9305**		**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0499	0.0205	0.3420	1.1000e-003	0.1369	7.8000e-004	0.1377	0.0363	7.2000e-004	0.0370		109.7876	109.7876	2.0100e-003		109.8378
Total	**0.0499**	**0.0205**	**0.3420**	**1.1000e-003**	**0.1369**	**7.8000e-004**	**0.1377**	**0.0363**	**7.2000e-004**	**0.0370**		**109.7876**	**109.7876**	**2.0100e-003**		**109.8378**

3.7 Site Preparation for Rancho Cordova Widening - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999	0.0000	3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**8.1298**	**1.0868**	**9.2166**	**4.4688**	**0.9999**	**5.4687**	**0.0000**	**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0499	0.0205	0.3420	1.1000e-003	0.1262	7.8000e-004	0.1270	0.0337	7.2000e-004	0.0344		109.7876	109.7876	2.0100e-003		109.8378
Total	**0.0499**	**0.0205**	**0.3420**	**1.1000e-003**	**0.1262**	**7.8000e-004**	**0.1270**	**0.0337**	**7.2000e-004**	**0.0344**		**109.7876**	**109.7876**	**2.0100e-003**		**109.8378**

3.8 Paving for Rancho Cordova widening - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0457					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9609**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0416	0.0171	0.2850	9.2000e-004	0.1141	6.5000e-004	0.1148	0.0303	6.0000e-004	0.0309		91.4897	91.4897	1.6700e-003		91.5315
Total	**0.0416**	**0.0171**	**0.2850**	**9.2000e-004**	**0.1141**	**6.5000e-004**	**0.1148**	**0.0303**	**6.0000e-004**	**0.0309**		**91.4897**	**91.4897**	**1.6700e-003**		**91.5315**

3.8 Paving for Rancho Cordova widening - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0457					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9609**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0416	0.0171	0.2850	9.2000e-004	0.1052	6.5000e-004	0.1058	0.0281	6.0000e-004	0.0287		91.4897	91.4897	1.6700e-003		91.5315
Total	**0.0416**	**0.0171**	**0.2850**	**9.2000e-004**	**0.1052**	**6.5000e-004**	**0.1058**	**0.0281**	**6.0000e-004**	**0.0287**		**91.4897**	**91.4897**	**1.6700e-003**		**91.5315**

3.8 Paving for Rancho Cordova widening - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0457					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9609**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0391	0.0157	0.2674	8.9000e-004	0.1141	6.1000e-004	0.1147	0.0303	5.6000e-004	0.0308		88.5891	88.5891	1.5300e-003		88.6275
Total	**0.0391**	**0.0157**	**0.2674**	**8.9000e-004**	**0.1141**	**6.1000e-004**	**0.1147**	**0.0303**	**5.6000e-004**	**0.0308**		**88.5891**	**88.5891**	**1.5300e-003**		**88.6275**

3.8 Paving for Rancho Cordova widening - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0457					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9609**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0391	0.0157	0.2674	8.9000e-004	0.1052	6.1000e-004	0.1058	0.0281	5.6000e-004	0.0286		88.5891	88.5891	1.5300e-003		88.6275
Total	**0.0391**	**0.0157**	**0.2674**	**8.9000e-004**	**0.1052**	**6.1000e-004**	**0.1058**	**0.0281**	**5.6000e-004**	**0.0286**		**88.5891**	**88.5891**	**1.5300e-003**		**88.6275**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.7215	14.7214	38.1360	0.1705	19.2071	0.0809	19.2880	5.1280	0.0752	5.2032		17,369.2706	17,369.2706	0.5961		17,384.1734
Unmitigated	3.7215	14.7214	38.1360	0.1705	19.2071	0.0809	19.2880	5.1280	0.0752	5.2032		17,369.2706	17,369.2706	0.5961		17,384.1734

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	2.91	35.04	25.78	19,864	19,864
City Park	20.37	245.25	180.46	139,050	139,050
Parking Lot	0.00	0.00	0.00		
Retirement Community	708.00	598.85	575.25	1,728,128	1,728,128
Single Family Housing	2,522.80	2,626.15	2284.30	6,424,236	6,424,236
Total	3,254.08	3,505.28	3,065.79	8,311,277	8,311,277

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Parking Lot	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.3077	2.6297	1.1190	0.0168		0.2126	0.2126		0.2126	0.2126		3,357.0718	3,357.0718	0.0643	0.0616	3,377.0212
NaturalGas Unmitigated	0.3077	2.6297	1.1190	0.0168		0.2126	0.2126		0.2126	0.2126		3,357.0718	3,357.0718	0.0643	0.0616	3,377.0212

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	9778.42	0.1055	0.9012	0.3835	5.7500e-003		0.0729	0.0729		0.0729	0.0729		1,150.4021	1,150.4021	0.0221	0.0211	1,157.2383
Single Family Housing	18756.7	0.2023	1.7286	0.7356	0.0110		0.1398	0.1398		0.1398	0.1398		2,206.6697	2,206.6697	0.0423	0.0405	2,219.7829
Total		**0.3077**	**2.6297**	**1.1190**	**0.0168**		**0.2126**	**0.2126**		**0.2126**	**0.2126**		**3,357.0718**	**3,357.0718**	**0.0643**	**0.0616**	**3,377.0212**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	9.77842	0.1055	0.9012	0.3835	5.7500e-003		0.0729	0.0729		0.0729	0.0729		1,150.4021	1,150.4021	0.0221	0.0211	1,157.2383
Single Family Housing	18.7567	0.2023	1.7286	0.7356	0.0110		0.1398	0.1398		0.1398	0.1398		2,206.6697	2,206.6697	0.0423	0.0405	2,219.7829
Total		**0.3077**	**2.6297**	**1.1190**	**0.0168**		**0.2126**	**0.2126**		**0.2126**	**0.2126**		**3,357.0718**	**3,357.0718**	**0.0643**	**0.0616**	**3,377.0212**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	20.7674	0.5312	46.0397	2.4400e-003		0.2562	0.2562		0.2562	0.2562	0.0000	83.1923	83.1923	0.0792	0.0000	85.1723
Unmitigated	20.7674	0.5312	46.0397	2.4400e-003		0.2562	0.2562		0.2562	0.2562	0.0000	83.1923	83.1923	0.0792	0.0000	85.1723

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.6697					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	16.7210					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3767	0.5312	46.0397	2.4400e-003		0.2562	0.2562		0.2562	0.2562		83.1923	83.1923	0.0792		85.1723
Total	**20.7674**	**0.5312**	**46.0397**	**2.4400e-003**		**0.2562**	**0.2562**		**0.2562**	**0.2562**	**0.0000**	**83.1923**	**83.1923**	**0.0792**	**0.0000**	**85.1723**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.6697					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	16.7210					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3767	0.5312	46.0397	2.4400e-003		0.2562	0.2562		0.2562	0.2562		83.1923	83.1923	0.0792		85.1723
Total	**20.7674**	**0.5312**	**46.0397**	**2.4400e-003**		**0.2562**	**0.2562**		**0.2562**	**0.2562**	**0.0000**	**83.1923**	**83.1923**	**0.0792**	**0.0000**	**85.1723**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

The Ranch - City of Rancho Cordova (Construction Only - Phase 3)

Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	1.50	Acre	1.50	65,340.00	0
City Park	1.54	Acre	1.54	67,082.40	0
City Park	10.78	Acre	10.78	469,576.80	0
Retirement Community	295.00	Dwelling Unit	59.00	295,000.00	613
Single Family Housing	265.00	Dwelling Unit	86.04	477,000.00	752

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Estimated construction state date of February 2025 (provided by Applicant).

Land Use - This model run provides construction emissions only. Includes 8,000 sf of restrooms (City Park) and 7,000 sf (1/3 of clubhouse).

Construction Phase - Phase 3

Off-road Equipment -

Off-road Equipment - For building construction, assumes 1 crane, 2 forklifts, 1 generator set, 1 tractor/loader/backhoe, and 1 welder (as provided by the applicant)

Off-road Equipment -
Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - -

Grading - 38,177 soil export. 143.0 acres graded during this phase (as provided by project applicant).

Architectural Coating - 75 g/L as provided by SMAQMD (average as provided by the air district).

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust -

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 28.33% - reflects project person/du value (2.523) vs. statewide avg. (2.97) and latest statewide data (ARB). Parking Degreaser EF red. by 57.5% (corrects for walking paths modeled as 'parking lot').

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%. NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Fleet Mix -

Off-road Equipment -

Off-road Equipment -

The Ranch - City of Rancho Cordova (Construction Only - Phase 3) - Sacramento County, Winter

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	75.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	220.00	1,240.00
tblConstructionPhase	NumDays	3,100.00	1,238.00
tblConstructionPhase	NumDays	310.00	113.00
tblConstructionPhase	NumDays	220.00	66.00
tblConstructionPhase	NumDays	220.00	86.00
tblConstructionPhase	NumDays	120.00	60.00
tblConstructionPhase	NumDays	120.00	196.00
tblGrading	AcresOfGrading	282.50	143.00
tblGrading	MaterialExported	0.00	38,177.00
tblLandUse	Population	788.00	613.00
tblLandUse	Population	708.00	752.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblTripsAndVMT	VendorTripNumber	159.00	0.00
tblTripsAndVMT	VendorTripNumber	159.00	0.00
tblTripsAndVMT	WorkerTripNumber	561.00	0.00
tblTripsAndVMT	WorkerTripNumber	561.00	0.00
tblTripsAndVMT	WorkerTripNumber	112.00	0.00
tblTripsAndVMT	WorkerTripNumber	112.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2025	3.9767	36.5834	41.5509	0.0869	19.2965	1.5511	20.4087	10.2661	1.4270	11.2903	0.0000	8,741.5393	8,741.5393	2.6610	0.0000	8,778.4653
2026	9.2943	23.7925	27.5728	0.0969	16.3400	0.4878	16.8278	4.1525	0.4644	4.6169	0.0000	9,771.6093	9,771.6093	0.6759	0.0000	9,788.5067
2027	11.7058	48.7571	44.8498	0.1344	34.5431	1.5730	36.1161	14.1195	1.4628	15.5823	0.0000	13,408.5952	13,408.5952	1.8621	0.0000	13,455.1476
2028	10.0726	31.8454	40.6474	0.1176	16.4540	0.9019	17.3558	4.1828	0.8453	5.0280	0.0000	11,776.4406	11,776.4406	1.3745	0.0000	11,810.8017
2029	8.9550	23.0048	25.0856	0.0929	16.3398	0.4801	16.8199	4.1525	0.4572	4.6097	0.0000	9,375.1900	9,375.1900	0.6519	0.0000	9,391.4864
2030	8.6690	18.8262	24.2080	0.0943	16.3398	0.1657	16.5054	4.1525	0.1632	4.3156	0.0000	9,481.9176	9,481.9176	0.3405	0.0000	9,490.4312
Maximum	**11.7058**	**48.7571**	**44.8498**	**0.1344**	**34.5431**	**1.5730**	**36.1161**	**14.1195**	**1.4628**	**15.5823**	**0.0000**	**13,408.5952**	**13,408.5952**	**2.6610**	**0.0000**	**13,455.1476**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2025	3.9767	36.5834	41.5509	0.0869	9.2745	1.5511	10.3867	4.7832	1.4270	5.8074	0.0000	8,741.5393	8,741.5393	2.6610	0.0000	8,778.4653
2026	9.2943	23.7925	27.5728	0.0969	14.9543	0.4878	15.4421	3.8124	0.4644	4.2768	0.0000	9,771.6093	9,771.6093	0.6759	0.0000	9,788.5067
2027	11.7058	48.7571	44.8498	0.1344	23.2103	1.5730	24.7833	8.3149	1.4628	9.7777	0.0000	13,408.5952	13,408.5952	1.8621	0.0000	13,455.1476
2028	10.0726	31.8454	40.6474	0.1176	15.0594	0.9019	15.9613	3.8404	0.8453	4.6857	0.0000	11,776.4406	11,776.4406	1.3745	0.0000	11,810.8017
2029	8.9550	23.0048	25.0856	0.0929	14.9542	0.4801	15.4343	3.8123	0.4572	4.2696	0.0000	9,375.1900	9,375.1900	0.6519	0.0000	9,391.4864
2030	8.6690	18.8262	24.2080	0.0943	14.9541	0.1657	15.1198	3.8123	0.1632	3.9755	0.0000	9,481.9176	9,481.9176	0.3405	0.0000	9,490.4312
Maximum	**11.7058**	**48.7571**	**44.8498**	**0.1344**	**23.2103**	**1.5730**	**24.7833**	**8.3149**	**1.4628**	**9.7777**	**0.0000**	**13,408.5952**	**13,408.5952**	**2.6610**	**0.0000**	**13,455.1476**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**22.55**	**0.00**	**21.69**	**30.83**	**0.00**	**27.84**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	20.7674	0.5312	46.0397	2.4400e-003		0.2562	0.2562		0.2562	0.2562	0.0000	83.1923	83.1923	0.0792	0.0000	85.1723
Energy	0.3077	2.6297	1.1190	0.0168		0.2126	0.2126		0.2126	0.2126		3,357.0718	3,357.0718	0.0643	0.0616	3,377.0212
Mobile	2.6998	15.3082	34.5036	0.1546	19.2071	0.0813	19.2884	5.1280	0.0755	5.2035		15,784.9424	15,784.9424	0.6050		15,800.0662
Total	**23.7749**	**18.4691**	**81.6623**	**0.1739**	**19.2071**	**0.5501**	**19.7572**	**5.1280**	**0.5443**	**5.6724**	**0.0000**	**19,225.2065**	**19,225.2065**	**0.7485**	**0.0616**	**19,262.2597**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	20.7674	0.5312	46.0397	2.4400e-003		0.2562	0.2562		0.2562	0.2562	0.0000	83.1923	83.1923	0.0792	0.0000	85.1723
Energy	0.3077	2.6297	1.1190	0.0168		0.2126	0.2126		0.2126	0.2126		3,357.0718	3,357.0718	0.0643	0.0616	3,377.0212
Mobile	2.6998	15.3082	34.5036	0.1546	19.2071	0.0813	19.2884	5.1280	0.0755	5.2035		15,784.9424	15,784.9424	0.6050		15,800.0662
Total	**23.7749**	**18.4691**	**81.6623**	**0.1739**	**19.2071**	**0.5501**	**19.7572**	**5.1280**	**0.5443**	**5.6724**	**0.0000**	**19,225.2065**	**19,225.2065**	**0.7485**	**0.0616**	**19,262.2597**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	2/1/2025	4/25/2025	5	60	
2	Grading	Grading	4/28/2025	10/1/2025	5	113	
3	Paving	Paving	10/1/2025	12/31/2025	5	66	
4	Building Construction	Building Construction	1/1/2026	9/30/2030	5	1238	
5	Architectural Coating	Architectural Coating	4/1/2026	12/31/2030	5	1240	
6	Site Preparation for Rancho Cordova Widening	Site Preparation	1/1/2027	10/1/2027	5	196	
7	Paving for Rancho Cordova widening	Paving	10/2/2027	1/31/2028	5	86	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 143

Acres of Paving: 1.5

Residential Indoor: 1,563,300; Residential Outdoor: 521,100; Non-Residential Indoor: 10,500; Non-Residential Outdoor: 3,500; Striped Parking Area: 3,920 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	2	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Site Preparation for Rancho Cordova Widening	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation for Rancho Cordova Widening	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Paving for Rancho Cordova widening	Pavers	2	8.00	130	0.42
Paving for Rancho Cordova widening	Paving Equipment	2	8.00	132	0.36
Paving for Rancho Cordova widening	Rollers	2	8.00	80	0.38

Trips and VMT

The Ranch - City of Rancho Cordova (Construction Only - Phase 3) - Sacramento County, Winter

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	3,775.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	561.00	159.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	112.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation for Rancho Cordova Wide	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving for Rancho Cordova widening	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999		3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.0663**	**1.0868**	**19.1531**	**9.9307**	**0.9999**	**10.9305**		**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3127	10.9749	3.2626	0.0460	1.0933	0.0246	1.1179	0.2991	0.0235	0.3226		4,948.6848	4,948.6848	0.2818		4,955.7297
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0518	0.0303	0.3301	1.0400e-003	0.1369	8.4000e-004	0.1378	0.0363	7.8000e-004	0.0371		103.7508	103.7508	2.1100e-003		103.8036
Total	**0.3646**	**11.0051**	**3.5927**	**0.0470**	**1.2302**	**0.0254**	**1.2557**	**0.3354**	**0.0243**	**0.3597**		**5,052.4356**	**5,052.4356**	**0.2839**		**5,059.5333**

3.2 Site Preparation - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999	0.0000	3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**8.1298**	**1.0868**	**9.2166**	**4.4688**	**0.9999**	**5.4687**	**0.0000**	**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3127	10.9749	3.2626	0.0460	1.0185	0.0246	1.0431	0.2807	0.0235	0.3043		4,948.6848	4,948.6848	0.2818		4,955.7297
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0518	0.0303	0.3301	1.0400e-003	0.1262	8.4000e-004	0.1271	0.0337	7.8000e-004	0.0345		103.7508	103.7508	2.1100e-003		103.8036
Total	**0.3646**	**11.0051**	**3.5927**	**0.0470**	**1.1447**	**0.0254**	**1.1701**	**0.3144**	**0.0243**	**0.3387**		**5,052.4356**	**5,052.4356**	**0.2839**		**5,059.5333**

3.3 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.3641	0.0000	7.3641	3.4551	0.0000	3.4551			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404		6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**7.3641**	**1.1309**	**8.4950**	**3.4551**	**1.0404**	**4.4956**		**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0576	0.0336	0.3667	1.1600e-003	0.1521	9.4000e-004	0.1531	0.0404	8.6000e-004	0.0412		115.2787	115.2787	2.3400e-003		115.3373
Total	**0.0576**	**0.0336**	**0.3667**	**1.1600e-003**	**0.1521**	**9.4000e-004**	**0.1531**	**0.0404**	**8.6000e-004**	**0.0412**		**115.2787**	**115.2787**	**2.3400e-003**		**115.3373**

3.3 Grading - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.3139	0.0000	3.3139	1.5548	0.0000	1.5548			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404	0.0000	6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**3.3139**	**1.1309**	**4.4448**	**1.5548**	**1.0404**	**2.5952**	**0.0000**	**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0576	0.0336	0.3667	1.1600e-003	0.1402	9.4000e-004	0.1412	0.0374	8.6000e-004	0.0383		115.2787	115.2787	2.3400e-003		115.3373
Total	**0.0576**	**0.0336**	**0.3667**	**1.1600e-003**	**0.1402**	**9.4000e-004**	**0.1412**	**0.0374**	**8.6000e-004**	**0.0383**		**115.2787**	**115.2787**	**2.3400e-003**		**115.3373**

3.4 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0596					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9747**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0432	0.0252	0.2751	8.7000e-004	0.1141	7.0000e-004	0.1148	0.0303	6.5000e-004	0.0309		86.4590	86.4590	1.7600e-003		86.5030
Total	**0.0432**	**0.0252**	**0.2751**	**8.7000e-004**	**0.1141**	**7.0000e-004**	**0.1148**	**0.0303**	**6.5000e-004**	**0.0309**		**86.4590**	**86.4590**	**1.7600e-003**		**86.5030**

3.4 Paving - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0596					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9747**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0432	0.0252	0.2751	8.7000e-004	0.1052	7.0000e-004	0.1059	0.0281	6.5000e-004	0.0287		86.4590	86.4590	1.7600e-003		86.5030
Total	**0.0432**	**0.0252**	**0.2751**	**8.7000e-004**	**0.1052**	**7.0000e-004**	**0.1059**	**0.0281**	**6.5000e-004**	**0.0287**		**86.4590**	**86.4590**	**1.7600e-003**		**86.5030**

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0493	9.3147	11.0490	0.0200		0.3891	0.3891		0.3689	0.3689		1,879.8458	1,879.8458	0.3821		1,889.3986
Total	**1.0493**	**9.3147**	**11.0490**	**0.0200**		**0.3891**	**0.3891**		**0.3689**	**0.3689**		**1,879.8458**	**1,879.8458**	**0.3821**		**1,889.3986**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3361	12.2986	3.2426	0.0365	2.3227	0.0166	2.3393	0.6105	0.0159	0.6264		3,875.2922	3,875.2922	0.2067		3,880.4598
Worker	1.5344	0.8617	9.5629	0.0312	11.6846	0.0255	11.7101	2.9526	0.0235	2.9760		3,113.4444	3,113.4444	0.0598		3,114.9391
Total	**1.8704**	**13.1603**	**12.8055**	**0.0677**	**14.0072**	**0.0421**	**14.0494**	**3.5631**	**0.0394**	**3.6024**		**6,988.7366**	**6,988.7366**	**0.2665**		**6,995.3989**

3.5 Building Construction - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0493	9.3147	11.0490	0.0200		0.3891	0.3891		0.3689	0.3689	0.0000	1,879.8458	1,879.8458	0.3821		1,889.3986
Total	**1.0493**	**9.3147**	**11.0490**	**0.0200**		**0.3891**	**0.3891**		**0.3689**	**0.3689**	**0.0000**	**1,879.8458**	**1,879.8458**	**0.3821**		**1,889.3986**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3361	12.2986	3.2426	0.0365	2.1382	0.0166	2.1548	0.5653	0.0159	0.5811		3,875.2922	3,875.2922	0.2067		3,880.4598
Worker	1.5344	0.8617	9.5629	0.0312	10.6833	0.0255	10.7088	2.7068	0.0235	2.7303		3,113.4444	3,113.4444	0.0598		3,114.9391
Total	**1.8704**	**13.1603**	**12.8055**	**0.0677**	**12.8215**	**0.0421**	**12.8636**	**3.2720**	**0.0394**	**3.3114**		**6,988.7366**	**6,988.7366**	**0.2665**		**6,995.3989**

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0493	9.3147	11.0490	0.0200		0.3891	0.3891		0.3689	0.3689		1,879.8458	1,879.8458	0.3821		1,889.3986
Total	**1.0493**	**9.3147**	**11.0490**	**0.0200**		**0.3891**	**0.3891**		**0.3689**	**0.3689**		**1,879.8458**	**1,879.8458**	**0.3821**		**1,889.3986**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3243	12.0919	3.1059	0.0363	2.3226	0.0158	2.3384	0.6105	0.0151	0.6256		3,855.7834	3,855.7834	0.2045		3,860.8957
Worker	1.4542	0.7884	8.9094	0.0301	11.6846	0.0243	11.7088	2.9526	0.0223	2.9749		3,005.8674	3,005.8674	0.0544		3,007.2275
Total	**1.7786**	**12.8803**	**12.0153**	**0.0664**	**14.0072**	**0.0400**	**14.0472**	**3.5631**	**0.0374**	**3.6004**		**6,861.6508**	**6,861.6508**	**0.2589**		**6,868.1232**

3.5 Building Construction - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0493	9.3147	11.0490	0.0200		0.3891	0.3891		0.3689	0.3689	0.0000	1,879.8458	1,879.8458	0.3821		1,889.3986
Total	**1.0493**	**9.3147**	**11.0490**	**0.0200**		**0.3891**	**0.3891**		**0.3689**	**0.3689**	**0.0000**	**1,879.8458**	**1,879.8458**	**0.3821**		**1,889.3986**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3243	12.0919	3.1059	0.0363	2.1381	0.0158	2.1539	0.5652	0.0151	0.5803		3,855.7834	3,855.7834	0.2045		3,860.8957
Worker	1.4542	0.7884	8.9094	0.0301	10.6833	0.0243	10.7075	2.7068	0.0223	2.7291		3,005.8674	3,005.8674	0.0544		3,007.2275
Total	**1.7786**	**12.8803**	**12.0153**	**0.0664**	**12.8214**	**0.0400**	**12.8614**	**3.2720**	**0.0374**	**3.3094**		**6,861.6508**	**6,861.6508**	**0.2589**		**6,868.1232**

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0493	9.3147	11.0490	0.0200		0.3891	0.3891		0.3689	0.3689		1,879.8458	1,879.8458	0.3821		1,889.3986
Total	**1.0493**	**9.3147**	**11.0490**	**0.0200**		**0.3891**	**0.3891**		**0.3689**	**0.3689**		**1,879.8458**	**1,879.8458**	**0.3821**		**1,889.3986**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3139	11.9165	2.9900	0.0361	2.3226	0.0150	2.3376	0.6105	0.0144	0.6248		3,839.2108	3,839.2108	0.2022		3,844.2667
Worker	1.3701	0.7233	8.3345	0.0292	11.6846	0.0226	11.7072	2.9526	0.0208	2.9734		2,910.3431	2,910.3431	0.0498		2,911.5873
Total	**1.6841**	**12.6398**	**11.3245**	**0.0653**	**14.0071**	**0.0376**	**14.0448**	**3.5630**	**0.0352**	**3.5982**		**6,749.5539**	**6,749.5539**	**0.2520**		**6,755.8540**

3.5 Building Construction - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0493	9.3147	11.0490	0.0200		0.3891	0.3891		0.3689	0.3689	0.0000	1,879.8458	1,879.8458	0.3821		1,889.3986
Total	**1.0493**	**9.3147**	**11.0490**	**0.0200**		**0.3891**	**0.3891**		**0.3689**	**0.3689**	**0.0000**	**1,879.8458**	**1,879.8458**	**0.3821**		**1,889.3986**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3139	11.9165	2.9900	0.0361	2.1381	0.0150	2.1531	0.5652	0.0144	0.5796		3,839.2108	3,839.2108	0.2022		3,844.2667
Worker	1.3701	0.7233	8.3345	0.0292	10.6833	0.0226	10.7059	2.7068	0.0208	2.7276		2,910.3431	2,910.3431	0.0498		2,911.5873
Total	**1.6841**	**12.6398**	**11.3245**	**0.0653**	**12.8214**	**0.0376**	**12.8590**	**3.2720**	**0.0352**	**3.3072**		**6,749.5539**	**6,749.5539**	**0.2520**		**6,755.8540**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0493	9.3147	11.0490	0.0200		0.3891	0.3891		0.3689	0.3689		1,879.8458	1,879.8458	0.3821		1,889.3986
Total	**1.0493**	**9.3147**	**11.0490**	**0.0200**		**0.3891**	**0.3891**		**0.3689**	**0.3689**		**1,879.8458**	**1,879.8458**	**0.3821**		**1,889.3986**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3045	11.7497	2.8927	0.0360	2.3225	0.0143	2.3368	0.6105	0.0136	0.6241		3,824.1235	3,824.1235	0.2000		3,829.1232
Worker	1.2779	0.6626	7.7813	0.0283	11.6846	0.0211	11.7057	2.9526	0.0194	2.9719		2,825.6500	2,825.6500	0.0454		2,826.7838
Total	**1.5824**	**12.4122**	**10.6740**	**0.0643**	**14.0071**	**0.0353**	**14.0424**	**3.5630**	**0.0330**	**3.5960**		**6,649.7735**	**6,649.7735**	**0.2453**		**6,655.9070**

3.5 Building Construction - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0493	9.3147	11.0490	0.0200		0.3891	0.3891		0.3689	0.3689	0.0000	1,879.8458	1,879.8458	0.3821		1,889.3986
Total	**1.0493**	**9.3147**	**11.0490**	**0.0200**		**0.3891**	**0.3891**		**0.3689**	**0.3689**	**0.0000**	**1,879.8458**	**1,879.8458**	**0.3821**		**1,889.3986**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3045	11.7497	2.8927	0.0360	2.1380	0.0143	2.1523	0.5652	0.0136	0.5788		3,824.1235	3,824.1235	0.2000		3,829.1232
Worker	1.2779	0.6626	7.7813	0.0283	10.6833	0.0211	10.7044	2.7068	0.0194	2.7262		2,825.6500	2,825.6500	0.0454		2,826.7838
Total	**1.5824**	**12.4122**	**10.6740**	**0.0643**	**12.8213**	**0.0353**	**12.8566**	**3.2720**	**0.0330**	**3.3050**		**6,649.7735**	**6,649.7735**	**0.2453**		**6,655.9070**

3.5 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9190	5.6475	10.8602	0.0224		0.1083	0.1083		0.1083	0.1083		2,089.6114	2,089.6114	0.0818		2,091.6567
Total	**0.9190**	**5.6475**	**10.8602**	**0.0224**		**0.1083**	**0.1083**		**0.1083**	**0.1083**		**2,089.6114**	**2,089.6114**	**0.0818**		**2,091.6567**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2961	11.5934	2.8124	0.0358	2.3225	0.0135	2.3359	0.6104	0.0129	0.6233		3,810.6129	3,810.6129	0.1977		3,815.5542
Worker	1.1886	0.6077	7.2836	0.0276	11.6846	0.0196	11.7042	2.9526	0.0181	2.9706		2,751.0216	2,751.0216	0.0414		2,752.0572
Total	**1.4846**	**12.2011**	**10.0960**	**0.0634**	**14.0070**	**0.0331**	**14.0401**	**3.5630**	**0.0310**	**3.5939**		**6,561.6345**	**6,561.6345**	**0.2391**		**6,567.6114**

3.5 Building Construction - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9190	5.6475	10.8602	0.0224		0.1083	0.1083		0.1083	0.1083	0.0000	2,089.6114	2,089.6114	0.0818		2,091.6567
Total	**0.9190**	**5.6475**	**10.8602**	**0.0224**		**0.1083**	**0.1083**		**0.1083**	**0.1083**	**0.0000**	**2,089.6114**	**2,089.6114**	**0.0818**		**2,091.6567**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2961	11.5934	2.8124	0.0358	2.1380	0.0135	2.1515	0.5652	0.0129	0.5781		3,810.6129	3,810.6129	0.1977		3,815.5542
Worker	1.1886	0.6077	7.2836	0.0276	10.6833	0.0196	10.7029	2.7068	0.0181	2.7248		2,751.0216	2,751.0216	0.0414		2,752.0572
Total	**1.4846**	**12.2011**	**10.0960**	**0.0634**	**12.8213**	**0.0331**	**12.8544**	**3.2719**	**0.0310**	**3.3029**		**6,561.6345**	**6,561.6345**	**0.2391**		**6,567.6114**

3.6 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**6.0682**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3063	0.1720	1.9092	6.2300e-003	2.3328	5.0900e-003	2.3378	0.5895	4.6900e-003	0.5941		621.5789	621.5789	0.0119		621.8773
Total	**0.3063**	**0.1720**	**1.9092**	**6.2300e-003**	**2.3328**	**5.0900e-003**	**2.3378**	**0.5895**	**4.6900e-003**	**0.5941**		**621.5789**	**621.5789**	**0.0119**		**621.8773**

3.6 Architectural Coating - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**6.0682**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3063	0.1720	1.9092	6.2300e-003	2.1329	5.0900e-003	2.1379	0.5404	4.6900e-003	0.5451		621.5789	621.5789	0.0119		621.8773
Total	**0.3063**	**0.1720**	**1.9092**	**6.2300e-003**	**2.1329**	**5.0900e-003**	**2.1379**	**0.5404**	**4.6900e-003**	**0.5451**		**621.5789**	**621.5789**	**0.0119**		**621.8773**

3.6 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**6.0682**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2903	0.1574	1.7787	6.0200e-003	2.3328	4.8400e-003	2.3376	0.5895	4.4600e-003	0.5939		600.1019	600.1019	0.0109		600.3734
Total	**0.2903**	**0.1574**	**1.7787**	**6.0200e-003**	**2.3328**	**4.8400e-003**	**2.3376**	**0.5895**	**4.4600e-003**	**0.5939**		**600.1019**	**600.1019**	**0.0109**		**600.3734**

3.6 Architectural Coating - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**6.0682**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2903	0.1574	1.7787	6.0200e-003	2.1329	4.8400e-003	2.1377	0.5404	4.4600e-003	0.5449		600.1019	600.1019	0.0109		600.3734
Total	**0.2903**	**0.1574**	**1.7787**	**6.0200e-003**	**2.1329**	**4.8400e-003**	**2.1377**	**0.5404**	**4.4600e-003**	**0.5449**		**600.1019**	**600.1019**	**0.0109**		**600.3734**

3.6 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**6.0682**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2735	0.1444	1.6639	5.8300e-003	2.3328	4.5200e-003	2.3373	0.5895	4.1600e-003	0.5936		581.0311	581.0311	9.9400e-003		581.2795
Total	**0.2735**	**0.1444**	**1.6639**	**5.8300e-003**	**2.3328**	**4.5200e-003**	**2.3373**	**0.5895**	**4.1600e-003**	**0.5936**		**581.0311**	**581.0311**	**9.9400e-003**		**581.2795**

3.6 Architectural Coating - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**6.0682**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2735	0.1444	1.6639	5.8300e-003	2.1329	4.5200e-003	2.1374	0.5404	4.1600e-003	0.5446		581.0311	581.0311	9.9400e-003		581.2795
Total	**0.2735**	**0.1444**	**1.6639**	**5.8300e-003**	**2.1329**	**4.5200e-003**	**2.1374**	**0.5404**	**4.1600e-003**	**0.5446**		**581.0311**	**581.0311**	**9.9400e-003**		**581.2795**

3.6 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**6.0682**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2551	0.1323	1.5535	5.6600e-003	2.3328	4.2100e-003	2.3370	0.5895	3.8700e-003	0.5933		564.1226	564.1226	9.0500e-003		564.3490
Total	**0.2551**	**0.1323**	**1.5535**	**5.6600e-003**	**2.3328**	**4.2100e-003**	**2.3370**	**0.5895**	**3.8700e-003**	**0.5933**		**564.1226**	**564.1226**	**9.0500e-003**		**564.3490**

3.6 Architectural Coating - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**6.0682**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2551	0.1323	1.5535	5.6600e-003	2.1329	4.2100e-003	2.1371	0.5404	3.8700e-003	0.5443		564.1226	564.1226	9.0500e-003		564.3490
Total	**0.2551**	**0.1323**	**1.5535**	**5.6600e-003**	**2.1329**	**4.2100e-003**	**2.1371**	**0.5404**	**3.8700e-003**	**0.5443**		**564.1226**	**564.1226**	**9.0500e-003**		**564.3490**

3.6 Architectural Coating - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**6.0281**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2373	0.1213	1.4541	5.5000e-003	2.3328	3.9200e-003	2.3367	0.5895	3.6100e-003	0.5931		549.2236	549.2236	8.2700e-003		549.4303
Total	**0.2373**	**0.1213**	**1.4541**	**5.5000e-003**	**2.3328**	**3.9200e-003**	**2.3367**	**0.5895**	**3.6100e-003**	**0.5931**		**549.2236**	**549.2236**	**8.2700e-003**		**549.4303**

3.6 Architectural Coating - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**6.0281**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2373	0.1213	1.4541	5.5000e-003	2.1329	3.9200e-003	2.1368	0.5404	3.6100e-003	0.5440		549.2236	549.2236	8.2700e-003		549.4303
Total	**0.2373**	**0.1213**	**1.4541**	**5.5000e-003**	**2.1329**	**3.9200e-003**	**2.1368**	**0.5404**	**3.6100e-003**	**0.5440**		**549.2236**	**549.2236**	**8.2700e-003**		**549.4303**

3.7 Site Preparation for Rancho Cordova Widening - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999		3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.0663**	**1.0868**	**19.1531**	**9.9307**	**0.9999**	**10.9305**		**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0467	0.0253	0.2859	9.7000e-004	0.1369	7.8000e-004	0.1377	0.0363	7.2000e-004	0.0370		96.4449	96.4449	1.7500e-003		96.4886
Total	**0.0467**	**0.0253**	**0.2859**	**9.7000e-004**	**0.1369**	**7.8000e-004**	**0.1377**	**0.0363**	**7.2000e-004**	**0.0370**		**96.4449**	**96.4449**	**1.7500e-003**		**96.4886**

3.7 Site Preparation for Rancho Cordova Widening - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999	0.0000	3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**8.1298**	**1.0868**	**9.2166**	**4.4688**	**0.9999**	**5.4687**	**0.0000**	**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0467	0.0253	0.2859	9.7000e-004	0.1262	7.8000e-004	0.1270	0.0337	7.2000e-004	0.0344		96.4449	96.4449	1.7500e-003		96.4886
Total	**0.0467**	**0.0253**	**0.2859**	**9.7000e-004**	**0.1262**	**7.8000e-004**	**0.1270**	**0.0337**	**7.2000e-004**	**0.0344**		**96.4449**	**96.4449**	**1.7500e-003**		**96.4886**

3.8 Paving for Rancho Cordova widening - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0457					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9609**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0389	0.0211	0.2382	8.1000e-004	0.1141	6.5000e-004	0.1148	0.0303	6.0000e-004	0.0309		80.3708	80.3708	1.4500e-003		80.4072
Total	**0.0389**	**0.0211**	**0.2382**	**8.1000e-004**	**0.1141**	**6.5000e-004**	**0.1148**	**0.0303**	**6.0000e-004**	**0.0309**		**80.3708**	**80.3708**	**1.4500e-003**		**80.4072**

3.8 Paving for Rancho Cordova widening - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0457					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9609**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0389	0.0211	0.2382	8.1000e-004	0.1052	6.5000e-004	0.1058	0.0281	6.0000e-004	0.0287		80.3708	80.3708	1.4500e-003		80.4072
Total	**0.0389**	**0.0211**	**0.2382**	**8.1000e-004**	**0.1052**	**6.5000e-004**	**0.1058**	**0.0281**	**6.0000e-004**	**0.0287**		**80.3708**	**80.3708**	**1.4500e-003**		**80.4072**

3.8 Paving for Rancho Cordova widening - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0457					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9609**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0366	0.0193	0.2229	7.8000e-004	0.1141	6.1000e-004	0.1147	0.0303	5.6000e-004	0.0308		77.8167	77.8167	1.3300e-003		77.8499
Total	**0.0366**	**0.0193**	**0.2229**	**7.8000e-004**	**0.1141**	**6.1000e-004**	**0.1147**	**0.0303**	**5.6000e-004**	**0.0308**		**77.8167**	**77.8167**	**1.3300e-003**		**77.8499**

3.8 Paving for Rancho Cordova widening - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0457					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9609**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0366	0.0193	0.2229	7.8000e-004	0.1052	6.1000e-004	0.1058	0.0281	5.6000e-004	0.0286		77.8167	77.8167	1.3300e-003		77.8499
Total	**0.0366**	**0.0193**	**0.2229**	**7.8000e-004**	**0.1052**	**6.1000e-004**	**0.1058**	**0.0281**	**5.6000e-004**	**0.0286**		**77.8167**	**77.8167**	**1.3300e-003**		**77.8499**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.6998	15.3082	34.5036	0.1546	19.2071	0.0813	19.2884	5.1280	0.0755	5.2035		15,784.9424	15,784.9424	0.6050		15,800.0662
Unmitigated	2.6998	15.3082	34.5036	0.1546	19.2071	0.0813	19.2884	5.1280	0.0755	5.2035		15,784.9424	15,784.9424	0.6050		15,800.0662

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	2.91	35.04	25.78	19,864	19,864
City Park	20.37	245.25	180.46	139,050	139,050
Parking Lot	0.00	0.00	0.00		
Retirement Community	708.00	598.85	575.25	1,728,128	1,728,128
Single Family Housing	2,522.80	2,626.15	2284.30	6,424,236	6,424,236
Total	3,254.08	3,505.28	3,065.79	8,311,277	8,311,277

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Parking Lot	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.3077	2.6297	1.1190	0.0168		0.2126	0.2126		0.2126	0.2126		3,357.0718	3,357.0718	0.0643	0.0616	3,377.0212
NaturalGas Unmitigated	0.3077	2.6297	1.1190	0.0168		0.2126	0.2126		0.2126	0.2126		3,357.0718	3,357.0718	0.0643	0.0616	3,377.0212

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	9778.42	0.1055	0.9012	0.3835	5.7500e-003		0.0729	0.0729		0.0729	0.0729		1,150.4021	1,150.4021	0.0221	0.0211	1,157.2383
Single Family Housing	18756.7	0.2023	1.7286	0.7356	0.0110		0.1398	0.1398		0.1398	0.1398		2,206.6697	2,206.6697	0.0423	0.0405	2,219.7829
Total		**0.3077**	**2.6297**	**1.1190**	**0.0168**		**0.2126**	**0.2126**		**0.2126**	**0.2126**		**3,357.0718**	**3,357.0718**	**0.0643**	**0.0616**	**3,377.0212**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Retirement Community	9.77842	0.1055	0.9012	0.3835	5.7500e-003		0.0729	0.0729		0.0729	0.0729		1,150.4021	1,150.4021	0.0221	0.0211	1,157.2383
Single Family Housing	18.7567	0.2023	1.7286	0.7356	0.0110		0.1398	0.1398		0.1398	0.1398		2,206.6697	2,206.6697	0.0423	0.0405	2,219.7829
Total		**0.3077**	**2.6297**	**1.1190**	**0.0168**		**0.2126**	**0.2126**		**0.2126**	**0.2126**		**3,357.0718**	**3,357.0718**	**0.0643**	**0.0616**	**3,377.0212**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	20.7674	0.5312	46.0397	2.4400e-003		0.2562	0.2562		0.2562	0.2562	0.0000	83.1923	83.1923	0.0792	0.0000	85.1723
Unmitigated	20.7674	0.5312	46.0397	2.4400e-003		0.2562	0.2562		0.2562	0.2562	0.0000	83.1923	83.1923	0.0792	0.0000	85.1723

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.6697					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	16.7210					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3767	0.5312	46.0397	2.4400e-003		0.2562	0.2562		0.2562	0.2562		83.1923	83.1923	0.0792		85.1723
Total	**20.7674**	**0.5312**	**46.0397**	**2.4400e-003**		**0.2562**	**0.2562**		**0.2562**	**0.2562**	**0.0000**	**83.1923**	**83.1923**	**0.0792**	**0.0000**	**85.1723**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.6697					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	16.7210					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3767	0.5312	46.0397	2.4400e-003		0.2562	0.2562		0.2562	0.2562		83.1923	83.1923	0.0792		85.1723
Total	**20.7674**	**0.5312**	**46.0397**	**2.4400e-003**		**0.2562**	**0.2562**		**0.2562**	**0.2562**	**0.0000**	**83.1923**	**83.1923**	**0.0792**	**0.0000**	**85.1723**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

The Ranch - City of Rancho Cordova (Construction Only - Phase 4)

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	215.00	Dwelling Unit	5.66	215,000.00	574
Regional Shopping Center	32.00	1000sqft	0.73	32,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Estimated construction state date of March 2030 (provided by Applicant).

Land Use - This model run provides construction emissions only.

Construction Phase - Phase 4

Off-road Equipment -

Trips and VMT - -

Grading - Total of 38,177 soil export. 13.8 acres graded during this phase (as provided by project applicant).

Architectural Coating - 75 g/L as provided by SMAQMD (average as provided by the air district).

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust -

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 28.33% - reflects project person/du value (2.523) vs. statewide avg. (2.97) and latest statewide data (ARB). Parking Degreaser EF red. by 57.5% (corrects for walking paths modeled as 'parking lot').

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%. NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	75.00

tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	75.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	75.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	86.00
tblConstructionPhase	NumDays	20.00	85.00
tblConstructionPhase	NumDays	230.00	459.00
tblConstructionPhase	NumDays	230.00	348.00
tblConstructionPhase	NumDays	20.00	88.00
tblConstructionPhase	NumDays	20.00	65.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	10.00	43.00
tblGrading	AcresOfGrading	44.00	6.90
tblGrading	AcresOfGrading	32.50	6.90
tblGrading	MaterialExported	0.00	19,089.00
tblGrading	MaterialExported	0.00	19,089.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblTripsAndVMT	HaulingTripNumber	1,887.00	0.00
tblTripsAndVMT	HaulingTripNumber	1,887.00	0.00
tblTripsAndVMT	VendorTripNumber	28.00	0.00

tblTripsAndVMT	VendorTripNumber	28.00	0.00
tblTripsAndVMT	WorkerTripNumber	165.00	0.00
tblTripsAndVMT	WorkerTripNumber	165.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2030	0.1301	0.6456	1.1713	2.7700e-003	0.4760	0.0223	0.4983	0.2576	0.0223	0.2798	0.0000	238.5250	238.5250	0.0104	0.0000	238.7854
2031	0.1632	0.9952	1.8343	4.4800e-003	0.3646	0.0153	0.3799	0.0926	0.0153	0.1079	0.0000	392.2421	392.2421	0.0144	0.0000	392.6010
2032	0.2138	1.3190	2.4225	5.9300e-003	0.4849	0.0203	0.5052	0.1232	0.0203	0.1435	0.0000	519.4118	519.4118	0.0190	0.0000	519.8854
2033	1.1280	0.0375	0.0917	1.9000e-004	0.0103	9.0000e-004	0.0112	2.7400e-003	9.0000e-004	3.6400e-003	0.0000	16.8734	16.8734	5.1000e-004	0.0000	16.8863
2034	0.2920	1.6757	2.9554	7.2300e-003	0.7307	0.0392	0.7699	0.3599	0.0392	0.3990	0.0000	628.1880	628.1880	0.0249	0.0000	628.8102
2035	1.2410	0.7384	1.4798	3.6300e-003	0.1156	7.8300e-003	0.1235	0.0310	7.8000e-003	0.0388	0.0000	317.2670	317.2670	0.0108	0.0000	317.5359
Maximum	**1.2410**	**1.6757**	**2.9554**	**7.2300e-003**	**0.7307**	**0.0392**	**0.7699**	**0.3599**	**0.0392**	**0.3990**	**0.0000**	**628.1880**	**628.1880**	**0.0249**	**0.0000**	**628.8102**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2030	0.1301	0.6456	1.1713	2.7700e-003	0.2183	0.0223	0.2406	0.1170	0.0223	0.1393	0.0000	238.5247	238.5247	0.0104	0.0000	238.7851
2031	0.1632	0.9952	1.8343	4.4800e-003	0.3337	0.0153	0.3490	0.0850	0.0153	0.1003	0.0000	392.2418	392.2418	0.0144	0.0000	392.6007
2032	0.2138	1.3190	2.4225	5.9300e-003	0.4437	0.0203	0.4641	0.1131	0.0203	0.1334	0.0000	519.4113	519.4113	0.0190	0.0000	519.8850
2033	1.1280	0.0375	0.0917	1.9000e-004	9.5000e-003	9.0000e-004	0.0104	2.5400e-003	9.0000e-004	3.4400e-003	0.0000	16.8734	16.8734	5.1000e-004	0.0000	16.8863
2034	0.2920	1.6757	2.9554	7.2300e-003	0.3965	0.0392	0.4357	0.1804	0.0392	0.2195	0.0000	628.1875	628.1875	0.0249	0.0000	628.8096
2035	1.2410	0.7384	1.4798	3.6300e-003	0.1068	7.8300e-003	0.1147	0.0289	7.8000e-003	0.0367	0.0000	317.2668	317.2668	0.0108	0.0000	317.5356
Maximum	**1.2410**	**1.6757**	**2.9554**	**7.2300e-003**	**0.4437**	**0.0392**	**0.4641**	**0.1804**	**0.0392**	**0.2195**	**0.0000**	**628.1875**	**628.1875**	**0.0249**	**0.0000**	**628.8096**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**30.87**	**0.00**	**29.44**	**39.23**	**0.00**	**34.97**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**3-1-2030**	**5-31-2030**	0.3865	0.3865
2	**6-1-2030**	**8-31-2030**	0.3001	0.3001
3	**9-1-2030**	**11-30-2030**	0.0947	0.0947
5	**3-1-2031**	**5-31-2031**	0.2563	0.2563
6	**6-1-2031**	**8-31-2031**	0.3866	0.3866

7	**9-1-2031**	**11-30-2031**	0.3831	0.3831
8	**12-1-2031**	**2-29-2032**	0.3820	0.3820
9	**3-1-2032**	**5-31-2032**	0.3849	0.3849
10	**6-1-2032**	**8-31-2032**	0.3846	0.3846
11	**9-1-2032**	**11-30-2032**	0.3810	0.3810
12	**12-1-2032**	**2-28-2033**	0.7079	0.7079
13	**3-1-2033**	**5-31-2033**	0.5877	0.5877
17	**3-1-2034**	**5-31-2034**	0.7946	0.7946
18	**6-1-2034**	**8-31-2034**	0.5766	0.5766
19	**9-1-2034**	**11-30-2034**	0.4632	0.4632
20	**12-1-2034**	**2-28-2035**	0.3549	0.3549
21	**3-1-2035**	**5-31-2035**	0.3519	0.3519
22	**6-1-2035**	**8-31-2035**	0.2369	0.2369
23	**9-1-2035**	**9-30-2035**	0.2893	0.2893
		Highest	0.7946	0.7946

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.1801	0.0255	2.2098	1.2000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	3.6226	3.6226	3.4500e-003	0.0000	3.7088
Energy	0.0122	0.1051	0.0482	6.7000e-004		8.4500e-003	8.4500e-003		8.4500e-003	8.4500e-003	0.0000	465.2707	465.2707	0.0192	5.7200e-003	467.4555
Mobile	0.3649	1.9047	3.8512	0.0176	2.0210	9.1600e-003	2.0301	0.5411	8.5100e-003	0.5496	0.0000	1,624.9707	1,624.9707	0.0621	0.0000	1,626.5228
Waste						0.0000	0.0000		0.0000	0.0000	26.8963	0.0000	26.8963	1.5895	0.0000	66.6345
Water						0.0000	0.0000		0.0000	0.0000	5.7947	31.4889	37.2836	0.0215	0.0129	41.6716
Total	**1.5573**	**2.0352**	**6.1093**	**0.0183**	**2.0210**	**0.0299**	**2.0509**	**0.5411**	**0.0293**	**0.5704**	**32.6910**	**2,125.3529**	**2,158.0439**	**1.6958**	**0.0186**	**2,205.9932**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.1801	0.0255	2.2098	1.2000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	3.6226	3.6226	3.4500e-003	0.0000	3.7088
Energy	0.0122	0.1051	0.0482	6.7000e-004		8.4500e-003	8.4500e-003		8.4500e-003	8.4500e-003	0.0000	465.2707	465.2707	0.0192	5.7200e-003	467.4555
Mobile	0.3649	1.9047	3.8512	0.0176	2.0210	9.1600e-003	2.0301	0.5411	8.5100e-003	0.5496	0.0000	1,624.9707	1,624.9707	0.0621	0.0000	1,626.5228
Waste						0.0000	0.0000		0.0000	0.0000	26.8963	0.0000	26.8963	1.5895	0.0000	66.6345
Water						0.0000	0.0000		0.0000	0.0000	5.7947	31.4889	37.2836	0.0215	0.0129	41.6716
Total	**1.5573**	**2.0352**	**6.1093**	**0.0183**	**2.0210**	**0.0299**	**2.0509**	**0.5411**	**0.0293**	**0.5704**	**32.6910**	**2,125.3529**	**2,158.0439**	**1.6958**	**0.0186**	**2,205.9932**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	1,585.9200
Vegetation Land Change	-1,057.2430
Total	**528.6770**

3.0 Construction Detail

Construction Phase

The Ranch - City of Rancho Cordova (Construction Only - Phase 4) - Sacramento County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation for multifamily residential	Site Preparation	3/1/2030	4/1/2030	5	22	
2	Grading for multifamily residential	Grading	4/2/2030	8/1/2030	5	88	
3	Paving for multifamily residential	Paving	8/2/2030	10/1/2030	5	43	
4	Building Construction for multifamily residential	Building Construction	4/1/2031	12/31/2032	5	459	
5	Architectural Coating for multifamily residential	Architectural Coating	1/1/2033	4/29/2033	5	85	
6	Site Preparation for commercial	Site Preparation	3/1/2034	4/28/2034	5	43	
7	Building Construction for commercial	Building Construction	4/1/2034	8/1/2035	5	348	
8	Grading and Improvements for commercial	Grading	4/2/2034	6/30/2034	5	65	
9	Paving for commercial	Paving	8/1/2034	9/28/2034	5	43	
10	Architectural Coating for commercial	Architectural Coating	9/1/2035	12/31/2035	5	86	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 435,375; Residential Outdoor: 145,125; Non-Residential Indoor: 48,000; Non-Residential Outdoor: 16,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation for multifamily residential	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation for multifamily residential	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading for multifamily residential	Excavators	1	8.00	158	0.38
Grading for multifamily residential	Graders	1	8.00	187	0.41
Grading for multifamily residential	Rubber Tired Dozers	1	8.00	247	0.40

Grading for multifamily residential	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving for multifamily residential	Pavers	2	8.00	130	0.42
Paving for multifamily residential	Paving Equipment	2	8.00	132	0.36
Paving for multifamily residential	Rollers	2	8.00	80	0.38
Building Construction for multifamily residential	Cranes	1	7.00	231	0.29
Building Construction for multifamily residential	Forklifts	3	8.00	89	0.20
Building Construction for multifamily residential	Generator Sets	1	8.00	84	0.74
Building Construction for multifamily residential	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction for multifamily residential	Welders	1	8.00	46	0.45
Architectural Coating for multifamily residential	Air Compressors	1	6.00	78	0.48
Site Preparation for commercial	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation for commercial	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction for commercial	Cranes	1	7.00	231	0.29
Building Construction for commercial	Forklifts	3	8.00	89	0.20
Building Construction for commercial	Generator Sets	1	8.00	84	0.74
Building Construction for commercial	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction for commercial	Welders	1	8.00	46	0.45
Grading and Improvements for commercial	Excavators	1	8.00	158	0.38
Grading and Improvements for commercial	Graders	1	8.00	187	0.41
Grading and Improvements for commercial	Rubber Tired Dozers	1	8.00	247	0.40
Grading and Improvements for commercial	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving for commercial	Pavers	2	8.00	130	0.42
Paving for commercial	Paving Equipment	2	8.00	132	0.36
Paving for commercial	Rollers	2	8.00	80	0.38
Architectural Coating for commercial	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation for multifamily residential	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading for multifamily residential	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving for multifamily residential	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction for multifamily resident	9	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction for multifamily resident	9	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction for multifamily resident	9	165.00	28.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating for multifamily resident	1	33.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation for commercial	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction for commercial	9	165.00	28.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading and Improvements for com	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving for commercial	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating for commercial	1	33.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation for multifamily residential - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1987	0.0000	0.1987	0.1092	0.0000	0.1092	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0268	0.1504	0.1792	5.1000e-004		4.8000e-003	4.8000e-003		4.8000e-003	4.8000e-003	0.0000	44.0051	44.0051	2.1700e-003	0.0000	44.0594
Total	**0.0268**	**0.1504**	**0.1792**	**5.1000e-004**	**0.1987**	**4.8000e-003**	**0.2035**	**0.1092**	**4.8000e-003**	**0.1140**	**0.0000**	**44.0051**	**44.0051**	**2.1700e-003**	**0.0000**	**44.0594**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9000e-004	1.9000e-004	2.5900e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	3.9000e-004	0.0000	0.9067	0.9067	1.0000e-005	0.0000	0.9070
Total	**3.9000e-004**	**1.9000e-004**	**2.5900e-003**	**1.0000e-005**	**1.4500e-003**	**1.0000e-005**	**1.4600e-003**	**3.9000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**0.9067**	**0.9067**	**1.0000e-005**	**0.0000**	**0.9070**

3.2 Site Preparation for multifamily residential - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0894	0.0000	0.0894	0.0492	0.0000	0.0492	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0268	0.1504	0.1792	5.1000e-004		4.8000e-003	4.8000e-003		4.8000e-003	4.8000e-003	0.0000	44.0050	44.0050	2.1700e-003	0.0000	44.0593
Total	**0.0268**	**0.1504**	**0.1792**	**5.1000e-004**	**0.0894**	**4.8000e-003**	**0.0942**	**0.0492**	**4.8000e-003**	**0.0540**	**0.0000**	**44.0050**	**44.0050**	**2.1700e-003**	**0.0000**	**44.0593**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9000e-004	1.9000e-004	2.5900e-003	1.0000e-005	1.3400e-003	1.0000e-005	1.3500e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	0.9067	0.9067	1.0000e-005	0.0000	0.9070
Total	**3.9000e-004**	**1.9000e-004**	**2.5900e-003**	**1.0000e-005**	**1.3400e-003**	**1.0000e-005**	**1.3500e-003**	**3.6000e-004**	**1.0000e-005**	**3.7000e-004**	**0.0000**	**0.9067**	**0.9067**	**1.0000e-005**	**0.0000**	**0.9070**

3.3 Grading for multifamily residential - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2686	0.0000	0.2686	0.1461	0.0000	0.1461	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0712	0.3410	0.6359	1.6000e-003		0.0103	0.0103		0.0103	0.0103	0.0000	137.3003	137.3003	5.7300e-003	0.0000	137.4437
Total	**0.0712**	**0.3410**	**0.6359**	**1.6000e-003**	**0.2686**	**0.0103**	**0.2789**	**0.1461**	**0.0103**	**0.1564**	**0.0000**	**137.3003**	**137.3003**	**5.7300e-003**	**0.0000**	**137.4437**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-003	6.4000e-004	8.6200e-003	3.0000e-005	4.8500e-003	2.0000e-005	4.8700e-003	1.2900e-003	2.0000e-005	1.3100e-003	0.0000	3.0222	3.0222	5.0000e-005	0.0000	3.0233
Total	**1.3000e-003**	**6.4000e-004**	**8.6200e-003**	**3.0000e-005**	**4.8500e-003**	**2.0000e-005**	**4.8700e-003**	**1.2900e-003**	**2.0000e-005**	**1.3100e-003**	**0.0000**	**3.0222**	**3.0222**	**5.0000e-005**	**0.0000**	**3.0233**

3.3 Grading for multifamily residential - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1209	0.0000	0.1209	0.0657	0.0000	0.0657	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0712	0.3410	0.6359	1.6000e-003		0.0103	0.0103		0.0103	0.0103	0.0000	137.3002	137.3002	5.7300e-003	0.0000	137.4435
Total	**0.0712**	**0.3410**	**0.6359**	**1.6000e-003**	**0.1209**	**0.0103**	**0.1312**	**0.0657**	**0.0103**	**0.0760**	**0.0000**	**137.3002**	**137.3002**	**5.7300e-003**	**0.0000**	**137.4435**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-003	6.4000e-004	8.6200e-003	3.0000e-005	4.4700e-003	2.0000e-005	4.4900e-003	1.2000e-003	2.0000e-005	1.2200e-003	0.0000	3.0222	3.0222	5.0000e-005	0.0000	3.0233
Total	**1.3000e-003**	**6.4000e-004**	**8.6200e-003**	**3.0000e-005**	**4.4700e-003**	**2.0000e-005**	**4.4900e-003**	**1.2000e-003**	**2.0000e-005**	**1.2200e-003**	**0.0000**	**3.0222**	**3.0222**	**5.0000e-005**	**0.0000**	**3.0233**

3.4 Paving for multifamily residential - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0298	0.1531	0.3408	6.0000e-004		7.1100e-003	7.1100e-003		7.1100e-003	7.1100e-003	0.0000	51.8140	51.8140	2.4300e-003	0.0000	51.8747
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0298**	**0.1531**	**0.3408**	**6.0000e-004**		**7.1100e-003**	**7.1100e-003**		**7.1100e-003**	**7.1100e-003**	**0.0000**	**51.8140**	**51.8140**	**2.4300e-003**	**0.0000**	**51.8747**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	3.1000e-004	4.2100e-003	2.0000e-005	2.3700e-003	1.0000e-005	2.3800e-003	6.3000e-004	1.0000e-005	6.4000e-004	0.0000	1.4768	1.4768	2.0000e-005	0.0000	1.4773
Total	**6.3000e-004**	**3.1000e-004**	**4.2100e-003**	**2.0000e-005**	**2.3700e-003**	**1.0000e-005**	**2.3800e-003**	**6.3000e-004**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**1.4768**	**1.4768**	**2.0000e-005**	**0.0000**	**1.4773**

3.4 Paving for multifamily residential - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0298	0.1531	0.3408	6.0000e-004		7.1100e-003	7.1100e-003		7.1100e-003	7.1100e-003	0.0000	51.8139	51.8139	2.4300e-003	0.0000	51.8746
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0298**	**0.1531**	**0.3408**	**6.0000e-004**		**7.1100e-003**	**7.1100e-003**		**7.1100e-003**	**7.1100e-003**	**0.0000**	**51.8139**	**51.8139**	**2.4300e-003**	**0.0000**	**51.8746**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	3.1000e-004	4.2100e-003	2.0000e-005	2.1800e-003	1.0000e-005	2.2000e-003	5.8000e-004	1.0000e-005	6.0000e-004	0.0000	1.4768	1.4768	2.0000e-005	0.0000	1.4773
Total	**6.3000e-004**	**3.1000e-004**	**4.2100e-003**	**2.0000e-005**	**2.1800e-003**	**1.0000e-005**	**2.2000e-003**	**5.8000e-004**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**1.4768**	**1.4768**	**2.0000e-005**	**0.0000**	**1.4773**

3.5 Building Construction for multifamily residential - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1290	0.7816	1.5915	3.0500e-003		0.0146	0.0146		0.0146	0.0146	0.0000	258.9181	258.9181	0.0104	0.0000	259.1778
Total	**0.1290**	**0.7816**	**1.5915**	**3.0500e-003**		**0.0146**	**0.0146**		**0.0146**	**0.0146**	**0.0000**	**258.9181**	**258.9181**	**0.0104**	**0.0000**	**259.1778**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.8300e-003	0.1993	0.0441	6.3000e-004	0.0389	2.2000e-004	0.0391	0.0102	2.1000e-004	0.0105	0.0000	60.6709	60.6709	2.9500e-003	0.0000	60.7446
Worker	0.0294	0.0144	0.1987	8.0000e-004	0.3257	5.3000e-004	0.3262	0.0824	4.9000e-004	0.0829	0.0000	72.6531	72.6531	1.0200e-003	0.0000	72.6786
Total	**0.0342**	**0.2137**	**0.2428**	**1.4300e-003**	**0.3646**	**7.5000e-004**	**0.3653**	**0.0926**	**7.0000e-004**	**0.0933**	**0.0000**	**133.3240**	**133.3240**	**3.9700e-003**	**0.0000**	**133.4232**

3.5 Building Construction for multifamily residential - 2031

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1290	0.7816	1.5915	3.0500e-003		0.0146	0.0146		0.0146	0.0146	0.0000	258.9178	258.9178	0.0104	0.0000	259.1775
Total	**0.1290**	**0.7816**	**1.5915**	**3.0500e-003**		**0.0146**	**0.0146**		**0.0146**	**0.0146**	**0.0000**	**258.9178**	**258.9178**	**0.0104**	**0.0000**	**259.1775**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.8300e-003	0.1993	0.0441	6.3000e-004	0.0358	2.2000e-004	0.0360	9.4900e-003	2.1000e-004	9.6900e-003	0.0000	60.6709	60.6709	2.9500e-003	0.0000	60.7446
Worker	0.0294	0.0144	0.1987	8.0000e-004	0.2979	5.3000e-004	0.2984	0.0756	4.9000e-004	0.0760	0.0000	72.6531	72.6531	1.0200e-003	0.0000	72.6786
Total	**0.0342**	**0.2137**	**0.2428**	**1.4300e-003**	**0.3337**	**7.5000e-004**	**0.3344**	**0.0851**	**7.0000e-004**	**0.0857**	**0.0000**	**133.3240**	**133.3240**	**3.9700e-003**	**0.0000**	**133.4232**

3.5 Building Construction for multifamily residential - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1715	1.0394	2.1166	4.0600e-003		0.0194	0.0194		0.0194	0.0194	0.0000	344.3479	344.3479	0.0138	0.0000	344.6933
Total	**0.1715**	**1.0394**	**2.1166**	**4.0600e-003**		**0.0194**	**0.0194**		**0.0194**	**0.0194**	**0.0000**	**344.3479**	**344.3479**	**0.0138**	**0.0000**	**344.6933**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.2900e-003	0.2620	0.0576	8.3000e-004	0.0517	2.8000e-004	0.0520	0.0136	2.6000e-004	0.0139	0.0000	80.4871	80.4871	3.8900e-003	0.0000	80.5843
Worker	0.0360	0.0176	0.2484	1.0400e-003	0.4332	6.5000e-004	0.4338	0.1096	6.0000e-004	0.1102	0.0000	94.5767	94.5767	1.2400e-003	0.0000	94.6078
Total	**0.0423**	**0.2796**	**0.3060**	**1.8700e-003**	**0.4849**	**9.3000e-004**	**0.4858**	**0.1232**	**8.6000e-004**	**0.1241**	**0.0000**	**175.0638**	**175.0638**	**5.1300e-003**	**0.0000**	**175.1921**

3.5 Building Construction for multifamily residential - 2032

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1715	1.0394	2.1166	4.0600e-003		0.0194	0.0194		0.0194	0.0194	0.0000	344.3475	344.3475	0.0138	0.0000	344.6929
Total	**0.1715**	**1.0394**	**2.1166**	**4.0600e-003**		**0.0194**	**0.0194**		**0.0194**	**0.0194**	**0.0000**	**344.3475**	**344.3475**	**0.0138**	**0.0000**	**344.6929**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.2900e-003	0.2620	0.0576	8.3000e-004	0.0476	2.8000e-004	0.0479	0.0126	2.6000e-004	0.0129	0.0000	80.4871	80.4871	3.8900e-003	0.0000	80.5843
Worker	0.0360	0.0176	0.2484	1.0400e-003	0.3961	6.5000e-004	0.3968	0.1005	6.0000e-004	0.1011	0.0000	94.5767	94.5767	1.2400e-003	0.0000	94.6078
Total	**0.0423**	**0.2796**	**0.3060**	**1.8700e-003**	**0.4437**	**9.3000e-004**	**0.4447**	**0.1131**	**8.6000e-004**	**0.1140**	**0.0000**	**175.0638**	**175.0638**	**5.1300e-003**	**0.0000**	**175.1921**

3.6 Architectural Coating for multifamily residential - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.1202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5600e-003	0.0364	0.0764	1.3000e-004		8.6000e-004	8.6000e-004		8.6000e-004	8.6000e-004	0.0000	10.8513	10.8513	4.4000e-004	0.0000	10.8623
Total	**1.1258**	**0.0364**	**0.0764**	**1.3000e-004**		**8.6000e-004**	**8.6000e-004**		**8.6000e-004**	**8.6000e-004**	**0.0000**	**10.8513**	**10.8513**	**4.4000e-004**	**0.0000**	**10.8623**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1700e-003	1.0600e-003	0.0153	7.0000e-005	0.0103	4.0000e-005	0.0103	2.7400e-003	4.0000e-005	2.7800e-003	0.0000	6.0221	6.0221	7.0000e-005	0.0000	6.0240
Total	**2.1700e-003**	**1.0600e-003**	**0.0153**	**7.0000e-005**	**0.0103**	**4.0000e-005**	**0.0103**	**2.7400e-003**	**4.0000e-005**	**2.7800e-003**	**0.0000**	**6.0221**	**6.0221**	**7.0000e-005**	**0.0000**	**6.0240**

3.6 Architectural Coating for multifamily residential - 2033

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.1202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5600e-003	0.0364	0.0764	1.3000e-004		8.6000e-004	8.6000e-004		8.6000e-004	8.6000e-004	0.0000	10.8513	10.8513	4.4000e-004	0.0000	10.8623
Total	**1.1258**	**0.0364**	**0.0764**	**1.3000e-004**		**8.6000e-004**	**8.6000e-004**		**8.6000e-004**	**8.6000e-004**	**0.0000**	**10.8513**	**10.8513**	**4.4000e-004**	**0.0000**	**10.8623**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1700e-003	1.0600e-003	0.0153	7.0000e-005	9.5000e-003	4.0000e-005	9.5400e-003	2.5400e-003	4.0000e-005	2.5800e-003	0.0000	6.0221	6.0221	7.0000e-005	0.0000	6.0240
Total	**2.1700e-003**	**1.0600e-003**	**0.0153**	**7.0000e-005**	**9.5000e-003**	**4.0000e-005**	**9.5400e-003**	**2.5400e-003**	**4.0000e-005**	**2.5800e-003**	**0.0000**	**6.0221**	**6.0221**	**7.0000e-005**	**0.0000**	**6.0240**

3.7 Site Preparation for commercial - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3884	0.0000	0.3884	0.2135	0.0000	0.2135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0525	0.2939	0.3503	1.0000e-003		9.3900e-003	9.3900e-003		9.3900e-003	9.3900e-003	0.0000	86.0099	86.0099	4.2400e-003	0.0000	86.1160
Total	**0.0525**	**0.2939**	**0.3503**	**1.0000e-003**	**0.3884**	**9.3900e-003**	**0.3978**	**0.2135**	**9.3900e-003**	**0.2229**	**0.0000**	**86.0099**	**86.0099**	**4.2400e-003**	**0.0000**	**86.1160**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	2.7000e-004	3.9800e-003	2.0000e-005	2.8400e-003	1.0000e-005	2.8500e-003	7.6000e-004	1.0000e-005	7.7000e-004	0.0000	1.6344	1.6344	2.0000e-005	0.0000	1.6349
Total	**5.6000e-004**	**2.7000e-004**	**3.9800e-003**	**2.0000e-005**	**2.8400e-003**	**1.0000e-005**	**2.8500e-003**	**7.6000e-004**	**1.0000e-005**	**7.7000e-004**	**0.0000**	**1.6344**	**1.6344**	**2.0000e-005**	**0.0000**	**1.6349**

3.7 Site Preparation for commercial - 2034

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1748	0.0000	0.1748	0.0961	0.0000	0.0961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0525	0.2939	0.3503	1.0000e-003		9.3900e-003	9.3900e-003		9.3900e-003	9.3900e-003	0.0000	86.0098	86.0098	4.2400e-003	0.0000	86.1159
Total	**0.0525**	**0.2939**	**0.3503**	**1.0000e-003**	**0.1748**	**9.3900e-003**	**0.1842**	**0.0961**	**9.3900e-003**	**0.1055**	**0.0000**	**86.0098**	**86.0098**	**4.2400e-003**	**0.0000**	**86.1159**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	2.7000e-004	3.9800e-003	2.0000e-005	2.6200e-003	1.0000e-005	2.6300e-003	7.0000e-004	1.0000e-005	7.1000e-004	0.0000	1.6344	1.6344	2.0000e-005	0.0000	1.6349
Total	**5.6000e-004**	**2.7000e-004**	**3.9800e-003**	**2.0000e-005**	**2.6200e-003**	**1.0000e-005**	**2.6300e-003**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**1.6344**	**1.6344**	**2.0000e-005**	**0.0000**	**1.6349**

3.8 Building Construction for commercial - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1276	0.7736	1.5753	3.0200e-003		0.0144	0.0144		0.0144	0.0144	0.0000	256.2895	256.2895	0.0103	0.0000	256.5465
Total	**0.1276**	**0.7736**	**1.5753**	**3.0200e-003**		**0.0144**	**0.0144**		**0.0144**	**0.0144**	**0.0000**	**256.2895**	**256.2895**	**0.0103**	**0.0000**	**256.5465**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.5300e-003	0.1911	0.0416	6.2000e-004	0.0160	1.9000e-004	0.0161	4.6100e-003	1.8000e-004	4.7900e-003	0.0000	59.6628	59.6628	2.8500e-003	0.0000	59.7340
Worker	0.0233	0.0114	0.1655	7.5000e-004	0.1182	4.2000e-004	0.1186	0.0314	3.9000e-004	0.0318	0.0000	67.9416	67.9416	7.9000e-004	0.0000	67.9614
Total	**0.0278**	**0.2024**	**0.2071**	**1.3700e-003**	**0.1341**	**6.1000e-004**	**0.1347**	**0.0360**	**5.7000e-004**	**0.0366**	**0.0000**	**127.6044**	**127.6044**	**3.6400e-003**	**0.0000**	**127.6954**

3.8 Building Construction for commercial - 2034

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1276	0.7736	1.5753	3.0200e-003		0.0144	0.0144		0.0144	0.0144	0.0000	256.2892	256.2892	0.0103	0.0000	256.5462
Total	**0.1276**	**0.7736**	**1.5753**	**3.0200e-003**		**0.0144**	**0.0144**		**0.0144**	**0.0144**	**0.0000**	**256.2892**	**256.2892**	**0.0103**	**0.0000**	**256.5462**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.5300e-003	0.1911	0.0416	6.2000e-004	0.0149	1.9000e-004	0.0151	4.3600e-003	1.8000e-004	4.5400e-003	0.0000	59.6628	59.6628	2.8500e-003	0.0000	59.7340
Worker	0.0233	0.0114	0.1655	7.5000e-004	0.1090	4.2000e-004	0.1094	0.0292	3.9000e-004	0.0296	0.0000	67.9416	67.9416	7.9000e-004	0.0000	67.9614
Total	**0.0278**	**0.2024**	**0.2071**	**1.3700e-003**	**0.1239**	**6.1000e-004**	**0.1245**	**0.0335**	**5.7000e-004**	**0.0341**	**0.0000**	**127.6044**	**127.6044**	**3.6400e-003**	**0.0000**	**127.6954**

3.8 Building Construction for commercial - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0931	0.5478	1.2330	2.3700e-003		6.9200e-003	6.9200e-003		6.9200e-003	6.9200e-003	0.0000	201.0887	201.0887	7.4900e-003	0.0000	201.2759
Total	**0.0931**	**0.5478**	**1.2330**	**2.3700e-003**		**6.9200e-003**	**6.9200e-003**		**6.9200e-003**	**6.9200e-003**	**0.0000**	**201.0887**	**201.0887**	**7.4900e-003**	**0.0000**	**201.2759**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5000e-003	0.1486	0.0322	4.8000e-004	0.0125	1.5000e-004	0.0127	3.6100e-003	1.4000e-004	3.7500e-003	0.0000	46.7412	46.7412	2.2200e-003	0.0000	46.7966
Worker	0.0172	8.4400e-003	0.1236	5.8000e-004	0.0927	3.1000e-004	0.0930	0.0247	2.9000e-004	0.0249	0.0000	52.5505	52.5505	5.8000e-004	0.0000	52.5649
Total	**0.0207**	**0.1571**	**0.1558**	**1.0600e-003**	**0.1052**	**4.6000e-004**	**0.1057**	**0.0283**	**4.3000e-004**	**0.0287**	**0.0000**	**99.2917**	**99.2917**	**2.8000e-003**	**0.0000**	**99.3616**

3.8 Building Construction for commercial - 2035

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0931	0.5478	1.2330	2.3700e-003		6.9200e-003	6.9200e-003		6.9200e-003	6.9200e-003	0.0000	201.0884	201.0884	7.4900e-003	0.0000	201.2757
Total	**0.0931**	**0.5478**	**1.2330**	**2.3700e-003**		**6.9200e-003**	**6.9200e-003**		**6.9200e-003**	**6.9200e-003**	**0.0000**	**201.0884**	**201.0884**	**7.4900e-003**	**0.0000**	**201.2757**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5000e-003	0.1486	0.0322	4.8000e-004	0.0117	1.5000e-004	0.0119	3.4200e-003	1.4000e-004	3.5600e-003	0.0000	46.7412	46.7412	2.2200e-003	0.0000	46.7966
Worker	0.0172	8.4400e-003	0.1236	5.8000e-004	0.0855	3.1000e-004	0.0858	0.0229	2.9000e-004	0.0232	0.0000	52.5505	52.5505	5.8000e-004	0.0000	52.5649
Total	**0.0207**	**0.1571**	**0.1558**	**1.0600e-003**	**0.0972**	**4.6000e-004**	**0.0977**	**0.0263**	**4.3000e-004**	**0.0267**	**0.0000**	**99.2917**	**99.2917**	**2.8000e-003**	**0.0000**	**99.3616**

3.9 Grading and Improvements for commercial - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1994	0.0000	0.1994	0.1080	0.0000	0.1080	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0526	0.2519	0.4697	1.1800e-003		7.6100e-003	7.6100e-003		7.6100e-003	7.6100e-003	0.0000	101.4150	101.4150	4.2400e-003	0.0000	101.5209
Total	**0.0526**	**0.2519**	**0.4697**	**1.1800e-003**	**0.1994**	**7.6100e-003**	**0.2070**	**0.1080**	**7.6100e-003**	**0.1156**	**0.0000**	**101.4150**	**101.4150**	**4.2400e-003**	**0.0000**	**101.5209**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.1000e-004	3.4000e-004	5.0200e-003	2.0000e-005	3.5800e-003	1.0000e-005	3.5900e-003	9.5000e-004	1.0000e-005	9.6000e-004	0.0000	2.0588	2.0588	2.0000e-005	0.0000	2.0594
Total	**7.1000e-004**	**3.4000e-004**	**5.0200e-003**	**2.0000e-005**	**3.5800e-003**	**1.0000e-005**	**3.5900e-003**	**9.5000e-004**	**1.0000e-005**	**9.6000e-004**	**0.0000**	**2.0588**	**2.0588**	**2.0000e-005**	**0.0000**	**2.0594**

3.9 Grading and Improvements for commercial - 2034

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0897	0.0000	0.0897	0.0486	0.0000	0.0486	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0526	0.2519	0.4697	1.1800e-003		7.6100e-003	7.6100e-003		7.6100e-003	7.6100e-003	0.0000	101.4149	101.4149	4.2400e-003	0.0000	101.5208
Total	**0.0526**	**0.2519**	**0.4697**	**1.1800e-003**	**0.0897**	**7.6100e-003**	**0.0973**	**0.0486**	**7.6100e-003**	**0.0562**	**0.0000**	**101.4149**	**101.4149**	**4.2400e-003**	**0.0000**	**101.5208**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.1000e-004	3.4000e-004	5.0200e-003	2.0000e-005	3.3000e-003	1.0000e-005	3.3100e-003	8.8000e-004	1.0000e-005	9.0000e-004	0.0000	2.0588	2.0588	2.0000e-005	0.0000	2.0594
Total	**7.1000e-004**	**3.4000e-004**	**5.0200e-003**	**2.0000e-005**	**3.3000e-003**	**1.0000e-005**	**3.3100e-003**	**8.8000e-004**	**1.0000e-005**	**9.0000e-004**	**0.0000**	**2.0588**	**2.0588**	**2.0000e-005**	**0.0000**	**2.0594**

3.10 Paving for commercial - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0298	0.1531	0.3408	6.0000e-004		7.1100e-003	7.1100e-003		7.1100e-003	7.1100e-003	0.0000	51.8140	51.8140	2.4300e-003	0.0000	51.8747
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0298**	**0.1531**	**0.3408**	**6.0000e-004**		**7.1100e-003**	**7.1100e-003**		**7.1100e-003**	**7.1100e-003**	**0.0000**	**51.8140**	**51.8140**	**2.4300e-003**	**0.0000**	**51.8747**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7000e-004	2.3000e-004	3.3200e-003	2.0000e-005	2.3700e-003	1.0000e-005	2.3800e-003	6.3000e-004	1.0000e-005	6.4000e-004	0.0000	1.3620	1.3620	2.0000e-005	0.0000	1.3624
Total	**4.7000e-004**	**2.3000e-004**	**3.3200e-003**	**2.0000e-005**	**2.3700e-003**	**1.0000e-005**	**2.3800e-003**	**6.3000e-004**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**1.3620**	**1.3620**	**2.0000e-005**	**0.0000**	**1.3624**

3.10 Paving for commercial - 2034

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0298	0.1531	0.3408	6.0000e-004		7.1100e-003	7.1100e-003		7.1100e-003	7.1100e-003	0.0000	51.8139	51.8139	2.4300e-003	0.0000	51.8746
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0298**	**0.1531**	**0.3408**	**6.0000e-004**		**7.1100e-003**	**7.1100e-003**		**7.1100e-003**	**7.1100e-003**	**0.0000**	**51.8139**	**51.8139**	**2.4300e-003**	**0.0000**	**51.8746**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7000e-004	2.3000e-004	3.3200e-003	2.0000e-005	2.1800e-003	1.0000e-005	2.1900e-003	5.8000e-004	1.0000e-005	5.9000e-004	0.0000	1.3620	1.3620	2.0000e-005	0.0000	1.3624
Total	**4.7000e-004**	**2.3000e-004**	**3.3200e-003**	**2.0000e-005**	**2.1800e-003**	**1.0000e-005**	**2.1900e-003**	**5.8000e-004**	**1.0000e-005**	**5.9000e-004**	**0.0000**	**1.3620**	**1.3620**	**2.0000e-005**	**0.0000**	**1.3624**

3.11 Architectural Coating for commercial - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.1202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0700e-003	0.0326	0.0772	1.3000e-004		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	10.9790	10.9790	4.1000e-004	0.0000	10.9891
Total	**1.1253**	**0.0326**	**0.0772**	**1.3000e-004**		**4.3000e-004**	**4.3000e-004**		**4.3000e-004**	**4.3000e-004**	**0.0000**	**10.9790**	**10.9790**	**4.1000e-004**	**0.0000**	**10.9891**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9300e-003	9.5000e-004	0.0139	7.0000e-005	0.0104	3.0000e-005	0.0105	2.7700e-003	3.0000e-005	2.8000e-003	0.0000	5.9076	5.9076	6.0000e-005	0.0000	5.9093
Total	**1.9300e-003**	**9.5000e-004**	**0.0139**	**7.0000e-005**	**0.0104**	**3.0000e-005**	**0.0105**	**2.7700e-003**	**3.0000e-005**	**2.8000e-003**	**0.0000**	**5.9076**	**5.9076**	**6.0000e-005**	**0.0000**	**5.9093**

3.11 Architectural Coating for commercial - 2035

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.1202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0700e-003	0.0326	0.0772	1.3000e-004		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	10.9790	10.9790	4.1000e-004	0.0000	10.9891
Total	**1.1253**	**0.0326**	**0.0772**	**1.3000e-004**		**4.3000e-004**	**4.3000e-004**		**4.3000e-004**	**4.3000e-004**	**0.0000**	**10.9790**	**10.9790**	**4.1000e-004**	**0.0000**	**10.9891**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9300e-003	9.5000e-004	0.0139	7.0000e-005	9.6100e-003	3.0000e-005	9.6500e-003	2.5700e-003	3.0000e-005	2.6100e-003	0.0000	5.9076	5.9076	6.0000e-005	0.0000	5.9093
Total	**1.9300e-003**	**9.5000e-004**	**0.0139**	**7.0000e-005**	**9.6100e-003**	**3.0000e-005**	**9.6500e-003**	**2.5700e-003**	**3.0000e-005**	**2.6100e-003**	**0.0000**	**5.9076**	**5.9076**	**6.0000e-005**	**0.0000**	**5.9093**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3649	1.9047	3.8512	0.0176	2.0210	9.1600e-003	2.0301	0.5411	8.5100e-003	0.5496	0.0000	1,624.9707	1,624.9707	0.0621	0.0000	1,626.5228
Unmitigated	0.3649	1.9047	3.8512	0.0176	2.0210	9.1600e-003	2.0301	0.5411	8.5100e-003	0.5496	0.0000	1,624.9707	1,624.9707	0.0621	0.0000	1,626.5228

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,429.75	1,373.85	1259.90	3,586,137	3,586,137
Regional Shopping Center	1,366.40	1,599.04	807.68	1,844,187	1,844,187
Total	2,796.15	2,972.89	2,067.58	5,430,324	5,430,324

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Regional Shopping Center	10.00	5.00	6.50	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Regional Shopping Center	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	344.1732	344.1732	0.0169	3.5000e-003	345.6384
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	344.1732	344.1732	0.0169	3.5000e-003	345.6384
NaturalGas Mitigated	0.0122	0.1051	0.0482	6.7000e-004		8.4500e-003	8.4500e-003		8.4500e-003	8.4500e-003	0.0000	121.0975	121.0975	2.3200e-003	2.2200e-003	121.8171
NaturalGas Unmitigated	0.0122	0.1051	0.0482	6.7000e-004		8.4500e-003	8.4500e-003		8.4500e-003	8.4500e-003	0.0000	121.0975	121.0975	2.3200e-003	2.2200e-003	121.8171

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.09584e+006	0.0113	0.0966	0.0411	6.2000e-004		7.8100e-003	7.8100e-003		7.8100e-003	7.8100e-003	0.0000	111.8421	111.8421	2.1400e-003	2.0500e-003	112.5067
Regional Shopping Center	173440	9.4000e-004	8.5000e-003	7.1400e-003	5.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	9.2554	9.2554	1.8000e-004	1.7000e-004	9.3104
Total		**0.0122**	**0.1051**	**0.0482**	**6.7000e-004**		**8.4600e-003**	**8.4600e-003**		**8.4600e-003**	**8.4600e-003**	**0.0000**	**121.0975**	**121.0975**	**2.3200e-003**	**2.2200e-003**	**121.8171**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.09584e+006	0.0113	0.0966	0.0411	6.2000e-004		7.8100e-003	7.8100e-003		7.8100e-003	7.8100e-003	0.0000	111.8421	111.8421	2.1400e-003	2.0500e-003	112.5067
Regional Shopping Center	173440	9.4000e-004	8.5000e-003	7.1400e-003	5.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	9.2554	9.2554	1.8000e-004	1.7000e-004	9.3104
Total		**0.0122**	**0.1051**	**0.0482**	**6.7000e-004**		**8.4600e-003**	**8.4600e-003**		**8.4600e-003**	**8.4600e-003**	**0.0000**	**121.0975**	**121.0975**	**2.3200e-003**	**2.2200e-003**	**121.8171**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	915139	245.0377	0.0120	2.4900e-003	246.0808
Regional Shopping Center	370240	99.1355	4.8700e-003	1.0100e-003	99.5575
Total		**344.1732**	**0.0169**	**3.5000e-003**	**345.6384**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	915139	245.0377	0.0120	2.4900e-003	246.0808
Regional Shopping Center	370240	99.1355	4.8700e-003	1.0100e-003	99.5575
Total		**344.1732**	**0.0169**	**3.5000e-003**	**345.6384**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.1801	0.0255	2.2098	1.2000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	3.6226	3.6226	3.4500e-003	0.0000	3.7088
Unmitigated	1.1801	0.0255	2.2098	1.2000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	3.6226	3.6226	3.4500e-003	0.0000	3.7088

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1494					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.9647					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0661	0.0255	2.2098	1.2000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	3.6226	3.6226	3.4500e-003	0.0000	3.7088
Total	**1.1801**	**0.0255**	**2.2098**	**1.2000e-004**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**3.6226**	**3.6226**	**3.4500e-003**	**0.0000**	**3.7088**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1494					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.9647					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0661	0.0255	2.2098	1.2000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	3.6226	3.6226	3.4500e-003	0.0000	3.7088
Total	**1.1801**	**0.0255**	**2.2098**	**1.2000e-004**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**3.6226**	**3.6226**	**3.4500e-003**	**0.0000**	**3.7088**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	37.2836	0.0215	0.0129	41.6716
Unmitigated	37.2836	0.0215	0.0129	41.6716

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	14.0081 / 8.8312	31.9212	0.0184	0.0111	35.6742
Regional Shopping Center	2.37032 / 1.45278	5.3625	3.1100e-003	1.8700e-003	5.9973
Total		**37.2836**	**0.0215**	**0.0129**	**41.6716**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	14.0081 / 8.8312	31.9212	0.0184	0.0111	35.6742
Regional Shopping Center	2.37032 / 1.45278	5.3625	3.1100e-003	1.8700e-003	5.9973
Total		**37.2836**	**0.0215**	**0.0129**	**41.6716**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	26.8963	1.5895	0.0000	66.6345
Unmitigated	26.8963	1.5895	0.0000	66.6345

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	98.9	20.0758	1.1865	0.0000	49.7370
Regional Shopping Center	33.6	6.8205	0.4031	0.0000	16.8975
Total		**26.8963**	**1.5895**	**0.0000**	**66.6345**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	98.9	20.0758	1.1865	0.0000	49.7370
Regional Shopping Center	33.6	6.8205	0.4031	0.0000	16.8975
Total		**26.8963**	**1.5895**	**0.0000**	**66.6345**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	528.6770	0.0000	0.0000	528.6770

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	530.1 / 284.8	-1,057.2430	0.0000	0.0000	-1,057.2430
Total		**-1,057.2430**	**0.0000**	**0.0000**	**-1,057.2430**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	2240	1,585.9200	0.0000	0.0000	1,585.9200
Total		**1,585.9200**	**0.0000**	**0.0000**	**1,585.9200**

The Ranch - City of Rancho Cordova (Construction Only - Phase 4)

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	215.00	Dwelling Unit	5.66	215,000.00	574
Regional Shopping Center	32.00	1000sqft	0.73	32,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Estimated construction state date of March 2030 (provided by Applicant).

Land Use - This model run provides construction emissions only.

Construction Phase - Phase 4

Off-road Equipment -

Trips and VMT - -

Grading - Total of 38,177 soil export. 13.8 acres graded during this phase (as provided by project applicant).

Architectural Coating - 75 g/L as provided by SMAQMD (average as provided by the air district).

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust -

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 28.33% - reflects project person/du value (2.523) vs. statewide avg. (2.97) and latest statewide data (ARB). Parking Degreaser EF red. by 57.5% (corrects for walking paths modeled as 'parking lot').

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%. NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	75.00

tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	75.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	75.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	86.00
tblConstructionPhase	NumDays	20.00	85.00
tblConstructionPhase	NumDays	230.00	459.00
tblConstructionPhase	NumDays	230.00	348.00
tblConstructionPhase	NumDays	20.00	88.00
tblConstructionPhase	NumDays	20.00	65.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	10.00	43.00
tblGrading	AcresOfGrading	44.00	6.90
tblGrading	AcresOfGrading	32.50	6.90
tblGrading	MaterialExported	0.00	19,089.00
tblGrading	MaterialExported	0.00	19,089.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblTripsAndVMT	HaulingTripNumber	1,887.00	0.00
tblTripsAndVMT	HaulingTripNumber	1,887.00	0.00
tblTripsAndVMT	VendorTripNumber	28.00	0.00

tblTripsAndVMT	VendorTripNumber	28.00	0.00
tblTripsAndVMT	WorkerTripNumber	165.00	0.00
tblTripsAndVMT	WorkerTripNumber	165.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2030	2.4805	13.6838	16.5741	0.0476	18.2032	0.4373	18.6405	9.9670	0.4372	10.4042	0.0000	4,510.2679	4,510.2679	0.2191	0.0000	4,515.7462
2031	1.6991	10.0676	19.0076	0.0464	3.8456	0.1557	4.0013	0.9759	0.1552	1.1310	0.0000	4,483.3162	4,483.3162	0.1611	0.0000	4,487.3427
2032	1.6710	10.0342	18.8598	0.0462	3.8456	0.1552	4.0008	0.9759	0.1547	1.1306	0.0000	4,462.6246	4,462.6246	0.1597	0.0000	4,466.6175
2033	26.5474	0.8791	2.2318	4.7000e-003	0.2510	0.0212	0.2723	0.0666	0.0212	0.0878	0.0000	454.3055	454.3055	0.0136	0.0000	454.6451
2034	5.7395	31.4183	49.7727	0.1305	25.8754	0.8260	26.7014	13.7010	0.8255	14.5265	0.0000	12,448.8962	12,448.8962	0.5208	0.0000	12,461.9164
2035	26.2206	9.1832	18.4776	0.0458	1.4235	0.0964	1.5199	0.3814	0.0960	0.4773	0.0000	4,416.3440	4,416.3440	0.1483	0.0000	4,420.0511
Maximum	**26.5474**	**31.4183**	**49.7727**	**0.1305**	**25.8754**	**0.8260**	**26.7014**	**13.7010**	**0.8255**	**14.5265**	**0.0000**	**12,448.8962**	**12,448.8962**	**0.5208**	**0.0000**	**12,461.9164**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2030	2.4805	13.6838	16.5741	0.0476	8.2560	0.4373	8.6933	4.5025	0.4372	4.9397	0.0000	4,510.2679	4,510.2679	0.2191	0.0000	4,515.7462
2031	1.6991	10.0676	19.0076	0.0464	3.5186	0.1557	3.6743	0.8956	0.1552	1.0508	0.0000	4,483.3162	4,483.3162	0.1611	0.0000	4,487.3427
2032	1.6710	10.0342	18.8598	0.0462	3.5186	0.1552	3.6738	0.8956	0.1547	1.0504	0.0000	4,462.6246	4,462.6246	0.1597	0.0000	4,466.6175
2033	26.5474	0.8791	2.2318	4.7000e-003	0.2314	0.0212	0.2526	0.0618	0.0212	0.0829	0.0000	454.3055	454.3055	0.0136	0.0000	454.6450
2034	5.7395	31.4183	49.7727	0.1305	12.4363	0.8260	13.2623	6.3803	0.8255	7.2057	0.0000	12,448.8962	12,448.8962	0.5208	0.0000	12,461.9164
2035	26.2206	9.1832	18.4776	0.0458	1.3145	0.0964	1.4109	0.3546	0.0960	0.4506	0.0000	4,416.3440	4,416.3440	0.1483	0.0000	4,420.0511
Maximum	**26.5474**	**31.4183**	**49.7727**	**0.1305**	**12.4363**	**0.8260**	**13.2623**	**6.3803**	**0.8255**	**7.2057**	**0.0000**	**12,448.8962**	**12,448.8962**	**0.5208**	**0.0000**	**12,461.9164**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**45.22**	**0.00**	**43.83**	**49.78**	**0.00**	**46.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.6330	0.2040	17.6787	9.4000e-004		0.0984	0.0984		0.0984	0.0984	0.0000	31.9458	31.9458	0.0304	0.0000	32.7063
Energy	0.0671	0.5758	0.2643	3.6600e-003		0.0463	0.0463		0.0463	0.0463		731.4364	731.4364	0.0140	0.0134	735.7830
Mobile	2.8942	11.3492	25.8706	0.1131	12.4971	0.0549	12.5520	3.3365	0.0510	3.3875		11,530.5427	11,530.5427	0.4135		11,540.8797
Total	**9.5943**	**12.1289**	**43.8136**	**0.1177**	**12.4971**	**0.1996**	**12.6967**	**3.3365**	**0.1957**	**3.5322**	**0.0000**	**12,293.9249**	**12,293.9249**	**0.4579**	**0.0134**	**12,309.3690**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.6330	0.2040	17.6787	9.4000e-004		0.0984	0.0984		0.0984	0.0984	0.0000	31.9458	31.9458	0.0304	0.0000	32.7063
Energy	0.0671	0.5758	0.2643	3.6600e-003		0.0463	0.0463		0.0463	0.0463		731.4364	731.4364	0.0140	0.0134	735.7830
Mobile	2.8942	11.3492	25.8706	0.1131	12.4971	0.0549	12.5520	3.3365	0.0510	3.3875		11,530.5427	11,530.5427	0.4135		11,540.8797
Total	**9.5943**	**12.1289**	**43.8136**	**0.1177**	**12.4971**	**0.1996**	**12.6967**	**3.3365**	**0.1957**	**3.5322**	**0.0000**	**12,293.9249**	**12,293.9249**	**0.4579**	**0.0134**	**12,309.3690**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation for multifamily residential	Site Preparation	3/1/2030	4/1/2030	5	22	
2	Grading for multifamily residential	Grading	4/2/2030	8/1/2030	5	88	
3	Paving for multifamily residential	Paving	8/2/2030	10/1/2030	5	43	
4	Building Construction for multifamily residential	Building Construction	4/1/2031	12/31/2032	5	459	
5	Architectural Coating for multifamily residential	Architectural Coating	1/1/2033	4/29/2033	5	85	
6	Site Preparation for commercial	Site Preparation	3/1/2034	4/28/2034	5	43	
7	Building Construction for commercial	Building Construction	4/1/2034	8/1/2035	5	348	
8	Grading and Improvements for commercial	Grading	4/2/2034	6/30/2034	5	65	
9	Paving for commercial	Paving	8/1/2034	9/28/2034	5	43	
10	Architectural Coating for commercial	Architectural Coating	9/1/2035	12/31/2035	5	86	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 435,375; Residential Outdoor: 145,125; Non-Residential Indoor: 48,000; Non-Residential Outdoor: 16,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

The Ranch - City of Rancho Cordova (Construction Only - Phase 4) - Sacramento County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation for multifamily residential	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation for multifamily residential	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading for multifamily residential	Excavators	1	8.00	158	0.38
Grading for multifamily residential	Graders	1	8.00	187	0.41
Grading for multifamily residential	Rubber Tired Dozers	1	8.00	247	0.40
Grading for multifamily residential	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving for multifamily residential	Pavers	2	8.00	130	0.42
Paving for multifamily residential	Paving Equipment	2	8.00	132	0.36
Paving for multifamily residential	Rollers	2	8.00	80	0.38
Building Construction for multifamily residential	Cranes	1	7.00	231	0.29
Building Construction for multifamily residential	Forklifts	3	8.00	89	0.20
Building Construction for multifamily residential	Generator Sets	1	8.00	84	0.74
Building Construction for multifamily residential	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction for multifamily residential	Welders	1	8.00	46	0.45
Architectural Coating for multifamily residential	Air Compressors	1	6.00	78	0.48
Site Preparation for commercial	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation for commercial	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction for commercial	Cranes	1	7.00	231	0.29
Building Construction for commercial	Forklifts	3	8.00	89	0.20
Building Construction for commercial	Generator Sets	1	8.00	84	0.74
Building Construction for commercial	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction for commercial	Welders	1	8.00	46	0.45
Grading and Improvements for commercial	Excavators	1	8.00	158	0.38
Grading and Improvements for commercial	Graders	1	8.00	187	0.41

Grading and Improvements for commercial	Rubber Tired Dozers	1	8.00	247	0.40
Grading and Improvements for commercial	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving for commercial	Pavers	2	8.00	130	0.42
Paving for commercial	Paving Equipment	2	8.00	132	0.36
Paving for commercial	Rollers	2	8.00	80	0.38
Architectural Coating for commercial	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation for multifamily residential	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading for multifamily residential	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving for multifamily residential	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction for multifamily resident	9	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction for multifamily resident	9	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction for multifamily resident	9	165.00	28.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating for multifamily resident	1	33.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation for commercial	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction for commercial	9	165.00	28.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading and Improvements for com	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving for commercial	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating for commercial	1	33.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation for multifamily residential - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.4399	13.6680	16.2918	0.0466		0.4367	0.4367		0.4367	0.4367		4,409.7537	4,409.7537	0.2176		4,415.1936
Total	**2.4399**	**13.6680**	**16.2918**	**0.0466**	**18.0663**	**0.4367**	**18.5029**	**9.9307**	**0.4367**	**10.3673**		**4,409.7537**	**4,409.7537**	**0.2176**		**4,415.1936**

3.2 Site Preparation for multifamily residential - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0406	0.0159	0.2823	1.0100e-003	0.1369	6.3000e-004	0.1376	0.0363	5.8000e-004	0.0369		100.5142	100.5142	1.5400e-003		100.5527
Total	**0.0406**	**0.0159**	**0.2823**	**1.0100e-003**	**0.1369**	**6.3000e-004**	**0.1376**	**0.0363**	**5.8000e-004**	**0.0369**		**100.5142**	**100.5142**	**1.5400e-003**		**100.5527**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	2.4399	13.6680	16.2918	0.0466		0.4367	0.4367		0.4367	0.4367	0.0000	4,409.7537	4,409.7537	0.2176		4,415.1936
Total	**2.4399**	**13.6680**	**16.2918**	**0.0466**	**8.1298**	**0.4367**	**8.5665**	**4.4688**	**0.4367**	**4.9055**	**0.0000**	**4,409.7537**	**4,409.7537**	**0.2176**		**4,415.1936**

3.2 Site Preparation for multifamily residential - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0406	0.0159	0.2823	1.0100e-003	0.1262	6.3000e-004	0.1269	0.0337	5.8000e-004	0.0343		100.5142	100.5142	1.5400e-003		100.5527
Total	**0.0406**	**0.0159**	**0.2823**	**1.0100e-003**	**0.1262**	**6.3000e-004**	**0.1269**	**0.0337**	**5.8000e-004**	**0.0343**		**100.5142**	**100.5142**	**1.5400e-003**		**100.5527**

3.3 Grading for multifamily residential - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1052	0.0000	6.1052	3.3192	0.0000	3.3192			0.0000			0.0000
Off-Road	1.6179	7.7501	14.4518	0.0363		0.2340	0.2340		0.2340	0.2340		3,439.7201	3,439.7201	0.1437		3,443.3117
Total	**1.6179**	**7.7501**	**14.4518**	**0.0363**	**6.1052**	**0.2340**	**6.3393**	**3.3192**	**0.2340**	**3.5532**		**3,439.7201**	**3,439.7201**	**0.1437**		**3,443.3117**

3.3 Grading for multifamily residential - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0338	0.0132	0.2352	8.4000e-004	0.1141	5.2000e-004	0.1146	0.0303	4.8000e-004	0.0308		83.7618	83.7618	1.2800e-003		83.7939
Total	**0.0338**	**0.0132**	**0.2352**	**8.4000e-004**	**0.1141**	**5.2000e-004**	**0.1146**	**0.0303**	**4.8000e-004**	**0.0308**		**83.7618**	**83.7618**	**1.2800e-003**		**83.7939**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7474	0.0000	2.7474	1.4936	0.0000	1.4936			0.0000			0.0000
Off-Road	1.6179	7.7501	14.4518	0.0363		0.2340	0.2340		0.2340	0.2340	0.0000	3,439.7201	3,439.7201	0.1437		3,443.3117
Total	**1.6179**	**7.7501**	**14.4518**	**0.0363**	**2.7474**	**0.2340**	**2.9814**	**1.4936**	**0.2340**	**1.7277**	**0.0000**	**3,439.7201**	**3,439.7201**	**0.1437**		**3,443.3117**

3.3 Grading for multifamily residential - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0338	0.0132	0.2352	8.4000e-004	0.1052	5.2000e-004	0.1057	0.0281	4.8000e-004	0.0286		83.7618	83.7618	1.2800e-003		83.7939
Total	**0.0338**	**0.0132**	**0.2352**	**8.4000e-004**	**0.1052**	**5.2000e-004**	**0.1057**	**0.0281**	**4.8000e-004**	**0.0286**		**83.7618**	**83.7618**	**1.2800e-003**		**83.7939**

3.4 Paving for multifamily residential - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3845	7.1202	15.8495	0.0281		0.3306	0.3306		0.3306	0.3306		2,656.5168	2,656.5168	0.1245		2,659.6302
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3845**	**7.1202**	**15.8495**	**0.0281**		**0.3306**	**0.3306**		**0.3306**	**0.3306**		**2,656.5168**	**2,656.5168**	**0.1245**		**2,659.6302**

3.4 Paving for multifamily residential - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0338	0.0132	0.2352	8.4000e-004	0.1141	5.2000e-004	0.1146	0.0303	4.8000e-004	0.0308		83.7618	83.7618	1.2800e-003		83.7939
Total	**0.0338**	**0.0132**	**0.2352**	**8.4000e-004**	**0.1141**	**5.2000e-004**	**0.1146**	**0.0303**	**4.8000e-004**	**0.0308**		**83.7618**	**83.7618**	**1.2800e-003**		**83.7939**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3845	7.1202	15.8495	0.0281		0.3306	0.3306		0.3306	0.3306	0.0000	2,656.5168	2,656.5168	0.1245		2,659.6302
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3845**	**7.1202**	**15.8495**	**0.0281**		**0.3306**	**0.3306**		**0.3306**	**0.3306**	**0.0000**	**2,656.5168**	**2,656.5168**	**0.1245**		**2,659.6302**

3.4 Paving for multifamily residential - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0338	0.0132	0.2352	8.4000e-004	0.1052	5.2000e-004	0.1057	0.0281	4.8000e-004	0.0286		83.7618	83.7618	1.2800e-003		83.7939
Total	**0.0338**	**0.0132**	**0.2352**	**8.4000e-004**	**0.1052**	**5.2000e-004**	**0.1057**	**0.0281**	**4.8000e-004**	**0.0286**		**83.7618**	**83.7618**	**1.2800e-003**		**83.7939**

3.5 Building Construction for multifamily residential - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

3.5 Building Construction for multifamily residential - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0481	1.9999	0.4221	6.4500e-003	0.4090	2.1600e-003	0.4111	0.1075	2.0600e-003	0.1096		686.1733	686.1733	0.0319		686.9714
Worker	0.3418	0.1331	2.4286	9.0200e-003	3.4366	5.3700e-003	3.4420	0.8684	4.9400e-003	0.8733		899.5962	899.5962	0.0129		899.9185
Total	**0.3899**	**2.1330**	**2.8506**	**0.0155**	**3.8456**	**7.5300e-003**	**3.8532**	**0.9759**	**7.0000e-003**	**0.9829**		**1,585.7695**	**1,585.7695**	**0.0448**		**1,586.8899**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

3.5 Building Construction for multifamily residential - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0481	1.9999	0.4221	6.4500e-003	0.3765	2.1600e-003	0.3787	0.0995	2.0600e-003	0.1016		686.1733	686.1733	0.0319		686.9714
Worker	0.3418	0.1331	2.4286	9.0200e-003	3.1421	5.3700e-003	3.1475	0.7961	4.9400e-003	0.8011		899.5962	899.5962	0.0129		899.9185
Total	**0.3899**	**2.1330**	**2.8506**	**0.0155**	**3.5186**	**7.5300e-003**	**3.5262**	**0.8956**	**7.0000e-003**	**0.9026**		**1,585.7695**	**1,585.7695**	**0.0448**		**1,586.8899**

3.5 Building Construction for multifamily residential - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

3.5 Building Construction for multifamily residential - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0471	1.9770	0.4144	6.4300e-003	0.4090	2.0700e-003	0.4111	0.1075	1.9800e-003	0.1095		684.4427	684.4427	0.0316		685.2337
Worker	0.3148	0.1225	2.2885	8.8300e-003	3.4366	5.0000e-003	3.4416	0.8684	4.6000e-003	0.8730		880.6351	880.6351	0.0118		880.9310
Total	**0.3619**	**2.0995**	**2.7028**	**0.0153**	**3.8456**	**7.0700e-003**	**3.8527**	**0.9759**	**6.5800e-003**	**0.9825**		**1,565.0778**	**1,565.0778**	**0.0435**		**1,566.1646**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

3.5 Building Construction for multifamily residential - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0471	1.9770	0.4144	6.4300e-003	0.3765	2.0700e-003	0.3786	0.0995	1.9800e-003	0.1015		684.4427	684.4427	0.0316		685.2337
Worker	0.3148	0.1225	2.2885	8.8300e-003	3.1421	5.0000e-003	3.1471	0.7961	4.6000e-003	0.8007		880.6351	880.6351	0.0118		880.9310
Total	**0.3619**	**2.0995**	**2.7028**	**0.0153**	**3.5186**	**7.0700e-003**	**3.5257**	**0.8956**	**6.5800e-003**	**0.9022**		**1,565.0778**	**1,565.0778**	**0.0435**		**1,566.1646**

3.6 Architectural Coating for multifamily residential - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.3582					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**26.4889**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating for multifamily residential - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0585	0.0228	0.4341	1.7300e-003	0.2510	9.3000e-004	0.2520	0.0666	8.6000e-004	0.0675		172.8575	172.8575	2.1900e-003		172.9122
Total	**0.0585**	**0.0228**	**0.4341**	**1.7300e-003**	**0.2510**	**9.3000e-004**	**0.2520**	**0.0666**	**8.6000e-004**	**0.0675**		**172.8575**	**172.8575**	**2.1900e-003**		**172.9122**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.3582					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**26.4889**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating for multifamily residential - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0585	0.0228	0.4341	1.7300e-003	0.2314	9.3000e-004	0.2323	0.0618	8.6000e-004	0.0626		172.8575	172.8575	2.1900e-003		172.9122
Total	**0.0585**	**0.0228**	**0.4341**	**1.7300e-003**	**0.2314**	**9.3000e-004**	**0.2323**	**0.0618**	**8.6000e-004**	**0.0626**		**172.8575**	**172.8575**	**2.1900e-003**		**172.9122**

3.7 Site Preparation for commercial - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.4399	13.6680	16.2918	0.0466		0.4367	0.4367		0.4367	0.4367		4,409.7537	4,409.7537	0.2176		4,415.1936
Total	**2.4399**	**13.6680**	**16.2918**	**0.0466**	**18.0663**	**0.4367**	**18.5029**	**9.9307**	**0.4367**	**10.3673**		**4,409.7537**	**4,409.7537**	**0.2176**		**4,415.1936**

3.7 Site Preparation for commercial - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0297	0.0116	0.2246	9.3000e-004	0.1369	4.7000e-004	0.1374	0.0363	4.4000e-004	0.0368		92.7454	92.7454	1.1100e-003		92.7730
Total	**0.0297**	**0.0116**	**0.2246**	**9.3000e-004**	**0.1369**	**4.7000e-004**	**0.1374**	**0.0363**	**4.4000e-004**	**0.0368**		**92.7454**	**92.7454**	**1.1100e-003**		**92.7730**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	2.4399	13.6680	16.2918	0.0466		0.4367	0.4367		0.4367	0.4367	0.0000	4,409.7537	4,409.7537	0.2176		4,415.1936
Total	**2.4399**	**13.6680**	**16.2918**	**0.0466**	**8.1298**	**0.4367**	**8.5665**	**4.4688**	**0.4367**	**4.9055**	**0.0000**	**4,409.7537**	**4,409.7537**	**0.2176**		**4,415.1936**

3.7 Site Preparation for commercial - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0297	0.0116	0.2246	9.3000e-004	0.1262	4.7000e-004	0.1267	0.0337	4.4000e-004	0.0341		92.7454	92.7454	1.1100e-003		92.7730
Total	**0.0297**	**0.0116**	**0.2246**	**9.3000e-004**	**0.1262**	**4.7000e-004**	**0.1267**	**0.0337**	**4.4000e-004**	**0.0341**		**92.7454**	**92.7454**	**1.1100e-003**		**92.7730**

3.8 Building Construction for commercial - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

3.8 Building Construction for commercial - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0456	1.9379	0.4020	6.4000e-003	0.1683	1.9400e-003	0.1703	0.0484	1.8500e-003	0.0503		681.6762	681.6762	0.0312		682.4549
Worker	0.2725	0.1065	2.0585	8.5200e-003	1.2552	4.3500e-003	1.2595	0.3329	4.0000e-003	0.3369		850.1662	850.1662	0.0101		850.4195
Total	**0.3181**	**2.0443**	**2.4605**	**0.0149**	**1.4235**	**6.2900e-003**	**1.4298**	**0.3814**	**5.8500e-003**	**0.3872**		**1,531.8424**	**1,531.8424**	**0.0413**		**1,532.8744**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

3.8 Building Construction for commercial - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0456	1.9379	0.4020	6.4000e-003	0.1575	1.9400e-003	0.1595	0.0458	1.8500e-003	0.0476		681.6762	681.6762	0.0312		682.4549
Worker	0.2725	0.1065	2.0585	8.5200e-003	1.1570	4.3500e-003	1.1613	0.3089	4.0000e-003	0.3128		850.1662	850.1662	0.0101		850.4195
Total	**0.3181**	**2.0443**	**2.4605**	**0.0149**	**1.3145**	**6.2900e-003**	**1.3208**	**0.3546**	**5.8500e-003**	**0.3605**		**1,531.8424**	**1,531.8424**	**0.0413**		**1,532.8744**

3.8 Building Construction for commercial - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

3.8 Building Construction for commercial - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0449	1.9212	0.3970	6.3900e-003	0.1683	1.8800e-003	0.1702	0.0484	1.7900e-003	0.0502		680.6427	680.6427	0.0309		681.4159
Worker	0.2551	0.1007	1.9628	8.4000e-003	1.2552	4.0700e-003	1.2592	0.3329	3.7400e-003	0.3367		838.1546	838.1546	9.4300e-003		838.3904
Total	**0.3000**	**2.0219**	**2.3598**	**0.0148**	**1.4235**	**5.9500e-003**	**1.4294**	**0.3814**	**5.5300e-003**	**0.3869**		**1,518.7972**	**1,518.7972**	**0.0404**		**1,519.8063**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

3.8 Building Construction for commercial - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0449	1.9212	0.3970	6.3900e-003	0.1575	1.8800e-003	0.1594	0.0458	1.7900e-003	0.0476		680.6427	680.6427	0.0309		681.4159
Worker	0.2551	0.1007	1.9628	8.4000e-003	1.1570	4.0700e-003	1.1611	0.3089	3.7400e-003	0.3126		838.1546	838.1546	9.4300e-003		838.3904
Total	**0.3000**	**2.0219**	**2.3598**	**0.0148**	**1.3145**	**5.9500e-003**	**1.3204**	**0.3546**	**5.5300e-003**	**0.3602**		**1,518.7972**	**1,518.7972**	**0.0404**		**1,519.8063**

3.9 Grading and Improvements for commercial - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1347	0.0000	6.1347	3.3224	0.0000	3.3224			0.0000			0.0000
Off-Road	1.6179	7.7501	14.4518	0.0363		0.2340	0.2340		0.2340	0.2340		3,439.7201	3,439.7201	0.1437		3,443.3117
Total	**1.6179**	**7.7501**	**14.4518**	**0.0363**	**6.1347**	**0.2340**	**6.3687**	**3.3224**	**0.2340**	**3.5564**		**3,439.7201**	**3,439.7201**	**0.1437**		**3,443.3117**

3.9 Grading and Improvements for commercial - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0248	9.6800e-003	0.1871	7.7000e-004	0.1141	4.0000e-004	0.1145	0.0303	3.6000e-004	0.0306		77.2878	77.2878	9.2000e-004		77.3109
Total	**0.0248**	**9.6800e-003**	**0.1871**	**7.7000e-004**	**0.1141**	**4.0000e-004**	**0.1145**	**0.0303**	**3.6000e-004**	**0.0306**		**77.2878**	**77.2878**	**9.2000e-004**		**77.3109**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7606	0.0000	2.7606	1.4951	0.0000	1.4951			0.0000			0.0000
Off-Road	1.6179	7.7501	14.4518	0.0363		0.2340	0.2340		0.2340	0.2340	0.0000	3,439.7201	3,439.7201	0.1437		3,443.3117
Total	**1.6179**	**7.7501**	**14.4518**	**0.0363**	**2.7606**	**0.2340**	**2.9946**	**1.4951**	**0.2340**	**1.7291**	**0.0000**	**3,439.7201**	**3,439.7201**	**0.1437**		**3,443.3117**

3.9 Grading and Improvements for commercial - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0248	9.6800e-003	0.1871	7.7000e-004	0.1052	4.0000e-004	0.1056	0.0281	3.6000e-004	0.0284		77.2878	77.2878	9.2000e-004		77.3109
Total	**0.0248**	**9.6800e-003**	**0.1871**	**7.7000e-004**	**0.1052**	**4.0000e-004**	**0.1056**	**0.0281**	**3.6000e-004**	**0.0284**		**77.2878**	**77.2878**	**9.2000e-004**		**77.3109**

3.10 Paving for commercial - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3845	7.1202	15.8495	0.0281		0.3306	0.3306		0.3306	0.3306		2,656.5168	2,656.5168	0.1245		2,659.6302
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3845**	**7.1202**	**15.8495**	**0.0281**		**0.3306**	**0.3306**		**0.3306**	**0.3306**		**2,656.5168**	**2,656.5168**	**0.1245**		**2,659.6302**

3.10 Paving for commercial - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0248	9.6800e-003	0.1871	7.7000e-004	0.1141	4.0000e-004	0.1145	0.0303	3.6000e-004	0.0306		77.2878	77.2878	9.2000e-004		77.3109
Total	**0.0248**	**9.6800e-003**	**0.1871**	**7.7000e-004**	**0.1141**	**4.0000e-004**	**0.1145**	**0.0303**	**3.6000e-004**	**0.0306**		**77.2878**	**77.2878**	**9.2000e-004**		**77.3109**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3845	7.1202	15.8495	0.0281		0.3306	0.3306		0.3306	0.3306	0.0000	2,656.5168	2,656.5168	0.1245		2,659.6302
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3845**	**7.1202**	**15.8495**	**0.0281**		**0.3306**	**0.3306**		**0.3306**	**0.3306**	**0.0000**	**2,656.5168**	**2,656.5168**	**0.1245**		**2,659.6302**

3.10 Paving for commercial - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0248	9.6800e-003	0.1871	7.7000e-004	0.1052	4.0000e-004	0.1056	0.0281	3.6000e-004	0.0284		77.2878	77.2878	9.2000e-004		77.3109
Total	**0.0248**	**9.6800e-003**	**0.1871**	**7.7000e-004**	**0.1052**	**4.0000e-004**	**0.1056**	**0.0281**	**3.6000e-004**	**0.0284**		**77.2878**	**77.2878**	**9.2000e-004**		**77.3109**

3.11 Architectural Coating for commercial - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.0517					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003		281.4481	281.4481	0.0104		281.7081
Total	**26.1695**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**		**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.11 Architectural Coating for commercial - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0510	0.0201	0.3926	1.6800e-003	0.2510	8.1000e-004	0.2518	0.0666	7.5000e-004	0.0673		167.6309	167.6309	1.8900e-003		167.6781
Total	**0.0510**	**0.0201**	**0.3926**	**1.6800e-003**	**0.2510**	**8.1000e-004**	**0.2518**	**0.0666**	**7.5000e-004**	**0.0673**		**167.6309**	**167.6309**	**1.8900e-003**		**167.6781**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.0517					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003	0.0000	281.4481	281.4481	0.0104		281.7081
Total	**26.1695**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.11 Architectural Coating for commercial - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0510	0.0201	0.3926	1.6800e-003	0.2314	8.1000e-004	0.2322	0.0618	7.5000e-004	0.0625		167.6309	167.6309	1.8900e-003		167.6781
Total	**0.0510**	**0.0201**	**0.3926**	**1.6800e-003**	**0.2314**	**8.1000e-004**	**0.2322**	**0.0618**	**7.5000e-004**	**0.0625**		**167.6309**	**167.6309**	**1.8900e-003**		**167.6781**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.8942	11.3492	25.8706	0.1131	12.4971	0.0549	12.5520	3.3365	0.0510	3.3875		11,530.5427	11,530.5427	0.4135		11,540.8797
Unmitigated	2.8942	11.3492	25.8706	0.1131	12.4971	0.0549	12.5520	3.3365	0.0510	3.3875		11,530.5427	11,530.5427	0.4135		11,540.8797

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,429.75	1,373.85	1259.90	3,586,137	3,586,137
Regional Shopping Center	1,366.40	1,599.04	807.68	1,844,187	1,844,187
Total	2,796.15	2,972.89	2,067.58	5,430,324	5,430,324

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Regional Shopping Center	10.00	5.00	6.50	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Regional Shopping Center	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0671	0.5758	0.2643	3.6600e-003		0.0463	0.0463		0.0463	0.0463		731.4364	731.4364	0.0140	0.0134	735.7830
NaturalGas Unmitigated	0.0671	0.5758	0.2643	3.6600e-003		0.0463	0.0463		0.0463	0.0463		731.4364	731.4364	0.0140	0.0134	735.7830

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	5742.03	0.0619	0.5292	0.2252	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5331	675.5331	0.0130	0.0124	679.5475
Regional Shopping Center	475.178	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355
Total		**0.0670**	**0.5758**	**0.2643**	**3.6600e-003**		**0.0463**	**0.0463**		**0.0463**	**0.0463**		**731.4364**	**731.4364**	**0.0140**	**0.0134**	**735.7830**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	5.74203	0.0619	0.5292	0.2252	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5331	675.5331	0.0130	0.0124	679.5475
Regional Shopping Center	0.475178	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355
Total		**0.0670**	**0.5758**	**0.2643**	**3.6600e-003**		**0.0463**	**0.0463**		**0.0463**	**0.0463**		**731.4364**	**731.4364**	**0.0140**	**0.0134**	**735.7830**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.6330	0.2040	17.6787	9.4000e-004		0.0984	0.0984		0.0984	0.0984	0.0000	31.9458	31.9458	0.0304	0.0000	32.7063
Unmitigated	6.6330	0.2040	17.6787	9.4000e-004		0.0984	0.0984		0.0984	0.0984	0.0000	31.9458	31.9458	0.0304	0.0000	32.7063

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.8184					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.2858					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5288	0.2040	17.6787	9.4000e-004		0.0984	0.0984		0.0984	0.0984		31.9458	31.9458	0.0304		32.7063
Total	**6.6330**	**0.2040**	**17.6787**	**9.4000e-004**		**0.0984**	**0.0984**		**0.0984**	**0.0984**	**0.0000**	**31.9458**	**31.9458**	**0.0304**	**0.0000**	**32.7063**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.8184					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.2858					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5288	0.2040	17.6787	9.4000e-004		0.0984	0.0984		0.0984	0.0984		31.9458	31.9458	0.0304		32.7063
Total	**6.6330**	**0.2040**	**17.6787**	**9.4000e-004**		**0.0984**	**0.0984**		**0.0984**	**0.0984**	**0.0000**	**31.9458**	**31.9458**	**0.0304**	**0.0000**	**32.7063**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

The Ranch - City of Rancho Cordova (Construction Only - Phase 4)

Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	215.00	Dwelling Unit	5.66	215,000.00	574
Regional Shopping Center	32.00	1000sqft	0.73	32,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Estimated construction state date of March 2030 (provided by Applicant).

Land Use - This model run provides construction emissions only.

Construction Phase - Phase 4

Off-road Equipment -

Trips and VMT - -

Grading - Total of 38,177 soil export. 13.8 acres graded during this phase (as provided by project applicant).

Architectural Coating - 75 g/L as provided by SMAQMD (average as provided by the air district).

Vehicle Trips - Operational emissions not modeled under this scenario (construction only)

Road Dust -

Woodstoves - No fireplaces.

Consumer Products - 'General Category' consumer products EF red. by 28.33% - reflects project person/du value (2.523) vs. statewide avg. (2.97) and latest statewide data (ARB). Parking Degreaser EF red. by 57.5% (corrects for walking paths modeled as 'parking lot').

Area Coating - Maximum 50 g/l for flat coatings SMAQMD Rule 442. Assume flat coatings are used for interior coatings.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 77.57-92.01-5.08-0.65-30.40-21.18-18.41 = 284.80

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - Construction mitigation reflects quantification of the SMAQMD Basic Construction Emissions Control Practices: Water Exposed area 2x daily; Unpaved road mitigation = 15 mph; Clean paved road = 9%. NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	75.00

tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	75.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	75.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	75.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	86.00
tblConstructionPhase	NumDays	20.00	85.00
tblConstructionPhase	NumDays	230.00	459.00
tblConstructionPhase	NumDays	230.00	348.00
tblConstructionPhase	NumDays	20.00	88.00
tblConstructionPhase	NumDays	20.00	65.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	10.00	43.00
tblGrading	AcresOfGrading	44.00	6.90
tblGrading	AcresOfGrading	32.50	6.90
tblGrading	MaterialExported	0.00	19,089.00
tblGrading	MaterialExported	0.00	19,089.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblTripsAndVMT	HaulingTripNumber	1,887.00	0.00
tblTripsAndVMT	HaulingTripNumber	1,887.00	0.00
tblTripsAndVMT	VendorTripNumber	28.00	0.00

tblTripsAndVMT	VendorTripNumber	28.00	0.00
tblTripsAndVMT	WorkerTripNumber	165.00	0.00
tblTripsAndVMT	WorkerTripNumber	165.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2030	2.4781	13.6875	16.5255	0.0474	18.2032	0.4373	18.6405	9.9670	0.4372	10.4042	0.0000	4,498.0218	4,498.0218	0.2189	0.0000	4,503.4949
2031	1.6816	10.1148	18.6429	0.0452	3.8456	0.1558	4.0014	0.9759	0.1552	1.1311	0.0000	4,356.4332	4,356.4332	0.1618	0.0000	4,360.4781
2032	1.6556	10.0785	18.5104	0.0450	3.8456	0.1553	4.0009	0.9759	0.1548	1.1307	0.0000	4,338.0011	4,338.0011	0.1605	0.0000	4,342.0146
2033	26.5442	0.8842	2.1528	4.4900e-003	0.2510	0.0212	0.2723	0.0666	0.0212	0.0878	0.0000	433.1746	433.1746	0.0133	0.0000	433.5063
2034	5.7253	31.4631	49.3724	0.1291	25.8754	0.8260	26.7015	13.7010	0.8255	14.5265	0.0000	12,307.0683	12,307.0683	0.5215	0.0000	12,320.1051
2035	26.2182	9.2216	18.1641	0.0446	1.4235	0.0964	1.5199	0.3814	0.0960	0.4774	0.0000	4,296.7300	4,296.7300	0.1493	0.0000	4,300.4625
Maximum	**26.5442**	**31.4631**	**49.3724**	**0.1291**	**25.8754**	**0.8260**	**26.7015**	**13.7010**	**0.8255**	**14.5265**	**0.0000**	**12,307.0683**	**12,307.0683**	**0.5215**	**0.0000**	**12,320.1051**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2030	2.4781	13.6875	16.5255	0.0474	8.2560	0.4373	8.6933	4.5025	0.4372	4.9397	0.0000	4,498.0218	4,498.0218	0.2189	0.0000	4,503.4949
2031	1.6816	10.1148	18.6429	0.0452	3.5186	0.1558	3.6744	0.8956	0.1552	1.0509	0.0000	4,356.4332	4,356.4332	0.1618	0.0000	4,360.4781
2032	1.6556	10.0785	18.5104	0.0450	3.5186	0.1553	3.6739	0.8956	0.1548	1.0504	0.0000	4,338.0011	4,338.0011	0.1605	0.0000	4,342.0146
2033	26.5442	0.8842	2.1528	4.4900e-003	0.2314	0.0212	0.2526	0.0618	0.0212	0.0829	0.0000	433.1746	433.1746	0.0133	0.0000	433.5063
2034	5.7253	31.4631	49.3724	0.1291	12.4363	0.8260	13.2623	6.3803	0.8255	7.2058	0.0000	12,307.0683	12,307.0683	0.5215	0.0000	12,320.1051
2035	26.2182	9.2216	18.1641	0.0446	1.3145	0.0964	1.4109	0.3546	0.0960	0.4506	0.0000	4,296.7300	4,296.7300	0.1493	0.0000	4,300.4625
Maximum	**26.5442**	**31.4631**	**49.3724**	**0.1291**	**12.4363**	**0.8260**	**13.2623**	**6.3803**	**0.8255**	**7.2058**	**0.0000**	**12,307.0683**	**12,307.0683**	**0.5215**	**0.0000**	**12,320.1051**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**45.22**	**0.00**	**43.83**	**49.78**	**0.00**	**46.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.6330	0.2040	17.6787	9.4000e-004		0.0984	0.0984		0.0984	0.0984	0.0000	31.9458	31.9458	0.0304	0.0000	32.7063
Energy	0.0671	0.5758	0.2643	3.6600e-003		0.0463	0.0463		0.0463	0.0463		731.4364	731.4364	0.0140	0.0134	735.7830
Mobile	2.0416	11.7059	23.9713	0.1026	12.4971	0.0552	12.5523	3.3365	0.0513	3.3878		10,478.2177	10,478.2177	0.4239		10,488.8151
Total	**8.7416**	**12.4856**	**41.9143**	**0.1072**	**12.4971**	**0.1999**	**12.6970**	**3.3365**	**0.1960**	**3.5325**	**0.0000**	**11,241.5998**	**11,241.5998**	**0.4683**	**0.0134**	**11,257.3043**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.6330	0.2040	17.6787	9.4000e-004		0.0984	0.0984		0.0984	0.0984	0.0000	31.9458	31.9458	0.0304	0.0000	32.7063
Energy	0.0671	0.5758	0.2643	3.6600e-003		0.0463	0.0463		0.0463	0.0463		731.4364	731.4364	0.0140	0.0134	735.7830
Mobile	2.0416	11.7059	23.9713	0.1026	12.4971	0.0552	12.5523	3.3365	0.0513	3.3878		10,478.2177	10,478.2177	0.4239		10,488.8151
Total	**8.7416**	**12.4856**	**41.9143**	**0.1072**	**12.4971**	**0.1999**	**12.6970**	**3.3365**	**0.1960**	**3.5325**	**0.0000**	**11,241.5998**	**11,241.5998**	**0.4683**	**0.0134**	**11,257.3043**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation for multifamily residential	Site Preparation	3/1/2030	4/1/2030	5	22	
2	Grading for multifamily residential	Grading	4/2/2030	8/1/2030	5	88	
3	Paving for multifamily residential	Paving	8/2/2030	10/1/2030	5	43	
4	Building Construction for multifamily residential	Building Construction	4/1/2031	12/31/2032	5	459	
5	Architectural Coating for multifamily residential	Architectural Coating	1/1/2033	4/29/2033	5	85	
6	Site Preparation for commercial	Site Preparation	3/1/2034	4/28/2034	5	43	
7	Building Construction for commercial	Building Construction	4/1/2034	8/1/2035	5	348	
8	Grading and Improvements for commercial	Grading	4/2/2034	6/30/2034	5	65	
9	Paving for commercial	Paving	8/1/2034	9/28/2034	5	43	
10	Architectural Coating for commercial	Architectural Coating	9/1/2035	12/31/2035	5	86	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 435,375; Residential Outdoor: 145,125; Non-Residential Indoor: 48,000; Non-Residential Outdoor: 16,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

The Ranch - City of Rancho Cordova (Construction Only - Phase 4) - Sacramento County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation for multifamily residential	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation for multifamily residential	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading for multifamily residential	Excavators	1	8.00	158	0.38
Grading for multifamily residential	Graders	1	8.00	187	0.41
Grading for multifamily residential	Rubber Tired Dozers	1	8.00	247	0.40
Grading for multifamily residential	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving for multifamily residential	Pavers	2	8.00	130	0.42
Paving for multifamily residential	Paving Equipment	2	8.00	132	0.36
Paving for multifamily residential	Rollers	2	8.00	80	0.38
Building Construction for multifamily residential	Cranes	1	7.00	231	0.29
Building Construction for multifamily residential	Forklifts	3	8.00	89	0.20
Building Construction for multifamily residential	Generator Sets	1	8.00	84	0.74
Building Construction for multifamily residential	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction for multifamily residential	Welders	1	8.00	46	0.45
Architectural Coating for multifamily residential	Air Compressors	1	6.00	78	0.48
Site Preparation for commercial	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation for commercial	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction for commercial	Cranes	1	7.00	231	0.29
Building Construction for commercial	Forklifts	3	8.00	89	0.20
Building Construction for commercial	Generator Sets	1	8.00	84	0.74
Building Construction for commercial	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction for commercial	Welders	1	8.00	46	0.45
Grading and Improvements for commercial	Excavators	1	8.00	158	0.38
Grading and Improvements for commercial	Graders	1	8.00	187	0.41

Grading and Improvements for commercial	Rubber Tired Dozers	1	8.00	247	0.40
Grading and Improvements for commercial	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving for commercial	Pavers	2	8.00	130	0.42
Paving for commercial	Paving Equipment	2	8.00	132	0.36
Paving for commercial	Rollers	2	8.00	80	0.38
Architectural Coating for commercial	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation for multifamily residential	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading for multifamily residential	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving for multifamily residential	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction for multifamily resident	9	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction for multifamily resident	9	0.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction for multifamily resident	9	165.00	28.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating for multifamily resident	1	33.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation for commercial	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction for commercial	9	165.00	28.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading and Improvements for com	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving for commercial	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating for commercial	1	33.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation for multifamily residential - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.4399	13.6680	16.2918	0.0466		0.4367	0.4367		0.4367	0.4367		4,409.7537	4,409.7537	0.2176		4,415.1936
Total	**2.4399**	**13.6680**	**16.2918**	**0.0466**	**18.0663**	**0.4367**	**18.5029**	**9.9307**	**0.4367**	**10.3673**		**4,409.7537**	**4,409.7537**	**0.2176**		**4,415.1936**

3.2 Site Preparation for multifamily residential - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0381	0.0195	0.2337	8.8000e-004	0.1369	6.3000e-004	0.1376	0.0363	5.8000e-004	0.0369		88.2681	88.2681	1.3300e-003		88.3013
Total	**0.0381**	**0.0195**	**0.2337**	**8.8000e-004**	**0.1369**	**6.3000e-004**	**0.1376**	**0.0363**	**5.8000e-004**	**0.0369**		**88.2681**	**88.2681**	**1.3300e-003**		**88.3013**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	2.4399	13.6680	16.2918	0.0466		0.4367	0.4367		0.4367	0.4367	0.0000	4,409.7537	4,409.7537	0.2176		4,415.1936
Total	**2.4399**	**13.6680**	**16.2918**	**0.0466**	**8.1298**	**0.4367**	**8.5665**	**4.4688**	**0.4367**	**4.9055**	**0.0000**	**4,409.7537**	**4,409.7537**	**0.2176**		**4,415.1936**

3.2 Site Preparation for multifamily residential - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0381	0.0195	0.2337	8.8000e-004	0.1262	6.3000e-004	0.1269	0.0337	5.8000e-004	0.0343		88.2681	88.2681	1.3300e-003		88.3013
Total	**0.0381**	**0.0195**	**0.2337**	**8.8000e-004**	**0.1262**	**6.3000e-004**	**0.1269**	**0.0337**	**5.8000e-004**	**0.0343**		**88.2681**	**88.2681**	**1.3300e-003**		**88.3013**

3.3 Grading for multifamily residential - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1052	0.0000	6.1052	3.3192	0.0000	3.3192			0.0000			0.0000
Off-Road	1.6179	7.7501	14.4518	0.0363		0.2340	0.2340		0.2340	0.2340		3,439.7201	3,439.7201	0.1437		3,443.3117
Total	**1.6179**	**7.7501**	**14.4518**	**0.0363**	**6.1052**	**0.2340**	**6.3393**	**3.3192**	**0.2340**	**3.5532**		**3,439.7201**	**3,439.7201**	**0.1437**		**3,443.3117**

3.3 Grading for multifamily residential - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0318	0.0163	0.1948	7.4000e-004	0.1141	5.2000e-004	0.1146	0.0303	4.8000e-004	0.0308		73.5567	73.5567	1.1100e-003		73.5844
Total	**0.0318**	**0.0163**	**0.1948**	**7.4000e-004**	**0.1141**	**5.2000e-004**	**0.1146**	**0.0303**	**4.8000e-004**	**0.0308**		**73.5567**	**73.5567**	**1.1100e-003**		**73.5844**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7474	0.0000	2.7474	1.4936	0.0000	1.4936			0.0000			0.0000
Off-Road	1.6179	7.7501	14.4518	0.0363		0.2340	0.2340		0.2340	0.2340	0.0000	3,439.7201	3,439.7201	0.1437		3,443.3117
Total	**1.6179**	**7.7501**	**14.4518**	**0.0363**	**2.7474**	**0.2340**	**2.9814**	**1.4936**	**0.2340**	**1.7277**	**0.0000**	**3,439.7201**	**3,439.7201**	**0.1437**		**3,443.3117**

3.3 Grading for multifamily residential - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0318	0.0163	0.1948	7.4000e-004	0.1052	5.2000e-004	0.1057	0.0281	4.8000e-004	0.0286		73.5567	73.5567	1.1100e-003		73.5844
Total	**0.0318**	**0.0163**	**0.1948**	**7.4000e-004**	**0.1052**	**5.2000e-004**	**0.1057**	**0.0281**	**4.8000e-004**	**0.0286**		**73.5567**	**73.5567**	**1.1100e-003**		**73.5844**

3.4 Paving for multifamily residential - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3845	7.1202	15.8495	0.0281		0.3306	0.3306		0.3306	0.3306		2,656.5168	2,656.5168	0.1245		2,659.6302
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3845**	**7.1202**	**15.8495**	**0.0281**		**0.3306**	**0.3306**		**0.3306**	**0.3306**		**2,656.5168**	**2,656.5168**	**0.1245**		**2,659.6302**

3.4 Paving for multifamily residential - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0318	0.0163	0.1948	7.4000e-004	0.1141	5.2000e-004	0.1146	0.0303	4.8000e-004	0.0308		73.5567	73.5567	1.1100e-003		73.5844
Total	**0.0318**	**0.0163**	**0.1948**	**7.4000e-004**	**0.1141**	**5.2000e-004**	**0.1146**	**0.0303**	**4.8000e-004**	**0.0308**		**73.5567**	**73.5567**	**1.1100e-003**		**73.5844**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3845	7.1202	15.8495	0.0281		0.3306	0.3306		0.3306	0.3306	0.0000	2,656.5168	2,656.5168	0.1245		2,659.6302
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3845**	**7.1202**	**15.8495**	**0.0281**		**0.3306**	**0.3306**		**0.3306**	**0.3306**	**0.0000**	**2,656.5168**	**2,656.5168**	**0.1245**		**2,659.6302**

3.4 Paving for multifamily residential - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0318	0.0163	0.1948	7.4000e-004	0.1052	5.2000e-004	0.1057	0.0281	4.8000e-004	0.0286		73.5567	73.5567	1.1100e-003		73.5844
Total	**0.0318**	**0.0163**	**0.1948**	**7.4000e-004**	**0.1052**	**5.2000e-004**	**0.1057**	**0.0281**	**4.8000e-004**	**0.0286**		**73.5567**	**73.5567**	**1.1100e-003**		**73.5844**

3.5 Building Construction for multifamily residential - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

3.5 Building Construction for multifamily residential - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0509	2.0167	0.4836	6.2900e-003	0.4090	2.2500e-003	0.4112	0.1075	2.1500e-003	0.1097		669.0236	669.0236	0.0345		669.8849
Worker	0.3216	0.1635	2.0023	7.9200e-003	3.4366	5.3700e-003	3.4420	0.8684	4.9400e-003	0.8733		789.8628	789.8628	0.0111		790.1403
Total	**0.3725**	**2.1802**	**2.4859**	**0.0142**	**3.8456**	**7.6200e-003**	**3.8532**	**0.9759**	**7.0900e-003**	**0.9830**		**1,458.8864**	**1,458.8864**	**0.0456**		**1,460.0252**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

3.5 Building Construction for multifamily residential - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0509	2.0167	0.4836	6.2900e-003	0.3765	2.2500e-003	0.3788	0.0995	2.1500e-003	0.1017		669.0236	669.0236	0.0345		669.8849
Worker	0.3216	0.1635	2.0023	7.9200e-003	3.1421	5.3700e-003	3.1475	0.7961	4.9400e-003	0.8011		789.8628	789.8628	0.0111		790.1403
Total	**0.3725**	**2.1802**	**2.4859**	**0.0142**	**3.5186**	**7.6200e-003**	**3.5263**	**0.8956**	**7.0900e-003**	**0.9027**		**1,458.8864**	**1,458.8864**	**0.0456**		**1,460.0252**

3.5 Building Construction for multifamily residential - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

3.5 Building Construction for multifamily residential - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0498	1.9935	0.4744	6.2700e-003	0.4090	2.1600e-003	0.4111	0.1075	2.0600e-003	0.1096		667.3635	667.3635	0.0341		668.2170
Worker	0.2966	0.1504	1.8791	7.7500e-003	3.4366	5.0000e-003	3.4416	0.8684	4.6000e-003	0.8730		773.0908	773.0908	0.0102		773.3447
Total	**0.3465**	**2.1439**	**2.3535**	**0.0140**	**3.8456**	**7.1600e-003**	**3.8528**	**0.9759**	**6.6600e-003**	**0.9826**		**1,440.4543**	**1,440.4543**	**0.0443**		**1,441.5617**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

3.5 Building Construction for multifamily residential - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0498	1.9935	0.4744	6.2700e-003	0.3765	2.1600e-003	0.3787	0.0995	2.0600e-003	0.1016		667.3635	667.3635	0.0341		668.2170
Worker	0.2966	0.1504	1.8791	7.7500e-003	3.1421	5.0000e-003	3.1471	0.7961	4.6000e-003	0.8007		773.0908	773.0908	0.0102		773.3447
Total	**0.3465**	**2.1439**	**2.3535**	**0.0140**	**3.5186**	**7.1600e-003**	**3.5258**	**0.8956**	**6.6600e-003**	**0.9023**		**1,440.4543**	**1,440.4543**	**0.0443**		**1,441.5617**

3.6 Architectural Coating for multifamily residential - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.3582					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**26.4889**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating for multifamily residential - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0553	0.0279	0.3551	1.5200e-003	0.2510	9.3000e-004	0.2520	0.0666	8.6000e-004	0.0675		151.7266	151.7266	1.8700e-003		151.7734
Total	**0.0553**	**0.0279**	**0.3551**	**1.5200e-003**	**0.2510**	**9.3000e-004**	**0.2520**	**0.0666**	**8.6000e-004**	**0.0675**		**151.7266**	**151.7266**	**1.8700e-003**		**151.7734**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.3582					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**26.4889**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating for multifamily residential - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0553	0.0279	0.3551	1.5200e-003	0.2314	9.3000e-004	0.2323	0.0618	8.6000e-004	0.0626		151.7266	151.7266	1.8700e-003		151.7734
Total	**0.0553**	**0.0279**	**0.3551**	**1.5200e-003**	**0.2314**	**9.3000e-004**	**0.2323**	**0.0618**	**8.6000e-004**	**0.0626**		**151.7266**	**151.7266**	**1.8700e-003**		**151.7734**

3.7 Site Preparation for commercial - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.4399	13.6680	16.2918	0.0466		0.4367	0.4367		0.4367	0.4367		4,409.7537	4,409.7537	0.2176		4,415.1936
Total	**2.4399**	**13.6680**	**16.2918**	**0.0466**	**18.0663**	**0.4367**	**18.5029**	**9.9307**	**0.4367**	**10.3673**		**4,409.7537**	**4,409.7537**	**0.2176**		**4,415.1936**

3.7 Site Preparation for commercial - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0282	0.0142	0.1830	8.2000e-004	0.1369	4.7000e-004	0.1374	0.0363	4.4000e-004	0.0368		81.3973	81.3973	9.4000e-004		81.4209
Total	**0.0282**	**0.0142**	**0.1830**	**8.2000e-004**	**0.1369**	**4.7000e-004**	**0.1374**	**0.0363**	**4.4000e-004**	**0.0368**		**81.3973**	**81.3973**	**9.4000e-004**		**81.4209**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	2.4399	13.6680	16.2918	0.0466		0.4367	0.4367		0.4367	0.4367	0.0000	4,409.7537	4,409.7537	0.2176		4,415.1936
Total	**2.4399**	**13.6680**	**16.2918**	**0.0466**	**8.1298**	**0.4367**	**8.5665**	**4.4688**	**0.4367**	**4.9055**	**0.0000**	**4,409.7537**	**4,409.7537**	**0.2176**		**4,415.1936**

3.7 Site Preparation for commercial - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0282	0.0142	0.1830	8.2000e-004	0.1262	4.7000e-004	0.1267	0.0337	4.4000e-004	0.0341		81.3973	81.3973	9.4000e-004		81.4209
Total	**0.0282**	**0.0142**	**0.1830**	**8.2000e-004**	**0.1262**	**4.7000e-004**	**0.1267**	**0.0337**	**4.4000e-004**	**0.0341**		**81.3973**	**81.3973**	**9.4000e-004**		**81.4209**

3.8 Building Construction for commercial - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

3.8 Building Construction for commercial - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0481	1.9539	0.4594	6.2500e-003	0.1683	2.0000e-003	0.1703	0.0484	1.9100e-003	0.0503		664.6771	664.6771	0.0336		665.5172
Worker	0.2585	0.1305	1.6770	7.4700e-003	1.2552	4.3500e-003	1.2595	0.3329	4.0000e-003	0.3369		746.1422	746.1422	8.6400e-003		746.3581
Total	**0.3067**	**2.0843**	**2.1364**	**0.0137**	**1.4235**	**6.3500e-003**	**1.4298**	**0.3814**	**5.9100e-003**	**0.3873**		**1,410.8193**	**1,410.8193**	**0.0422**		**1,411.8753**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

3.8 Building Construction for commercial - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0481	1.9539	0.4594	6.2500e-003	0.1575	2.0000e-003	0.1595	0.0458	1.9100e-003	0.0477		664.6771	664.6771	0.0336		665.5172
Worker	0.2585	0.1305	1.6770	7.4700e-003	1.1570	4.3500e-003	1.1613	0.3089	4.0000e-003	0.3128		746.1422	746.1422	8.6400e-003		746.3581
Total	**0.3067**	**2.0843**	**2.1364**	**0.0137**	**1.3145**	**6.3500e-003**	**1.3208**	**0.3546**	**5.9100e-003**	**0.3605**		**1,410.8193**	**1,410.8193**	**0.0422**		**1,411.8753**

3.8 Building Construction for commercial - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

3.8 Building Construction for commercial - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0474	1.9370	0.4533	6.2400e-003	0.1683	1.9300e-003	0.1703	0.0484	1.8400e-003	0.0503		663.6622	663.6622	0.0334		664.4962
Worker	0.2432	0.1233	1.5930	7.3700e-003	1.2552	4.0700e-003	1.2592	0.3329	3.7400e-003	0.3367		735.5211	735.5211	8.0200e-003		735.7215
Total	**0.2906**	**2.0603**	**2.0464**	**0.0136**	**1.4235**	**6.0000e-003**	**1.4295**	**0.3814**	**5.5800e-003**	**0.3870**		**1,399.1833**	**1,399.1833**	**0.0414**		**1,400.2177**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

3.8 Building Construction for commercial - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0474	1.9370	0.4533	6.2400e-003	0.1575	1.9300e-003	0.1594	0.0458	1.8400e-003	0.0476		663.6622	663.6622	0.0334		664.4962
Worker	0.2432	0.1233	1.5930	7.3700e-003	1.1570	4.0700e-003	1.1611	0.3089	3.7400e-003	0.3126		735.5211	735.5211	8.0200e-003		735.7215
Total	**0.2906**	**2.0603**	**2.0464**	**0.0136**	**1.3145**	**6.0000e-003**	**1.3205**	**0.3546**	**5.5800e-003**	**0.3602**		**1,399.1833**	**1,399.1833**	**0.0414**		**1,400.2177**

3.9 Grading and Improvements for commercial - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1347	0.0000	6.1347	3.3224	0.0000	3.3224			0.0000			0.0000
Off-Road	1.6179	7.7501	14.4518	0.0363		0.2340	0.2340		0.2340	0.2340		3,439.7201	3,439.7201	0.1437		3,443.3117
Total	**1.6179**	**7.7501**	**14.4518**	**0.0363**	**6.1347**	**0.2340**	**6.3687**	**3.3224**	**0.2340**	**3.5564**		**3,439.7201**	**3,439.7201**	**0.1437**		**3,443.3117**

3.9 Grading and Improvements for commercial - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0235	0.0119	0.1525	6.8000e-004	0.1141	4.0000e-004	0.1145	0.0303	3.6000e-004	0.0306		67.8311	67.8311	7.9000e-004		67.8507
Total	**0.0235**	**0.0119**	**0.1525**	**6.8000e-004**	**0.1141**	**4.0000e-004**	**0.1145**	**0.0303**	**3.6000e-004**	**0.0306**		**67.8311**	**67.8311**	**7.9000e-004**		**67.8507**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7606	0.0000	2.7606	1.4951	0.0000	1.4951			0.0000			0.0000
Off-Road	1.6179	7.7501	14.4518	0.0363		0.2340	0.2340		0.2340	0.2340	0.0000	3,439.7201	3,439.7201	0.1437		3,443.3117
Total	**1.6179**	**7.7501**	**14.4518**	**0.0363**	**2.7606**	**0.2340**	**2.9946**	**1.4951**	**0.2340**	**1.7291**	**0.0000**	**3,439.7201**	**3,439.7201**	**0.1437**		**3,443.3117**

3.9 Grading and Improvements for commercial - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0235	0.0119	0.1525	6.8000e-004	0.1052	4.0000e-004	0.1056	0.0281	3.6000e-004	0.0284		67.8311	67.8311	7.9000e-004		67.8507
Total	**0.0235**	**0.0119**	**0.1525**	**6.8000e-004**	**0.1052**	**4.0000e-004**	**0.1056**	**0.0281**	**3.6000e-004**	**0.0284**		**67.8311**	**67.8311**	**7.9000e-004**		**67.8507**

3.10 Paving for commercial - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3845	7.1202	15.8495	0.0281		0.3306	0.3306		0.3306	0.3306		2,656.5168	2,656.5168	0.1245		2,659.6302
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3845**	**7.1202**	**15.8495**	**0.0281**		**0.3306**	**0.3306**		**0.3306**	**0.3306**		**2,656.5168**	**2,656.5168**	**0.1245**		**2,659.6302**

3.10 Paving for commercial - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0235	0.0119	0.1525	6.8000e-004	0.1141	4.0000e-004	0.1145	0.0303	3.6000e-004	0.0306		67.8311	67.8311	7.9000e-004		67.8507
Total	**0.0235**	**0.0119**	**0.1525**	**6.8000e-004**	**0.1141**	**4.0000e-004**	**0.1145**	**0.0303**	**3.6000e-004**	**0.0306**		**67.8311**	**67.8311**	**7.9000e-004**		**67.8507**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3845	7.1202	15.8495	0.0281		0.3306	0.3306		0.3306	0.3306	0.0000	2,656.5168	2,656.5168	0.1245		2,659.6302
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3845**	**7.1202**	**15.8495**	**0.0281**		**0.3306**	**0.3306**		**0.3306**	**0.3306**	**0.0000**	**2,656.5168**	**2,656.5168**	**0.1245**		**2,659.6302**

3.10 Paving for commercial - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0235	0.0119	0.1525	6.8000e-004	0.1052	4.0000e-004	0.1056	0.0281	3.6000e-004	0.0284		67.8311	67.8311	7.9000e-004		67.8507
Total	**0.0235**	**0.0119**	**0.1525**	**6.8000e-004**	**0.1052**	**4.0000e-004**	**0.1056**	**0.0281**	**3.6000e-004**	**0.0284**		**67.8311**	**67.8311**	**7.9000e-004**		**67.8507**

3.11 Architectural Coating for commercial - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.0517					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003		281.4481	281.4481	0.0104		281.7081
Total	**26.1695**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**		**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.11 Architectural Coating for commercial - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0486	0.0247	0.3186	1.4700e-003	0.2510	8.1000e-004	0.2518	0.0666	7.5000e-004	0.0673		147.1042	147.1042	1.6000e-003		147.1443
Total	**0.0486**	**0.0247**	**0.3186**	**1.4700e-003**	**0.2510**	**8.1000e-004**	**0.2518**	**0.0666**	**7.5000e-004**	**0.0673**		**147.1042**	**147.1042**	**1.6000e-003**		**147.1443**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.0517					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003	0.0000	281.4481	281.4481	0.0104		281.7081
Total	**26.1695**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.11 Architectural Coating for commercial - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0486	0.0247	0.3186	1.4700e-003	0.2314	8.1000e-004	0.2322	0.0618	7.5000e-004	0.0625		147.1042	147.1042	1.6000e-003		147.1443
Total	**0.0486**	**0.0247**	**0.3186**	**1.4700e-003**	**0.2314**	**8.1000e-004**	**0.2322**	**0.0618**	**7.5000e-004**	**0.0625**		**147.1042**	**147.1042**	**1.6000e-003**		**147.1443**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.0416	11.7059	23.9713	0.1026	12.4971	0.0552	12.5523	3.3365	0.0513	3.3878		10,478.2177	10,478.2177	0.4239		10,488.8151
Unmitigated	2.0416	11.7059	23.9713	0.1026	12.4971	0.0552	12.5523	3.3365	0.0513	3.3878		10,478.2177	10,478.2177	0.4239		10,488.8151

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,429.75	1,373.85	1259.90	3,586,137	3,586,137
Regional Shopping Center	1,366.40	1,599.04	807.68	1,844,187	1,844,187
Total	2,796.15	2,972.89	2,067.58	5,430,324	5,430,324

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Regional Shopping Center	10.00	5.00	6.50	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Regional Shopping Center	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0671	0.5758	0.2643	3.6600e-003		0.0463	0.0463		0.0463	0.0463		731.4364	731.4364	0.0140	0.0134	735.7830
NaturalGas Unmitigated	0.0671	0.5758	0.2643	3.6600e-003		0.0463	0.0463		0.0463	0.0463		731.4364	731.4364	0.0140	0.0134	735.7830

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	5742.03	0.0619	0.5292	0.2252	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5331	675.5331	0.0130	0.0124	679.5475
Regional Shopping Center	475.178	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355
Total		**0.0670**	**0.5758**	**0.2643**	**3.6600e-003**		**0.0463**	**0.0463**		**0.0463**	**0.0463**		**731.4364**	**731.4364**	**0.0140**	**0.0134**	**735.7830**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	5.74203	0.0619	0.5292	0.2252	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5331	675.5331	0.0130	0.0124	679.5475
Regional Shopping Center	0.475178	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355
Total		**0.0670**	**0.5758**	**0.2643**	**3.6600e-003**		**0.0463**	**0.0463**		**0.0463**	**0.0463**		**731.4364**	**731.4364**	**0.0140**	**0.0134**	**735.7830**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.6330	0.2040	17.6787	9.4000e-004		0.0984	0.0984		0.0984	0.0984	0.0000	31.9458	31.9458	0.0304	0.0000	32.7063
Unmitigated	6.6330	0.2040	17.6787	9.4000e-004		0.0984	0.0984		0.0984	0.0984	0.0000	31.9458	31.9458	0.0304	0.0000	32.7063

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.8184					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.2858					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5288	0.2040	17.6787	9.4000e-004		0.0984	0.0984		0.0984	0.0984		31.9458	31.9458	0.0304		32.7063
Total	**6.6330**	**0.2040**	**17.6787**	**9.4000e-004**		**0.0984**	**0.0984**		**0.0984**	**0.0984**	**0.0000**	**31.9458**	**31.9458**	**0.0304**	**0.0000**	**32.7063**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.8184					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.2858					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5288	0.2040	17.6787	9.4000e-004		0.0984	0.0984		0.0984	0.0984		31.9458	31.9458	0.0304		32.7063
Total	**6.6330**	**0.2040**	**17.6787**	**9.4000e-004**		**0.0984**	**0.0984**		**0.0984**	**0.0984**	**0.0000**	**31.9458**	**31.9458**	**0.0304**	**0.0000**	**32.7063**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Unmitigated

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0
Other Asphalt Surfaces	2.50	Acre	2.50	108,900.00	0
Parking Lot	1.50	Acre	1.50	65,340.00	0
City Park	10.78	Acre	10.78	469,576.80	0
City Park	4.62	Acre	4.62	201,247.20	0
City Park	0.50	Acre	1.40	21,780.00	0
Apartments Mid Rise	215.00	Dwelling Unit	7.14	215,000.00	621
Retirement Community	38.00	Dwelling Unit	1.26	38,000.00	77
Retirement Community	705.00	Dwelling Unit	89.49	705,000.00	1466
Single Family Housing	732.00	Dwelling Unit	78.51	1,326,600.00	2078
Regional Shopping Center	32.00	1000sqft	5.33	32,000.00	0
City Park	2.19	Acre	2.19	95,396.40	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Buildout Year: 2035

Land Use - Land use info as provided by the unit counts/gross acres/sf provided by applicant. 8,000sf restroom is in the Lot D park. 21,000sf clubhouse/restroom is incl. in the Lot A park. Population provided by ACS projections.

Construction Phase - Note - constructed not modeled under this (operational) scenario.

Off-road Equipment -

Trips and VMT -

Grading - Assumes whole project site is graded (except for protected areas) = 319.9 acres. 152,708 CY of material exported from project site (as provided by the Project Applicant).

Architectural Coating -

Vehicle Trips - Trip rates used from Traffic Impact Memo (June, 2019), inclusive of average internal capture rate the traffic consultant applied to AM and PM peak hours. Park trips are assumed to be accounted for by the land uses provided in the Traffic Impact Memo.

Road Dust - Project will not have unpaved roads during the project's operational phase. Since the project is in the SMAQMD jursidiction, project uses the CARB's 2.0 and 0.2 method (per CalEEMod User Guidebook).

Woodstoves - No hearths modeled (per SMAQMD Guidance - See User Tips guide from February 2019).

Consumer Products - 'General Category' consumer products EF red. by 29.1% - reflects project person/du value (2.504) vs. statewide avg. (2.97) and latest statewide data (ARB).

Area Coating - Average of 75 g/l for all coatings, per SMAQMD guidance.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 78.51 - 89.49 - 7.14 - 5.33 - 32.3 - 21.3 - 17.41 = 278.62 acres

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation - Density = ~6.66 du/acre. Increase walkability design (144.9 int/sq. mile). Improve ped network. Provide traffic calming (50%/50%). 100% increase in transit coverage (current coverage=0). Provide Transit Accessibility (0.25 mile)

Mobile Commute Mitigation -

Area Mitigation - No hearths are to be installed as part of the proposed project. Flat (i.e. non-reflective) paints are assumed for projects building interiors. (see SMAQMD Rule 442 - maximum VOC content for flat paints is 75 g/L).

Energy Mitigation - High-efficiency lighting (LEDs) (71.5% improvement). EE appliances. 95% electricity generated via renewables (on-site or SMUD contract).

Water Mitigation - Install low-floor indoor water use fixtures, and use water-efficient irrigation systems (=current version of Title 24).

Fleet Mix -

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Unmitigated - Sacramento County, Annual

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	75
tblAreaCoating	Area_EF_Nonresidential_Interior	100	75
tblAreaCoating	Area_EF_Residential_Exterior	100	75
tblAreaCoating	Area_EF_Residential_Interior	100	75
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConsumerProducts	ROG_EF	2.14E-05	1.5173E-05
tblLandUse	LandUseSquareFeet	1,317,600.00	1,326,600.00
tblLandUse	LotAcreage	0.50	1.40
tblLandUse	LotAcreage	5.66	7.14
tblLandUse	LotAcreage	7.60	1.26
tblLandUse	LotAcreage	141.00	89.49
tblLandUse	LotAcreage	237.66	78.51
tblLandUse	LotAcreage	0.73	5.33
tblLandUse	Population	574.00	621.00
tblLandUse	Population	101.00	77.00
tblLandUse	Population	1,882.00	1,466.00
tblLandUse	Population	1,954.00	2,078.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblVehicleTrips	ST_TR	6.39	5.70
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	49.97	29.81
tblVehicleTrips	ST_TR	2.03	3.39
tblVehicleTrips	ST_TR	9.91	9.25
tblVehicleTrips	SU_TR	5.86	5.70
tblVehicleTrips	SU_TR	16.74	0.00

tblVehicleTrips	SU_TR	25.24	29.81
tblVehicleTrips	SU_TR	1.95	3.39
tblVehicleTrips	SU_TR	8.62	9.25
tblVehicleTrips	WD_TR	6.65	5.70
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	42.70	29.81
tblVehicleTrips	WD_TR	2.40	3.39
tblVehicleTrips	WD_TR	9.52	9.25

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3729	3.8217	1.9811	3.5400e-003	1.6379	0.1979	1.8357	0.8969	0.1820	1.0790	0.0000	311.4180	311.4180	0.0976	0.0000	313.8582
Maximum	**0.3729**	**3.8217**	**1.9811**	**3.5400e-003**	**1.6379**	**0.1979**	**1.8357**	**0.8969**	**0.1820**	**1.0790**	**0.0000**	**311.4180**	**311.4180**	**0.0976**	**0.0000**	**313.8582**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3729	3.8216	1.9811	3.5400e-003	1.6369	0.1979	1.8348	0.8967	0.1820	1.0787	0.0000	311.4177	311.4177	0.0976	0.0000	313.8579
Maximum	**0.3729**	**3.8216**	**1.9811**	**3.5400e-003**	**1.6369**	**0.1979**	**1.8348**	**0.8967**	**0.1820**	**1.0787**	**0.0000**	**311.4177**	**311.4177**	**0.0976**	**0.0000**	**313.8579**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.06**	**0.00**	**0.05**	**0.03**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2020	3-31-2020	1.5150	1.5150
2	4-1-2020	6-30-2020	1.5149	1.5149
3	7-1-2020	9-30-2020	1.1653	1.1653
		Highest	1.5150	1.5150

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.1321	0.2004	17.3678	9.2000e-004		0.0967	0.0967		0.0967	0.0967	0.0000	28.4703	28.4703	0.0271	0.0000	29.1480
Energy	0.1627	1.3907	0.5953	8.8700e-003		0.1124	0.1124		0.1124	0.1124	0.0000	4,547.3038	4,547.3038	0.1752	0.0594	4,569.3755
Mobile	1.6664	8.6563	19.1744	0.0900	10.5386	0.0461	10.5847	2.8217	0.0428	2.8645	0.0000	8,328.8213	8,328.8213	0.3056	0.0000	8,336.4603
Waste						0.0000	0.0000		0.0000	0.0000	248.4447	0.0000	248.4447	14.6827	0.0000	615.5112
Water						0.0000	0.0000		0.0000	0.0000	39.7958	236.6812	276.4770	0.1486	0.0890	306.6987
Total	**9.9611**	**10.2474**	**37.1376**	**0.0998**	**10.5386**	**0.2552**	**10.7937**	**2.8217**	**0.2519**	**3.0735**	**288.2405**	**13,141.2766**	**13,429.5172**	**15.3391**	**0.1483**	**13,857.1938**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.1321	0.2004	17.3678	9.2000e-004		0.0967	0.0967		0.0967	0.0967	0.0000	28.4703	28.4703	0.0271	0.0000	29.1480
Energy	0.1627	1.3907	0.5953	8.8700e-003		0.1124	0.1124		0.1124	0.1124	0.0000	1,731.9572	1,731.9572	0.0369	0.0308	1,742.0437
Mobile	1.5671	8.1708	16.8770	0.0775	8.9578	0.0403	8.9981	2.3984	0.0374	2.4358	0.0000	7,171.8008	7,171.8008	0.2713	0.0000	7,178.5838
Waste						0.0000	0.0000		0.0000	0.0000	248.4447	0.0000	248.4447	14.6827	0.0000	615.5112
Water						0.0000	0.0000		0.0000	0.0000	31.8367	201.3846	233.2213	0.1195	0.0713	257.4499
Total	**9.8618**	**9.7618**	**34.8401**	**0.0872**	**8.9578**	**0.2493**	**9.2071**	**2.3984**	**0.2464**	**2.6448**	**280.2814**	**9,133.6129**	**9,413.8943**	**15.1374**	**0.1020**	**9,822.7366**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.00**	**4.74**	**6.19**	**12.54**	**15.00**	**2.29**	**14.70**	**15.00**	**2.16**	**13.95**	**2.76**	**30.50**	**29.90**	**1.31**	**31.20**	**29.11**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	1,585.9200
Vegetation Land Change	-1,083.8788
Total	**502.0412**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Placeholder (see Construction model for Construction Emissions)	Site Preparation	1/1/2020	9/8/2020	5	180	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 5

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Placeholder (see Construction model for Construction Emissions)	Rubber Tired Dozers	3	8.00	247	0.40
Placeholder (see Construction model for Construction Emissions)	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Placeholder (see Construction model for	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Clean Paved Roads

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6260	0.0000	1.6260	0.8938	0.0000	0.8938	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3669	3.8176	1.9362	3.4200e-003		0.1978	0.1978		0.1820	0.1820	0.0000	300.8761	300.8761	0.0973	0.0000	303.3089
Total	**0.3669**	**3.8176**	**1.9362**	**3.4200e-003**	**1.6260**	**0.1978**	**1.8237**	**0.8938**	**0.1820**	**1.0757**	**0.0000**	**300.8761**	**300.8761**	**0.0973**	**0.0000**	**303.3089**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0300e-003	4.0900e-003	0.0448	1.2000e-004	0.0119	9.0000e-005	0.0120	3.1600e-003	8.0000e-005	3.2400e-003	0.0000	10.5419	10.5419	3.0000e-004	0.0000	10.5494
Total	**6.0300e-003**	**4.0900e-003**	**0.0448**	**1.2000e-004**	**0.0119**	**9.0000e-005**	**0.0120**	**3.1600e-003**	**8.0000e-005**	**3.2400e-003**	**0.0000**	**10.5419**	**10.5419**	**3.0000e-004**	**0.0000**	**10.5494**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6260	0.0000	1.6260	0.8938	0.0000	0.8938	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3669	3.8176	1.9362	3.4200e-003		0.1978	0.1978		0.1820	0.1820	0.0000	300.8758	300.8758	0.0973	0.0000	303.3085
Total	**0.3669**	**3.8176**	**1.9362**	**3.4200e-003**	**1.6260**	**0.1978**	**1.8237**	**0.8938**	**0.1820**	**1.0757**	**0.0000**	**300.8758**	**300.8758**	**0.0973**	**0.0000**	**303.3085**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0300e-003	4.0900e-003	0.0448	1.2000e-004	0.0110	9.0000e-005	0.0111	2.9400e-003	8.0000e-005	3.0200e-003	0.0000	10.5419	10.5419	3.0000e-004	0.0000	10.5494
Total	**6.0300e-003**	**4.0900e-003**	**0.0448**	**1.2000e-004**	**0.0110**	**9.0000e-005**	**0.0111**	**2.9400e-003**	**8.0000e-005**	**3.0200e-003**	**0.0000**	**10.5419**	**10.5419**	**3.0000e-004**	**0.0000**	**10.5494**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Walkability Design

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.5671	8.1708	16.8770	0.0775	8.9578	0.0403	8.9981	2.3984	0.0374	2.4358	0.0000	7,171.8008	7,171.8008	0.2713	0.0000	7,178.5838
Unmitigated	1.6664	8.6563	19.1744	0.0900	10.5386	0.0461	10.5847	2.8217	0.0428	2.8645	0.0000	8,328.8213	8,328.8213	0.3056	0.0000	8,336.4603

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,225.01	1,225.01	1225.01	3,143,498	2,829,148
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	954.00	954.00	954.00	1,333,029	1,199,726
Retirement Community	129.00	129.00	129.00	331,038	297,934
Retirement Community	2,393.36	2,393.36	2393.36	6,141,628	5,527,465
Single Family Housing	6,768.29	6,768.29	6768.29	17,368,174	15,631,357
Total	11,469.66	11,469.66	11,469.66	28,317,367	25,485,630

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Regional Shopping Center	10.00	5.00	6.50	16.30	64.70	19.00	54	35	11
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Other Asphalt Surfaces	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Parking Lot	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Regional Shopping Center	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	121.9912	121.9912	5.9900e-003	1.2400e-003	122.5105
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,937.3378	2,937.3378	0.1443	0.0299	2,949.8423
NaturalGas Mitigated	0.1627	1.3907	0.5953	8.8700e-003		0.1124	0.1124		0.1124	0.1124	0.0000	1,609.9660	1,609.9660	0.0309	0.0295	1,619.5332
NaturalGas Unmitigated	0.1627	1.3907	0.5953	8.8700e-003		0.1124	0.1124		0.1124	0.1124	0.0000	1,609.9660	1,609.9660	0.0309	0.0295	1,619.5332

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.09584e+006	0.0113	0.0966	0.0411	6.2000e-004		7.8100e-003	7.8100e-003		7.8100e-003	7.8100e-003	0.0000	111.8421	111.8421	2.1400e-003	2.0500e-003	112.5067
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	173440	9.4000e-004	8.5000e-003	7.1400e-003	5.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	9.2554	9.2554	1.8000e-004	1.7000e-004	9.3104
Retirement Community	459751	2.4800e-003	0.0212	9.0100e-003	1.4000e-004		1.7100e-003	1.7100e-003		1.7100e-003	1.7100e-003	0.0000	24.5341	24.5341	4.7000e-004	4.5000e-004	24.6799
Retirement Community	8.5296e+006	0.0460	0.3930	0.1673	2.5100e-003		0.0318	0.0318		0.0318	0.0318	0.0000	455.1718	455.1718	8.7200e-003	8.3400e-003	457.8767
Single Family Housing	1.8911e+007	0.1020	0.8714	0.3708	5.5600e-003		0.0705	0.0705		0.0705	0.0705	0.0000	1,009.1626	1,009.1626	0.0193	0.0185	1,015.1596
Total		**0.1627**	**1.3907**	**0.5953**	**8.8800e-003**		**0.1124**	**0.1124**		**0.1124**	**0.1124**	**0.0000**	**1,609.9660**	**1,609.9660**	**0.0309**	**0.0295**	**1,619.5332**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.09584e+006	0.0113	0.0966	0.0411	6.2000e-004		7.8100e-003	7.8100e-003		7.8100e-003	7.8100e-003	0.0000	111.8421	111.8421	2.1400e-003	2.0500e-003	112.5067
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	173440	9.4000e-004	8.5000e-003	7.1400e-003	5.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	9.2554	9.2554	1.8000e-004	1.7000e-004	9.3104
Retirement Community	459751	2.4800e-003	0.0212	9.0100e-003	1.4000e-004		1.7100e-003	1.7100e-003		1.7100e-003	1.7100e-003	0.0000	24.5341	24.5341	4.7000e-004	4.5000e-004	24.6799
Retirement Community	8.5296e+006	0.0460	0.3930	0.1673	2.5100e-003		0.0318	0.0318		0.0318	0.0318	0.0000	455.1718	455.1718	8.7200e-003	8.3400e-003	457.8767
Single Family Housing	1.8911e+007	0.1020	0.8714	0.3708	5.5600e-003		0.0705	0.0705		0.0705	0.0705	0.0000	1,009.1626	1,009.1626	0.0193	0.0185	1,015.1596
Total		**0.1627**	**1.3907**	**0.5953**	**8.8800e-003**		**0.1124**	**0.1124**		**0.1124**	**0.1124**	**0.0000**	**1,609.9660**	**1,609.9660**	**0.0309**	**0.0295**	**1,619.5332**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	915139	245.0377	0.0120	2.4900e-003	246.0808
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	22869	6.1234	3.0000e-004	6.0000e-005	6.1495
Regional Shopping Center	370240	99.1355	4.8700e-003	1.0100e-003	99.5575
Retirement Community	178029	47.6691	2.3400e-003	4.8000e-004	47.8721
Retirement Community	3.30291e+006	884.3878	0.0435	8.9900e-003	888.1527
Single Family Housing	6.18085e+006	1,654.9843	0.0813	0.0168	1,662.0297
Total		**2,937.3378**	**0.1443**	**0.0299**	**2,949.8423**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	38916.9	10.4204	5.1000e-004	1.1000e-004	10.4647
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	325.883	0.0873	0.0000	0.0000	0.0876
Regional Shopping Center	12167.3	3.2579	1.6000e-004	3.0000e-005	3.2718
Retirement Community	136067	36.4333	1.7900e-003	3.7000e-004	36.5884
Retirement Community	7334.1	1.9638	1.0000e-004	2.0000e-005	1.9721
Single Family Housing	260788	69.8286	3.4300e-003	7.1000e-004	70.1258
Total		**121.9912**	**5.9900e-003**	**1.2400e-003**	**122.5105**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.1321	0.2004	17.3678	9.2000e-004		0.0967	0.0967		0.0967	0.0967	0.0000	28.4703	28.4703	0.0271	0.0000	29.1480
Unmitigated	8.1321	0.2004	17.3678	9.2000e-004		0.0967	0.0967		0.0967	0.0967	0.0000	28.4703	28.4703	0.0271	0.0000	29.1480

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.0964					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.5164					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5193	0.2004	17.3678	9.2000e-004		0.0967	0.0967		0.0967	0.0967	0.0000	28.4703	28.4703	0.0271	0.0000	29.1480
Total	**8.1321**	**0.2004**	**17.3678**	**9.2000e-004**		**0.0967**	**0.0967**		**0.0967**	**0.0967**	**0.0000**	**28.4703**	**28.4703**	**0.0271**	**0.0000**	**29.1480**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.0964					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.5164					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5193	0.2004	17.3678	9.2000e-004		0.0967	0.0967		0.0967	0.0967	0.0000	28.4703	28.4703	0.0271	0.0000	29.1480
Total	**8.1321**	**0.2004**	**17.3678**	**9.2000e-004**		**0.0967**	**0.0967**		**0.0967**	**0.0967**	**0.0000**	**28.4703**	**28.4703**	**0.0271**	**0.0000**	**29.1480**

7.0 Water Detail

7.1 Mitigation Measures Water

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	233.2213	0.1195	0.0713	257.4499
Unmitigated	276.4770	0.1486	0.0890	306.6987

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	14.0081 / 8.8312	31.9212	0.0184	0.0111	35.6742
City Park	0 / 21.5539	20.1995	9.9000e-004	2.1000e-004	20.2855
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	2.37032 / 1.45278	5.3625	3.1100e-003	1.8700e-003	5.9973
Retirement Community	48.4094 / 30.519	110.3136	0.0635	0.0382	123.2835
Single Family Housing	47.6927 / 30.0672	108.6804	0.0626	0.0376	121.4583
Total		**276.4771**	**0.1486**	**0.0890**	**306.6987**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	11.2065 / 8.2925	26.6873	0.0148	8.8500e-003	29.6947
City Park	0 / 20.2391	18.9673	9.3000e-004	1.9000e-004	19.0480
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1.89626 / 1.36416	4.4792	2.5000e-003	1.5000e-003	4.9879
Retirement Community	38.7276 / 28.6573	92.2264	0.0510	0.0306	102.6193
Single Family Housing	38.1542 / 28.2331	90.8610	0.0503	0.0301	101.1000
Total		**233.2213**	**0.1195**	**0.0713**	**257.4499**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	248.4447	14.6827	0.0000	615.5112
Unmitigated	248.4447	14.6827	0.0000	615.5112

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	98.9	20.0758	1.1865	0.0000	49.7370
City Park	1.56	0.3167	0.0187	0.0000	0.7845
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	33.6	6.8205	0.4031	0.0000	16.8975
Retirement Community	341.78	69.3783	4.1001	0.0000	171.8817
Single Family Housing	748.08	151.8535	8.9743	0.0000	376.2106
Total		**248.4447**	**14.6827**	**0.0000**	**615.5112**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	98.9	20.0758	1.1865	0.0000	49.7370
City Park	1.56	0.3167	0.0187	0.0000	0.7845
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	33.6	6.8205	0.4031	0.0000	16.8975
Retirement Community	341.78	69.3783	4.1001	0.0000	171.8817
Single Family Housing	748.08	151.8535	8.9743	0.0000	376.2106
Total		**248.4447**	**14.6827**	**0.0000**	**615.5112**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	502.0412	0.0000	0.0000	502.0412

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	530.1 / 278.62	-1,083.8788	0.0000	0.0000	-1,083.8788
Total		**-1,083.8788**	**0.0000**	**0.0000**	**-1,083.8788**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	2240	1,585.9200	0.0000	0.0000	1,585.9200
Total		**1,585.9200**	**0.0000**	**0.0000**	**1,585.9200**

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Unmitigated

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0
Other Asphalt Surfaces	2.50	Acre	2.50	108,900.00	0
Parking Lot	1.50	Acre	1.50	65,340.00	0
City Park	10.78	Acre	10.78	469,576.80	0
City Park	4.62	Acre	4.62	201,247.20	0
City Park	0.50	Acre	1.40	21,780.00	0
Apartments Mid Rise	215.00	Dwelling Unit	7.14	215,000.00	621
Retirement Community	38.00	Dwelling Unit	1.26	38,000.00	77
Retirement Community	705.00	Dwelling Unit	89.49	705,000.00	1466
Single Family Housing	732.00	Dwelling Unit	78.51	1,326,600.00	2078
Regional Shopping Center	32.00	1000sqft	5.33	32,000.00	0
City Park	2.19	Acre	2.19	95,396.40	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Unmitigated - Sacramento County, Summer

Project Characteristics - Buildout Year: 2035

Land Use - Land use info as provided by the unit counts/gross acres/sf provided by applicant. 8,000sf restroom is in the Lot D park. 21,000sf clubhouse/restroom is incl. in the Lot A park. Population provided by ACS projections.

Construction Phase - Note - constructed not modeled under this (operational) scenario.

Off-road Equipment -

Trips and VMT -

Grading - Assumes whole project site is graded (except for protected areas) = 319.9 acres. 152,708 CY of material exported from project site (as provided by the Project Applicant).

Architectural Coating -

Vehicle Trips - Trip rates used from Traffic Impact Memo (June, 2019), inclusive of average internal capture rate the traffic consultant applied to AM and PM peak hours. Park trips are assumed to be accounted for by the land uses provided in the Traffic Impact Memo.

Road Dust - Project will not have unpaved roads during the project's operational phase. Since the project is in the SMAQMD jursidiction, project uses the CARB's 2.0 and 0.2 method (per CalEEMod User Guidebook).

Woodstoves - No hearths modeled (per SMAQMD Guidance - See User Tips guide from February 2019).

Consumer Products - 'General Category' consumer products EF red. by 29.1% - reflects project person/du value (2.504) vs. statewide avg. (2.97) and latest statewide data (ARB).

Area Coating - Average of 75 g/l for all coatings, per SMAQMD guidance.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 78.51 - 89.49 - 7.14 - 5.33 - 32.3 - 21.3 - 17.41 = 278.62 acres

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation - Density = ~6.66 du/acre. Increase walkability design (144.9 int/sq. mile). Improve ped network. Provide traffic calming (50%/50%). 100% increase in transit coverage (current coverage=0). Provide Transit Accessibility (0.25 mile)

Mobile Commute Mitigation -

Area Mitigation - No hearths are to be installed as part of the proposed project. Flat (i.e. non-reflective) paints are assumed for projects building interiors. (see SMAQMD Rule 442 - maximum VOC content for flat paints is 75 g/L).

Energy Mitigation - High-efficiency lighting (LEDs) (71.5% improvement). EE appliances. 95% electricity generated via renewables (on-site or SMUD contract).

Water Mitigation - Install low-floor indoor water use fixtures, and use water-efficient irrigation systems (=current version of Title 24).

Fleet Mix -

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Unmitigated - Sacramento County, Summer

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	75
tblAreaCoating	Area_EF_Nonresidential_Interior	100	75
tblAreaCoating	Area_EF_Residential_Exterior	100	75
tblAreaCoating	Area_EF_Residential_Interior	100	75
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConsumerProducts	ROG_EF	2.14E-05	1.5173E-05
tblLandUse	LandUseSquareFeet	1,317,600.00	1,326,600.00
tblLandUse	LotAcreage	0.50	1.40
tblLandUse	LotAcreage	5.66	7.14
tblLandUse	LotAcreage	7.60	1.26
tblLandUse	LotAcreage	141.00	89.49
tblLandUse	LotAcreage	237.66	78.51
tblLandUse	LotAcreage	0.73	5.33
tblLandUse	Population	574.00	621.00
tblLandUse	Population	101.00	77.00
tblLandUse	Population	1,882.00	1,466.00
tblLandUse	Population	1,954.00	2,078.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblVehicleTrips	ST_TR	6.39	5.70
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	49.97	29.81
tblVehicleTrips	ST_TR	2.03	3.39
tblVehicleTrips	ST_TR	9.91	9.25
tblVehicleTrips	SU_TR	5.86	5.70
tblVehicleTrips	SU_TR	16.74	0.00

tblVehicleTrips	SU_TR	25.24	29.81
tblVehicleTrips	SU_TR	1.95	3.39
tblVehicleTrips	SU_TR	8.62	9.25
tblVehicleTrips	WD_TR	6.65	5.70
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	42.70	29.81
tblVehicleTrips	WD_TR	2.40	3.39
tblVehicleTrips	WD_TR	9.52	9.25

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1541	42.4585	22.1013	0.0395	18.2032	2.1984	20.4016	9.9670	2.0225	11.9895	0.0000	3,827.9339	3,827.9339	1.1959	0.0000	3,857.8321
Maximum	**4.1541**	**42.4585**	**22.1013**	**0.0395**	**18.2032**	**2.1984**	**20.4016**	**9.9670**	**2.0225**	**11.9895**	**0.0000**	**3,827.9339**	**3,827.9339**	**1.1959**	**0.0000**	**3,857.8321**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1541	42.4585	22.1013	0.0395	18.1925	2.1984	20.3908	9.9644	2.0225	11.9869	0.0000	3,827.9339	3,827.9339	1.1959	0.0000	3,857.8321
Maximum	**4.1541**	**42.4585**	**22.1013**	**0.0395**	**18.1925**	**2.1984**	**20.3908**	**9.9644**	**2.0225**	**11.9869**	**0.0000**	**3,827.9339**	**3,827.9339**	**1.1959**	**0.0000**	**3,857.8321**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.06**	**0.00**	**0.05**	**0.03**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	45.8683	1.6030	138.9427	7.3600e-003		0.7732	0.7732		0.7732	0.7732	0.0000	251.0654	251.0654	0.2390	0.0000	257.0409
Energy	0.8914	7.6202	3.2619	0.0486		0.6159	0.6159		0.6159	0.6159		9,724.2945	9,724.2945	0.1864	0.1783	9,782.0811
Mobile	11.7470	46.4404	119.3208	0.5326	59.9473	0.2531	60.2004	16.0050	0.2352	16.2402		54,275.0405	54,275.0405	1.8677		54,321.7320
Total	**58.5067**	**55.6635**	**261.5254**	**0.5886**	**59.9473**	**1.6422**	**61.5895**	**16.0050**	**1.6243**	**17.6293**	**0.0000**	**64,250.4004**	**64,250.4004**	**2.2931**	**0.1783**	**64,360.8540**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	45.8683	1.6030	138.9427	7.3600e-003		0.7732	0.7732		0.7732	0.7732	0.0000	251.0654	251.0654	0.2390	0.0000	257.0409
Energy	0.8914	7.6202	3.2619	0.0486		0.6159	0.6159		0.6159	0.6159		9,724.2945	9,724.2945	0.1864	0.1783	9,782.0811
Mobile	11.1865	43.9739	104.1099	0.4583	50.9552	0.2209	51.1761	13.6043	0.2052	13.8095		46,716.4365	46,716.4365	1.6526		46,757.7520
Total	**57.9461**	**53.1970**	**246.3145**	**0.5143**	**50.9552**	**1.6100**	**52.5652**	**13.6043**	**1.5943**	**15.1986**	**0.0000**	**56,691.7964**	**56,691.7964**	**2.0780**	**0.1783**	**56,796.8740**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.96**	**4.43**	**5.82**	**12.62**	**15.00**	**1.96**	**14.65**	**15.00**	**1.84**	**13.79**	**0.00**	**11.76**	**11.76**	**9.38**	**0.00**	**11.75**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Placeholder (see Construction model for Construction Emissions)	Site Preparation	1/1/2020	9/8/2020	5	180	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 5

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Placeholder (see Construction model for Construction Emissions)	Rubber Tired Dozers	3	8.00	247	0.40
Placeholder (see Construction model for Construction Emissions)	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Placeholder (see Construction model for	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Clean Paved Roads

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0776	0.0412	0.5877	1.4400e-003	0.1369	9.5000e-004	0.1379	0.0363	8.8000e-004	0.0372		142.8323	142.8323	4.0900e-003		142.9346
Total	**0.0776**	**0.0412**	**0.5877**	**1.4400e-003**	**0.1369**	**9.5000e-004**	**0.1379**	**0.0363**	**8.8000e-004**	**0.0372**		**142.8323**	**142.8323**	**4.0900e-003**		**142.9346**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0776	0.0412	0.5877	1.4400e-003	0.1262	9.5000e-004	0.1272	0.0337	8.8000e-004	0.0346		142.8323	142.8323	4.0900e-003		142.9346
Total	**0.0776**	**0.0412**	**0.5877**	**1.4400e-003**	**0.1262**	**9.5000e-004**	**0.1272**	**0.0337**	**8.8000e-004**	**0.0346**		**142.8323**	**142.8323**	**4.0900e-003**		**142.9346**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Walkability Design

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	11.1865	43.9739	104.1099	0.4583	50.9552	0.2209	51.1761	13.6043	0.2052	13.8095		46,716.4365	46,716.4365	1.6526		46,757.7520
Unmitigated	11.7470	46.4404	119.3208	0.5326	59.9473	0.2531	60.2004	16.0050	0.2352	16.2402		54,275.0405	54,275.0405	1.8677		54,321.7320

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,225.01	1,225.01	1225.01	3,143,498	2,829,148
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	954.00	954.00	954.00	1,333,029	1,199,726
Retirement Community	129.00	129.00	129.00	331,038	297,934
Retirement Community	2,393.36	2,393.36	2393.36	6,141,628	5,527,465
Single Family Housing	6,768.29	6,768.29	6768.29	17,368,174	15,631,357
Total	11,469.66	11,469.66	11,469.66	28,317,367	25,485,630

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Regional Shopping Center	10.00	5.00	6.50	16.30	64.70	19.00	54	35	11
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Other Asphalt Surfaces	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Parking Lot	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Regional Shopping Center	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.8914	7.6202	3.2619	0.0486		0.6159	0.6159		0.6159	0.6159		9,724.2945	9,724.2945	0.1864	0.1783	9,782.0811
NaturalGas Unmitigated	0.8914	7.6202	3.2619	0.0486		0.6159	0.6159		0.6159	0.6159		9,724.2945	9,724.2945	0.1864	0.1783	9,782.0811

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	5742.03	0.0619	0.5292	0.2252	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5331	675.5331	0.0130	0.0124	679.5475
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	475.178	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355
Retirement Community	1259.59	0.0136	0.1161	0.0494	7.4000e-004		9.3900e-003	9.3900e-003		9.3900e-003	9.3900e-003		148.1874	148.1874	2.8400e-003	2.7200e-003	149.0680
Retirement Community	23368.8	0.2520	2.1536	0.9164	0.0138		0.1741	0.1741		0.1741	0.1741		2,749.2660	2,749.2660	0.0527	0.0504	2,765.6035
Single Family Housing	51810.9	0.5588	4.7747	2.0318	0.0305		0.3860	0.3860		0.3860	0.3860		6,095.4047	6,095.4047	0.1168	0.1118	6,131.6266
Total		**0.8914**	**7.6202**	**3.2619**	**0.0486**		**0.6159**	**0.6159**		**0.6159**	**0.6159**		**9,724.2945**	**9,724.2945**	**0.1864**	**0.1783**	**9,782.0811**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	5.74203	0.0619	0.5292	0.2252	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5331	675.5331	0.0130	0.0124	679.5475
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.475178	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355
Retirement Community	1.25959	0.0136	0.1161	0.0494	7.4000e-004		9.3900e-003	9.3900e-003		9.3900e-003	9.3900e-003		148.1874	148.1874	2.8400e-003	2.7200e-003	149.0680
Retirement Community	23.3688	0.2520	2.1536	0.9164	0.0138		0.1741	0.1741		0.1741	0.1741		2,749.2660	2,749.2660	0.0527	0.0504	2,765.6035
Single Family Housing	51.8109	0.5588	4.7747	2.0318	0.0305		0.3860	0.3860		0.3860	0.3860		6,095.4047	6,095.4047	0.1168	0.1118	6,131.6266
Total		**0.8914**	**7.6202**	**3.2619**	**0.0486**		**0.6159**	**0.6159**		**0.6159**	**0.6159**		**9,724.2945**	**9,724.2945**	**0.1864**	**0.1783**	**9,782.0811**

6.0 Area Detail

6.1 Mitigation Measures Area

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Unmitigated - Sacramento County, Summer

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	45.8683	1.6030	138.9427	7.3600e-003		0.7732	0.7732		0.7732	0.7732	0.0000	251.0654	251.0654	0.2390	0.0000	257.0409
Unmitigated	45.8683	1.6030	138.9427	7.3600e-003		0.7732	0.7732		0.7732	0.7732	0.0000	251.0654	251.0654	0.2390	0.0000	257.0409

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.0076					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	35.7060					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.1547	1.6030	138.9427	7.3600e-003		0.7732	0.7732		0.7732	0.7732		251.0654	251.0654	0.2390		257.0409
Total	**45.8683**	**1.6030**	**138.9427**	**7.3600e-003**		**0.7732**	**0.7732**		**0.7732**	**0.7732**	**0.0000**	**251.0654**	**251.0654**	**0.2390**	**0.0000**	**257.0409**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.0076					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	35.7060					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.1547	1.6030	138.9427	7.3600e-003		0.7732	0.7732		0.7732	0.7732		251.0654	251.0654	0.2390		257.0409
Total	**45.8683**	**1.6030**	**138.9427**	**7.3600e-003**		**0.7732**	**0.7732**		**0.7732**	**0.7732**	**0.0000**	**251.0654**	**251.0654**	**0.2390**	**0.0000**	**257.0409**

7.0 Water Detail

7.1 Mitigation Measures Water

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Unmitigated

Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0
Other Asphalt Surfaces	2.50	Acre	2.50	108,900.00	0
Parking Lot	1.50	Acre	1.50	65,340.00	0
City Park	10.78	Acre	10.78	469,576.80	0
City Park	4.62	Acre	4.62	201,247.20	0
City Park	0.50	Acre	1.40	21,780.00	0
Apartments Mid Rise	215.00	Dwelling Unit	7.14	215,000.00	621
Retirement Community	38.00	Dwelling Unit	1.26	38,000.00	77
Retirement Community	705.00	Dwelling Unit	89.49	705,000.00	1466
Single Family Housing	732.00	Dwelling Unit	78.51	1,326,600.00	2078
Regional Shopping Center	32.00	1000sqft	5.33	32,000.00	0
City Park	2.19	Acre	2.19	95,396.40	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Buildout Year: 2035

Land Use - Land use info as provided by the unit counts/gross acres/sf provided by applicant. 8,000sf restroom is in the Lot D park. 21,000sf clubhouse/restroom is incl. in the Lot A park. Population provided by ACS projections.

Construction Phase - Note - constructed not modeled under this (operational) scenario.

Off-road Equipment -

Trips and VMT -

Grading - Assumes whole project site is graded (except for protected areas) = 319.9 acres. 152,708 CY of material exported from project site (as provided by the Project Applicant).

Architectural Coating -

Vehicle Trips - Trip rates used from Traffic Impact Memo (June, 2019), inclusive of average internal capture rate the traffic consultant applied to AM and PM peak hours. Park trips are assumed to be accounted for by the land uses provided in the Traffic Impact Memo.

Road Dust - Project will not have unpaved roads during the project's operational phase. Since the project is in the SMAQMD jursidiction, project uses the CARB's 2.0 and 0.2 method (per CalEEMod User Guidebook).

Woodstoves - No hearths modeled (per SMAQMD Guidance - See User Tips guide from February 2019).

Consumer Products - 'General Category' consumer products EF red. by 29.1% - reflects project person/du value (2.504) vs. statewide avg. (2.97) and latest statewide data (ARB).

Area Coating - Average of 75 g/l for all coatings, per SMAQMD guidance.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 78.51 - 89.49 - 7.14 - 5.33 - 32.3 - 21.3 - 17.41 = 278.62 acres

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation - Density = ~6.66 du/acre. Increase walkability design (144.9 int/sq. mile). Improve ped network. Provide traffic calming (50%/50%). 100% increase in transit coverage (current coverage=0). Provide Transit Accessibility (0.25 mile)

Mobile Commute Mitigation -

Area Mitigation - No hearths are to be installed as part of the proposed project. Flat (i.e. non-reflective) paints are assumed for projects building interiors. (see SMAQMD Rule 442 - maximum VOC content for flat paints is 75 g/L).

Energy Mitigation - High-efficiency lighting (LEDs) (71.5% improvement). EE appliances. 95% electricity generated via renewables (on-site or SMUD contract).

Water Mitigation - Install low-floor indoor water use fixtures, and use water-efficient irrigation systems (=current version of Title 24).

Fleet Mix -

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Unmitigated - Sacramento County, Winter

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	75
tblAreaCoating	Area_EF_Nonresidential_Interior	100	75
tblAreaCoating	Area_EF_Residential_Exterior	100	75
tblAreaCoating	Area_EF_Residential_Interior	100	75
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConsumerProducts	ROG_EF	2.14E-05	1.5173E-05
tblLandUse	LandUseSquareFeet	1,317,600.00	1,326,600.00
tblLandUse	LotAcreage	0.50	1.40
tblLandUse	LotAcreage	5.66	7.14
tblLandUse	LotAcreage	7.60	1.26
tblLandUse	LotAcreage	141.00	89.49
tblLandUse	LotAcreage	237.66	78.51
tblLandUse	LotAcreage	0.73	5.33
tblLandUse	Population	574.00	621.00
tblLandUse	Population	101.00	77.00
tblLandUse	Population	1,882.00	1,466.00
tblLandUse	Population	1,954.00	2,078.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblVehicleTrips	ST_TR	6.39	5.70
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	49.97	29.81
tblVehicleTrips	ST_TR	2.03	3.39
tblVehicleTrips	ST_TR	9.91	9.25
tblVehicleTrips	SU_TR	5.86	5.70
tblVehicleTrips	SU_TR	16.74	0.00

tblVehicleTrips	SU_TR	25.24	29.81
tblVehicleTrips	SU_TR	1.95	3.39
tblVehicleTrips	SU_TR	8.62	9.25
tblVehicleTrips	WD_TR	6.65	5.70
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	42.70	29.81
tblVehicleTrips	WD_TR	2.40	3.39
tblVehicleTrips	WD_TR	9.52	9.25

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1479	42.4682	22.0168	0.0393	18.2032	2.1984	20.4016	9.9670	2.0225	11.9895	0.0000	3,810.5415	3,810.5415	1.1955	0.0000	3,840.4276
Maximum	**4.1479**	**42.4682**	**22.0168**	**0.0393**	**18.2032**	**2.1984**	**20.4016**	**9.9670**	**2.0225**	**11.9895**	**0.0000**	**3,810.5415**	**3,810.5415**	**1.1955**	**0.0000**	**3,840.4276**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1479	42.4682	22.0168	0.0393	18.1925	2.1984	20.3908	9.9644	2.0225	11.9869	0.0000	3,810.5415	3,810.5415	1.1955	0.0000	3,840.4276
Maximum	**4.1479**	**42.4682**	**22.0168**	**0.0393**	**18.1925**	**2.1984**	**20.3908**	**9.9644**	**2.0225**	**11.9869**	**0.0000**	**3,810.5415**	**3,810.5415**	**1.1955**	**0.0000**	**3,840.4276**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.06**	**0.00**	**0.05**	**0.03**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	45.8683	1.6030	138.9427	7.3600e-003		0.7732	0.7732		0.7732	0.7732	0.0000	251.0654	251.0654	0.2390	0.0000	257.0409
Energy	0.8914	7.6202	3.2619	0.0486		0.6159	0.6159		0.6159	0.6159		9,724.2945	9,724.2945	0.1864	0.1783	9,782.0811
Mobile	8.5057	48.2648	108.1130	0.4832	59.9473	0.2543	60.2016	16.0050	0.2363	16.2413		49,324.2136	49,324.2136	1.8966		49,371.6273
Total	**55.2654**	**57.4880**	**250.3176**	**0.5392**	**59.9473**	**1.6434**	**61.5907**	**16.0050**	**1.6254**	**17.6304**	**0.0000**	**59,299.5735**	**59,299.5735**	**2.3220**	**0.1783**	**59,410.7493**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	45.8683	1.6030	138.9427	7.3600e-003		0.7732	0.7732		0.7732	0.7732	0.0000	251.0654	251.0654	0.2390	0.0000	257.0409
Energy	0.8914	7.6202	3.2619	0.0486		0.6159	0.6159		0.6159	0.6159		9,724.2945	9,724.2945	0.1864	0.1783	9,782.0811
Mobile	7.9539	45.4609	95.7627	0.4159	50.9552	0.2221	51.1773	13.6043	0.2063	13.8106		42,453.6312	42,453.6312	1.6890		42,495.8568
Total	**54.7136**	**54.6840**	**237.9673**	**0.4718**	**50.9552**	**1.6112**	**52.5664**	**13.6043**	**1.5954**	**15.1997**	**0.0000**	**52,428.9911**	**52,428.9911**	**2.1144**	**0.1783**	**52,534.9788**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.00**	**4.88**	**4.93**	**12.49**	**15.00**	**1.96**	**14.65**	**15.00**	**1.84**	**13.79**	**0.00**	**11.59**	**11.59**	**8.94**	**0.00**	**11.57**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Placeholder (see Construction model for Construction Emissions)	Site Preparation	1/1/2020	9/8/2020	5	180	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 5

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Placeholder (see Construction model for Construction Emissions)	Rubber Tired Dozers	3	8.00	247	0.40
Placeholder (see Construction model for Construction Emissions)	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Placeholder (see Construction model for	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Clean Paved Roads

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0714	0.0509	0.5032	1.2600e-003	0.1369	9.5000e-004	0.1379	0.0363	8.8000e-004	0.0372		125.4399	125.4399	3.6100e-003		125.5301
Total	**0.0714**	**0.0509**	**0.5032**	**1.2600e-003**	**0.1369**	**9.5000e-004**	**0.1379**	**0.0363**	**8.8000e-004**	**0.0372**		**125.4399**	**125.4399**	**3.6100e-003**		**125.5301**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0714	0.0509	0.5032	1.2600e-003	0.1262	9.5000e-004	0.1272	0.0337	8.8000e-004	0.0346		125.4399	125.4399	3.6100e-003		125.5301
Total	**0.0714**	**0.0509**	**0.5032**	**1.2600e-003**	**0.1262**	**9.5000e-004**	**0.1272**	**0.0337**	**8.8000e-004**	**0.0346**		**125.4399**	**125.4399**	**3.6100e-003**		**125.5301**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Walkability Design

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.9539	45.4609	95.7627	0.4159	50.9552	0.2221	51.1773	13.6043	0.2063	13.8106		42,453.6312	42,453.6312	1.6890		42,495.8568
Unmitigated	8.5057	48.2648	108.1130	0.4832	59.9473	0.2543	60.2016	16.0050	0.2363	16.2413		49,324.2136	49,324.2136	1.8966		49,371.6273

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,225.01	1,225.01	1225.01	3,143,498	2,829,148
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	954.00	954.00	954.00	1,333,029	1,199,726
Retirement Community	129.00	129.00	129.00	331,038	297,934
Retirement Community	2,393.36	2,393.36	2393.36	6,141,628	5,527,465
Single Family Housing	6,768.29	6,768.29	6768.29	17,368,174	15,631,357
Total	11,469.66	11,469.66	11,469.66	28,317,367	25,485,630

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Regional Shopping Center	10.00	5.00	6.50	16.30	64.70	19.00	54	35	11
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Other Asphalt Surfaces	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Parking Lot	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Regional Shopping Center	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.8914	7.6202	3.2619	0.0486		0.6159	0.6159		0.6159	0.6159		9,724.2945	9,724.2945	0.1864	0.1783	9,782.0811
NaturalGas Unmitigated	0.8914	7.6202	3.2619	0.0486		0.6159	0.6159		0.6159	0.6159		9,724.2945	9,724.2945	0.1864	0.1783	9,782.0811

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	5742.03	0.0619	0.5292	0.2252	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5331	675.5331	0.0130	0.0124	679.5475
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	475.178	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355
Retirement Community	1259.59	0.0136	0.1161	0.0494	7.4000e-004		9.3900e-003	9.3900e-003		9.3900e-003	9.3900e-003		148.1874	148.1874	2.8400e-003	2.7200e-003	149.0680
Retirement Community	23368.8	0.2520	2.1536	0.9164	0.0138		0.1741	0.1741		0.1741	0.1741		2,749.2660	2,749.2660	0.0527	0.0504	2,765.6035
Single Family Housing	51810.9	0.5588	4.7747	2.0318	0.0305		0.3860	0.3860		0.3860	0.3860		6,095.4047	6,095.4047	0.1168	0.1118	6,131.6266
Total		**0.8914**	**7.6202**	**3.2619**	**0.0486**		**0.6159**	**0.6159**		**0.6159**	**0.6159**		**9,724.2945**	**9,724.2945**	**0.1864**	**0.1783**	**9,782.0811**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	5.74203	0.0619	0.5292	0.2252	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5331	675.5331	0.0130	0.0124	679.5475
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.475178	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355
Retirement Community	1.25959	0.0136	0.1161	0.0494	7.4000e-004		9.3900e-003	9.3900e-003		9.3900e-003	9.3900e-003		148.1874	148.1874	2.8400e-003	2.7200e-003	149.0680
Retirement Community	23.3688	0.2520	2.1536	0.9164	0.0138		0.1741	0.1741		0.1741	0.1741		2,749.2660	2,749.2660	0.0527	0.0504	2,765.6035
Single Family Housing	51.8109	0.5588	4.7747	2.0318	0.0305		0.3860	0.3860		0.3860	0.3860		6,095.4047	6,095.4047	0.1168	0.1118	6,131.6266
Total		**0.8914**	**7.6202**	**3.2619**	**0.0486**		**0.6159**	**0.6159**		**0.6159**	**0.6159**		**9,724.2945**	**9,724.2945**	**0.1864**	**0.1783**	**9,782.0811**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	45.8683	1.6030	138.9427	7.3600e-003		0.7732	0.7732		0.7732	0.7732	0.0000	251.0654	251.0654	0.2390	0.0000	257.0409
Unmitigated	45.8683	1.6030	138.9427	7.3600e-003		0.7732	0.7732		0.7732	0.7732	0.0000	251.0654	251.0654	0.2390	0.0000	257.0409

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.0076					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	35.7060					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.1547	1.6030	138.9427	7.3600e-003		0.7732	0.7732		0.7732	0.7732		251.0654	251.0654	0.2390		257.0409
Total	**45.8683**	**1.6030**	**138.9427**	**7.3600e-003**		**0.7732**	**0.7732**		**0.7732**	**0.7732**	**0.0000**	**251.0654**	**251.0654**	**0.2390**	**0.0000**	**257.0409**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.0076					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	35.7060					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.1547	1.6030	138.9427	7.3600e-003		0.7732	0.7732		0.7732	0.7732		251.0654	251.0654	0.2390		257.0409
Total	**45.8683**	**1.6030**	**138.9427**	**7.3600e-003**		**0.7732**	**0.7732**		**0.7732**	**0.7732**	**0.0000**	**251.0654**	**251.0654**	**0.2390**	**0.0000**	**257.0409**

7.0 Water Detail

7.1 Mitigation Measures Water

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Mitigated

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0
Other Asphalt Surfaces	2.50	Acre	2.50	108,900.00	0
Parking Lot	1.50	Acre	1.50	65,340.00	0
City Park	10.78	Acre	10.78	469,576.80	0
City Park	4.62	Acre	4.62	201,247.20	0
City Park	0.50	Acre	1.40	21,780.00	0
Apartments Mid Rise	215.00	Dwelling Unit	7.14	215,000.00	621
Retirement Community	38.00	Dwelling Unit	1.26	38,000.00	77
Retirement Community	705.00	Dwelling Unit	89.49	705,000.00	1466
Single Family Housing	732.00	Dwelling Unit	78.51	1,326,600.00	2078
Regional Shopping Center	32.00	1000sqft	5.33	32,000.00	0
City Park	2.19	Acre	2.19	95,396.40	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Buildout Year: 2035

Land Use - Land use info as provided by the unit counts/gross acres/sf provided by applicant. 8,000sf restroom is in the Lot D park. 21,000sf clubhouse/restroom is incl. in the Lot A park. Population provided by ACS projections.

Construction Phase - Note - constructed not modeled under this (operational) scenario.

Off-road Equipment -

Trips and VMT -

Grading - Assumes whole project site is graded (except for protected areas) = 319.9 acres. 152,708 CY of material exported from project site (as provided by the Project Applicant).

Architectural Coating -

Vehicle Trips - Trip rates used from Traffic Impact Memo (June, 2019), inclusive of average internal capture rate the traffic consultant applied to AM and PM peak hours. Park trips are assumed to be accounted for by the land uses provided in the Traffic Impact Memo.

Road Dust - Project will not have unpaved roads during the project's operational phase. Since the project is in the SMAQMD jursidiction, project uses the CARB's 2.0 and 0.2 method (per CalEEMod User Guidebook).

Woodstoves - No hearths modeled (per SMAQMD Guidance - See User Tips guide from February 2019).

Consumer Products - 'General Category' consumer products EF red. by 29.1% - reflects project person/du value (2.504) vs. statewide avg. (2.97) and latest statewide data (ARB).

Area Coating - Average of 75 g/l for all coatings, per SMAQMD guidance.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 78.51 - 89.49 - 7.14 - 5.33 - 32.3 - 21.3 - 17.41 = 278.62 acres

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation - Density = ~6.66 du/acre. Increase walkability design (144.9 int/sq. mile). Improve ped network. Provide traffic calming (50%/50%). 100% increase in transit coverage (current coverage=0). Provide Transit Accessibility (0.25 mile)

Mobile Commute Mitigation - Implement trip reduction program (100% voluntary).

Area Mitigation - No hearths are to be installed as part of the proposed project. Flat (i.e. non-reflective) paints are assumed for projects building interiors. (see SMAQMD Rule 442 - maximum VOC content for flat paints is 75 g/L).

Energy Mitigation - High-efficiency lighting (LEDs) (71.5% improvement). EE appliances. 95% electricity generated via renewables (on-site or SMUD contract). Exceed Title 24 by 2%.

Water Mitigation - Install low-floor indoor water use fixtures, and use water-efficient irrigation systems (=current version of Title 24). Apply Water Conservation

Strategy (25% reduction in Outoroodr water use)
Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	75
tblAreaCoating	Area_EF_Nonresidential_Interior	100	75
tblAreaCoating	Area_EF_Residential_Exterior	100	75
tblAreaCoating	Area_EF_Residential_Interior	100	75
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConsumerProducts	ROG_EF	2.14E-05	1.5173E-05
tblLandUse	LandUseSquareFeet	1,317,600.00	1,326,600.00
tblLandUse	LotAcreage	0.50	1.40
tblLandUse	LotAcreage	5.66	7.14
tblLandUse	LotAcreage	7.60	1.26
tblLandUse	LotAcreage	141.00	89.49
tblLandUse	LotAcreage	237.66	78.51
tblLandUse	LotAcreage	0.73	5.33
tblLandUse	Population	574.00	621.00
tblLandUse	Population	101.00	77.00
tblLandUse	Population	1,882.00	1,466.00
tblLandUse	Population	1,954.00	2,078.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblVehicleTrips	ST_TR	6.39	5.70
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	49.97	29.81
tblVehicleTrips	ST_TR	2.03	3.39
tblVehicleTrips	ST_TR	9.91	9.25

tblVehicleTrips	SU_TR	5.86	5.70
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	25.24	29.81
tblVehicleTrips	SU_TR	1.95	3.39
tblVehicleTrips	SU_TR	8.62	9.25
tblVehicleTrips	WD_TR	6.65	5.70
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	42.70	29.81
tblVehicleTrips	WD_TR	2.40	3.39
tblVehicleTrips	WD_TR	9.52	9.25

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3729	3.8217	1.9811	3.5400e-003	1.6379	0.1979	1.8357	0.8969	0.1820	1.0790	0.0000	311.4180	311.4180	0.0976	0.0000	313.8582
Maximum	**0.3729**	**3.8217**	**1.9811**	**3.5400e-003**	**1.6379**	**0.1979**	**1.8357**	**0.8969**	**0.1820**	**1.0790**	**0.0000**	**311.4180**	**311.4180**	**0.0976**	**0.0000**	**313.8582**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3729	3.8216	1.9811	3.5400e-003	1.6369	0.1979	1.8348	0.8967	0.1820	1.0787	0.0000	311.4177	311.4177	0.0976	0.0000	313.8579
Maximum	**0.3729**	**3.8216**	**1.9811**	**3.5400e-003**	**1.6369**	**0.1979**	**1.8348**	**0.8967**	**0.1820**	**1.0787**	**0.0000**	**311.4177**	**311.4177**	**0.0976**	**0.0000**	**313.8579**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.06**	**0.00**	**0.05**	**0.03**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2020	3-31-2020	1.5150	1.5150
2	4-1-2020	6-30-2020	1.5149	1.5149
3	7-1-2020	9-30-2020	1.1653	1.1653
		Highest	1.5150	1.5150

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.1321	0.2004	17.3678	9.2000e-004		0.0967	0.0967		0.0967	0.0967	0.0000	28.4703	28.4703	0.0271	0.0000	29.1480
Energy	0.1627	1.3907	0.5953	8.8700e-003		0.1124	0.1124		0.1124	0.1124	0.0000	4,547.3038	4,547.3038	0.1752	0.0594	4,569.3755
Mobile	1.6664	8.6563	19.1744	0.0900	10.5386	0.0461	10.5847	2.8217	0.0428	2.8645	0.0000	8,328.8213	8,328.8213	0.3056	0.0000	8,336.4603
Waste						0.0000	0.0000		0.0000	0.0000	248.4447	0.0000	248.4447	14.6827	0.0000	615.5112
Water						0.0000	0.0000		0.0000	0.0000	39.7958	236.6812	276.4770	0.1486	0.0890	306.6987
Total	**9.9611**	**10.2474**	**37.1376**	**0.0998**	**10.5386**	**0.2552**	**10.7937**	**2.8217**	**0.2519**	**3.0735**	**288.2405**	**13,141.2766**	**13,429.5172**	**15.3391**	**0.1483**	**13,857.1938**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.1321	0.2004	17.3678	9.2000e-004		0.0967	0.0967		0.0967	0.0967	0.0000	28.4703	28.4703	0.0271	0.0000	29.1480
Energy	0.1599	1.3671	0.5852	8.7200e-003		0.1105	0.1105		0.1105	0.1105	0.0000	1,704.3469	1,704.3469	0.0363	0.0303	1,714.2699
Mobile	1.5496	8.0856	16.4738	0.0753	8.6804	0.0392	8.7196	2.3241	0.0364	2.3606	0.0000	6,968.7498	6,968.7498	0.2653	0.0000	6,975.3827
Waste						0.0000	0.0000		0.0000	0.0000	248.4447	0.0000	248.4447	14.6827	0.0000	615.5112
Water						0.0000	0.0000		0.0000	0.0000	39.7958	215.0272	254.8230	0.1475	0.0887	284.9525
Total	**9.8416**	**9.6530**	**34.4268**	**0.0849**	**8.6804**	**0.2464**	**8.9267**	**2.3241**	**0.2436**	**2.5677**	**288.2405**	**8,916.5943**	**9,204.8348**	**15.1589**	**0.1190**	**9,619.2642**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.20**	**5.80**	**7.30**	**14.90**	**17.63**	**3.45**	**17.30**	**17.63**	**3.30**	**16.46**	**0.00**	**32.15**	**31.46**	**1.17**	**19.78**	**30.58**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	1,585.9200
Vegetation Land Change	-1,083.8788
Total	**502.0412**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Placeholder (see Construction model for Construction Emissions)	Site Preparation	1/1/2020	9/8/2020	5	180	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 5

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Placeholder (see Construction model for Construction Emissions)	Rubber Tired Dozers	3	8.00	247	0.40
Placeholder (see Construction model for Construction Emissions)	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Placeholder (see Construction model for	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Clean Paved Roads

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6260	0.0000	1.6260	0.8938	0.0000	0.8938	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3669	3.8176	1.9362	3.4200e-003		0.1978	0.1978		0.1820	0.1820	0.0000	300.8761	300.8761	0.0973	0.0000	303.3089
Total	**0.3669**	**3.8176**	**1.9362**	**3.4200e-003**	**1.6260**	**0.1978**	**1.8237**	**0.8938**	**0.1820**	**1.0757**	**0.0000**	**300.8761**	**300.8761**	**0.0973**	**0.0000**	**303.3089**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0300e-003	4.0900e-003	0.0448	1.2000e-004	0.0119	9.0000e-005	0.0120	3.1600e-003	8.0000e-005	3.2400e-003	0.0000	10.5419	10.5419	3.0000e-004	0.0000	10.5494
Total	**6.0300e-003**	**4.0900e-003**	**0.0448**	**1.2000e-004**	**0.0119**	**9.0000e-005**	**0.0120**	**3.1600e-003**	**8.0000e-005**	**3.2400e-003**	**0.0000**	**10.5419**	**10.5419**	**3.0000e-004**	**0.0000**	**10.5494**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6260	0.0000	1.6260	0.8938	0.0000	0.8938	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3669	3.8176	1.9362	3.4200e-003		0.1978	0.1978		0.1820	0.1820	0.0000	300.8758	300.8758	0.0973	0.0000	303.3085
Total	**0.3669**	**3.8176**	**1.9362**	**3.4200e-003**	**1.6260**	**0.1978**	**1.8237**	**0.8938**	**0.1820**	**1.0757**	**0.0000**	**300.8758**	**300.8758**	**0.0973**	**0.0000**	**303.3085**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0300e-003	4.0900e-003	0.0448	1.2000e-004	0.0110	9.0000e-005	0.0111	2.9400e-003	8.0000e-005	3.0200e-003	0.0000	10.5419	10.5419	3.0000e-004	0.0000	10.5494
Total	**6.0300e-003**	**4.0900e-003**	**0.0448**	**1.2000e-004**	**0.0110**	**9.0000e-005**	**0.0111**	**2.9400e-003**	**8.0000e-005**	**3.0200e-003**	**0.0000**	**10.5419**	**10.5419**	**3.0000e-004**	**0.0000**	**10.5494**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Walkability Design

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

Implement Trip Reduction Program

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.5496	8.0856	16.4738	0.0753	8.6804	0.0392	8.7196	2.3241	0.0364	2.3606	0.0000	6,968.7498	6,968.7498	0.2653	0.0000	6,975.3827
Unmitigated	1.6664	8.6563	19.1744	0.0900	10.5386	0.0461	10.5847	2.8217	0.0428	2.8645	0.0000	8,328.8213	8,328.8213	0.3056	0.0000	8,336.4603

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,225.01	1,225.01	1225.01	3,143,498	2,742,998
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	954.00	954.00	954.00	1,333,029	1,149,969
Retirement Community	129.00	129.00	129.00	331,038	288,862
Retirement Community	2,393.36	2,393.36	2393.36	6,141,628	5,359,150
Single Family Housing	6,768.29	6,768.29	6768.29	17,368,174	15,155,370
Total	11,469.66	11,469.66	11,469.66	28,317,367	24,696,349

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Regional Shopping Center	10.00	5.00	6.50	16.30	64.70	19.00	54	35	11
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Other Asphalt Surfaces	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Parking Lot	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Regional Shopping Center	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	121.7019	121.7019	5.9800e-003	1.2400e-003	122.2200
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,937.3378	2,937.3378	0.1443	0.0299	2,949.8423
NaturalGas Mitigated	0.1599	1.3671	0.5852	8.7200e-003		0.1105	0.1105		0.1105	0.1105	0.0000	1,582.6450	1,582.6450	0.0303	0.0290	1,592.0499
NaturalGas Unmitigated	0.1627	1.3907	0.5953	8.8700e-003		0.1124	0.1124		0.1124	0.1124	0.0000	1,609.9660	1,609.9660	0.0309	0.0295	1,619.5332

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.09584e+006	0.0113	0.0966	0.0411	6.2000e-004		7.8100e-003	7.8100e-003		7.8100e-003	7.8100e-003	0.0000	111.8421	111.8421	2.1400e-003	2.0500e-003	112.5067
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	173440	9.4000e-004	8.5000e-003	7.1400e-003	5.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	9.2554	9.2554	1.8000e-004	1.7000e-004	9.3104
Retirement Community	459751	2.4800e-003	0.0212	9.0100e-003	1.4000e-004		1.7100e-003	1.7100e-003		1.7100e-003	1.7100e-003	0.0000	24.5341	24.5341	4.7000e-004	4.5000e-004	24.6799
Retirement Community	8.5296e+006	0.0460	0.3930	0.1673	2.5100e-003		0.0318	0.0318		0.0318	0.0318	0.0000	455.1718	455.1718	8.7200e-003	8.3400e-003	457.8767
Single Family Housing	1.8911e+007	0.1020	0.8714	0.3708	5.5600e-003		0.0705	0.0705		0.0705	0.0705	0.0000	1,009.1626	1,009.1626	0.0193	0.0185	1,015.1596
Total		**0.1627**	**1.3907**	**0.5953**	**8.8800e-003**		**0.1124**	**0.1124**		**0.1124**	**0.1124**	**0.0000**	**1,609.9660**	**1,609.9660**	**0.0309**	**0.0295**	**1,619.5332**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.06548e+006	0.0111	0.0952	0.0405	6.1000e-004		7.6900e-003	7.6900e-003		7.6900e-003	7.6900e-003	0.0000	110.2218	110.2218	2.1100e-003	2.0200e-003	110.8768
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	170566	9.2000e-004	8.3600e-003	7.0200e-003	5.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	9.1021	9.1021	1.7000e-004	1.7000e-004	9.1562
Retirement Community	452598	2.4400e-003	0.0209	8.8700e-003	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.1524	24.1524	4.6000e-004	4.4000e-004	24.2959
Retirement Community	8.39689e+006	0.0453	0.3869	0.1646	2.4700e-003		0.0313	0.0313		0.0313	0.0313	0.0000	448.0902	448.0902	8.5900e-003	8.2100e-003	450.7529
Single Family Housing	1.85721e+007	0.1001	0.8558	0.3642	5.4600e-003		0.0692	0.0692		0.0692	0.0692	0.0000	991.0786	991.0786	0.0190	0.0182	996.9681
Total		**0.1599**	**1.3671**	**0.5852**	**8.7200e-003**		**0.1105**	**0.1105**		**0.1105**	**0.1105**	**0.0000**	**1,582.6450**	**1,582.6450**	**0.0303**	**0.0290**	**1,592.0499**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	915139	245.0377	0.0120	2.4900e-003	246.0808
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	22869	6.1234	3.0000e-004	6.0000e-005	6.1495
Regional Shopping Center	370240	99.1355	4.8700e-003	1.0100e-003	99.5575
Retirement Community	178029	47.6691	2.3400e-003	4.8000e-004	47.8721
Retirement Community	3.30291e+006	884.3878	0.0435	8.9900e-003	888.1527
Single Family Housing	6.18085e+006	1,654.9843	0.0813	0.0168	1,662.0297
Total		**2,937.3378**	**0.1443**	**0.0299**	**2,949.8423**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	38817.8	10.3939	5.1000e-004	1.1000e-004	10.4381
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	325.883	0.0873	0.0000	0.0000	0.0876
Regional Shopping Center	12063	3.2300	1.6000e-004	3.0000e-005	3.2437
Retirement Community	135707	36.3368	1.7900e-003	3.7000e-004	36.4915
Retirement Community	7314.68	1.9586	1.0000e-004	2.0000e-005	1.9669
Single Family Housing	260291	69.6955	3.4200e-003	7.1000e-004	69.9922
Total		**121.7020**	**5.9800e-003**	**1.2400e-003**	**122.2200**

6.0 Area Detail

6.1 Mitigation Measures Area

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Mitigated - Sacramento County, Annual

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.1321	0.2004	17.3678	9.2000e-004		0.0967	0.0967		0.0967	0.0967	0.0000	28.4703	28.4703	0.0271	0.0000	29.1480
Unmitigated	8.1321	0.2004	17.3678	9.2000e-004		0.0967	0.0967		0.0967	0.0967	0.0000	28.4703	28.4703	0.0271	0.0000	29.1480

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.0964					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.5164					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5193	0.2004	17.3678	9.2000e-004		0.0967	0.0967		0.0967	0.0967	0.0000	28.4703	28.4703	0.0271	0.0000	29.1480
Total	**8.1321**	**0.2004**	**17.3678**	**9.2000e-004**		**0.0967**	**0.0967**		**0.0967**	**0.0967**	**0.0000**	**28.4703**	**28.4703**	**0.0271**	**0.0000**	**29.1480**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.0964					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.5164					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5193	0.2004	17.3678	9.2000e-004		0.0967	0.0967		0.0967	0.0967	0.0000	28.4703	28.4703	0.0271	0.0000	29.1480
Total	**8.1321**	**0.2004**	**17.3678**	**9.2000e-004**		**0.0967**	**0.0967**		**0.0967**	**0.0967**	**0.0000**	**28.4703**	**28.4703**	**0.0271**	**0.0000**	**29.1480**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	254.8230	0.1475	0.0887	284.9525
Unmitigated	276.4770	0.1486	0.0890	306.6987

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	14.0081 / 8.8312	31.9212	0.0184	0.0111	35.6742
City Park	0 / 21.5539	20.1995	9.9000e-004	2.1000e-004	20.2855
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	2.37032 / 1.45278	5.3625	3.1100e-003	1.8700e-003	5.9973
Retirement Community	48.4094 / 30.519	110.3136	0.0635	0.0382	123.2835
Single Family Housing	47.6927 / 30.0672	108.6804	0.0626	0.0376	121.4583
Total		**276.4771**	**0.1486**	**0.0890**	**306.6987**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	14.0081 / 6.6234	29.8521	0.0183	0.0110	33.5963
City Park	0 / 16.1654	15.1496	7.4000e-004	1.5000e-004	15.2141
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	2.37032 / 1.08958	5.0221	3.0900e-003	1.8700e-003	5.6555
Retirement Community	48.4094 / 22.8892	103.1633	0.0632	0.0381	116.1027
Single Family Housing	47.6927 / 22.5504	101.6360	0.0622	0.0376	114.3838
Total		**254.8230**	**0.1475**	**0.0887**	**284.9525**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	248.4447	14.6827	0.0000	615.5112
Unmitigated	248.4447	14.6827	0.0000	615.5112

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	98.9	20.0758	1.1865	0.0000	49.7370
City Park	1.56	0.3167	0.0187	0.0000	0.7845
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	33.6	6.8205	0.4031	0.0000	16.8975
Retirement Community	341.78	69.3783	4.1001	0.0000	171.8817
Single Family Housing	748.08	151.8535	8.9743	0.0000	376.2106
Total		**248.4447**	**14.6827**	**0.0000**	**615.5112**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	98.9	20.0758	1.1865	0.0000	49.7370
City Park	1.56	0.3167	0.0187	0.0000	0.7845
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	33.6	6.8205	0.4031	0.0000	16.8975
Retirement Community	341.78	69.3783	4.1001	0.0000	171.8817
Single Family Housing	748.08	151.8535	8.9743	0.0000	376.2106
Total		**248.4447**	**14.6827**	**0.0000**	**615.5112**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	502.0412	0.0000	0.0000	502.0412

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	530.1 / 278.62	-1,083.8788	0.0000	0.0000	-1,083.8788
Total		**-1,083.8788**	**0.0000**	**0.0000**	**-1,083.8788**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	2240	1,585.9200	0.0000	0.0000	1,585.9200
Total		**1,585.9200**	**0.0000**	**0.0000**	**1,585.9200**

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Mitigated

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0
Other Asphalt Surfaces	2.50	Acre	2.50	108,900.00	0
Parking Lot	1.50	Acre	1.50	65,340.00	0
City Park	10.78	Acre	10.78	469,576.80	0
City Park	4.62	Acre	4.62	201,247.20	0
City Park	0.50	Acre	1.40	21,780.00	0
Apartments Mid Rise	215.00	Dwelling Unit	7.14	215,000.00	621
Retirement Community	38.00	Dwelling Unit	1.26	38,000.00	77
Retirement Community	705.00	Dwelling Unit	89.49	705,000.00	1466
Single Family Housing	732.00	Dwelling Unit	78.51	1,326,600.00	2078
Regional Shopping Center	32.00	1000sqft	5.33	32,000.00	0
City Park	2.19	Acre	2.19	95,396.40	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Buildout Year: 2035

Land Use - Land use info as provided by the unit counts/gross acres/sf provided by applicant. 8,000sf restroom is in the Lot D park. 21,000sf clubhouse/restroom is incl. in the Lot A park. Population provided by ACS projections.

Construction Phase - Note - constructed not modeled under this (operational) scenario.

Off-road Equipment -

Trips and VMT -

Grading - Assumes whole project site is graded (except for protected areas) = 319.9 acres. 152,708 CY of material exported from project site (as provided by the Project Applicant).

Architectural Coating -

Vehicle Trips - Trip rates used from Traffic Impact Memo (June, 2019), inclusive of average internal capture rate the traffic consultant applied to AM and PM peak hours. Park trips are assumed to be accounted for by the land uses provided in the Traffic Impact Memo.

Road Dust - Project will not have unpaved roads during the project's operational phase. Since the project is in the SMAQMD jursidiction, project uses the CARB's 2.0 and 0.2 method (per CalEEMod User Guidebook).

Woodstoves - No hearths modeled (per SMAQMD Guidance - See User Tips guide from February 2019).

Consumer Products - 'General Category' consumer products EF red. by 29.1% - reflects project person/du value (2.504) vs. statewide avg. (2.97) and latest statewide data (ARB).

Area Coating - Average of 75 g/l for all coatings, per SMAQMD guidance.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 78.51 - 89.49 - 7.14 - 5.33 - 32.3 - 21.3 - 17.41 = 278.62 acres

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation - Density = ~6.66 du/acre. Increase walkability design (144.9 int/sq. mile). Improve ped network. Provide traffic calming (50%/50%). 100% increase in transit coverage (current coverage=0). Provide Transit Accessibility (0.25 mile)

Mobile Commute Mitigation - Implement trip reduction program (100% voluntary).

Area Mitigation - No hearths are to be installed as part of the proposed project. Flat (i.e. non-reflective) paints are assumed for projects building interiors. (see SMAQMD Rule 442 - maximum VOC content for flat paints is 75 g/L).

Energy Mitigation - High-efficiency lighting (LEDs) (71.5% improvement). EE appliances. 95% electricity generated via renewables (on-site or SMUD contract). Exceed Title 24 by 2%.

Water Mitigation - Install low-floor indoor water use fixtures, and use water-efficient irrigation systems (=current version of Title 24). Apply Water Conservation

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Mitigated - Sacramento County, Summer

Strategy (25% reduction in Outoroodr water use)
Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	75
tblAreaCoating	Area_EF_Nonresidential_Interior	100	75
tblAreaCoating	Area_EF_Residential_Exterior	100	75
tblAreaCoating	Area_EF_Residential_Interior	100	75
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConsumerProducts	ROG_EF	2.14E-05	1.5173E-05
tblLandUse	LandUseSquareFeet	1,317,600.00	1,326,600.00
tblLandUse	LotAcreage	0.50	1.40
tblLandUse	LotAcreage	5.66	7.14
tblLandUse	LotAcreage	7.60	1.26
tblLandUse	LotAcreage	141.00	89.49
tblLandUse	LotAcreage	237.66	78.51
tblLandUse	LotAcreage	0.73	5.33
tblLandUse	Population	574.00	621.00
tblLandUse	Population	101.00	77.00
tblLandUse	Population	1,882.00	1,466.00
tblLandUse	Population	1,954.00	2,078.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblVehicleTrips	ST_TR	6.39	5.70
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	49.97	29.81
tblVehicleTrips	ST_TR	2.03	3.39
tblVehicleTrips	ST_TR	9.91	9.25

tblVehicleTrips	SU_TR	5.86	5.70
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	25.24	29.81
tblVehicleTrips	SU_TR	1.95	3.39
tblVehicleTrips	SU_TR	8.62	9.25
tblVehicleTrips	WD_TR	6.65	5.70
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	42.70	29.81
tblVehicleTrips	WD_TR	2.40	3.39
tblVehicleTrips	WD_TR	9.52	9.25

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1541	42.4585	22.1013	0.0395	18.2032	2.1984	20.4016	9.9670	2.0225	11.9895	0.0000	3,827.9339	3,827.9339	1.1959	0.0000	3,857.8321
Maximum	**4.1541**	**42.4585**	**22.1013**	**0.0395**	**18.2032**	**2.1984**	**20.4016**	**9.9670**	**2.0225**	**11.9895**	**0.0000**	**3,827.9339**	**3,827.9339**	**1.1959**	**0.0000**	**3,857.8321**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1541	42.4585	22.1013	0.0395	18.1925	2.1984	20.3908	9.9644	2.0225	11.9869	0.0000	3,827.9339	3,827.9339	1.1959	0.0000	3,857.8321
Maximum	**4.1541**	**42.4585**	**22.1013**	**0.0395**	**18.1925**	**2.1984**	**20.3908**	**9.9644**	**2.0225**	**11.9869**	**0.0000**	**3,827.9339**	**3,827.9339**	**1.1959**	**0.0000**	**3,857.8321**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.06**	**0.00**	**0.05**	**0.03**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	45.8683	1.6030	138.9427	7.3600e-003		0.7732	0.7732		0.7732	0.7732	0.0000	251.0654	251.0654	0.2390	0.0000	257.0409
Energy	0.8914	7.6202	3.2619	0.0486		0.6159	0.6159		0.6159	0.6159		9,724.2945	9,724.2945	0.1864	0.1783	9,782.0811
Mobile	11.7470	46.4404	119.3208	0.5326	59.9473	0.2531	60.2004	16.0050	0.2352	16.2402		54,275.0405	54,275.0405	1.8677		54,321.7320
Total	**58.5067**	**55.6635**	**261.5254**	**0.5886**	**59.9473**	**1.6422**	**61.5895**	**16.0050**	**1.6243**	**17.6293**	**0.0000**	**64,250.4004**	**64,250.4004**	**2.2931**	**0.1783**	**64,360.8540**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	45.8683	1.6030	138.9427	7.3600e-003		0.7732	0.7732		0.7732	0.7732	0.0000	251.0654	251.0654	0.2390	0.0000	257.0409
Energy	0.8763	7.4909	3.2066	0.0478		0.6054	0.6054		0.6054	0.6054		9,559.2738	9,559.2738	0.1832	0.1753	9,616.0798
Mobile	11.0881	43.5410	101.4405	0.4453	49.3772	0.2152	49.5924	13.1829	0.2000	13.3829		45,389.9419	45,389.9419	1.6149		45,430.3139
Total	**57.8326**	**52.6349**	**243.5897**	**0.5004**	**49.3772**	**1.5939**	**50.9710**	**13.1829**	**1.5786**	**14.7615**	**0.0000**	**55,200.2811**	**55,200.2811**	**2.0371**	**0.1753**	**55,303.4345**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.15**	**5.44**	**6.86**	**14.98**	**17.63**	**2.94**	**17.24**	**17.63**	**2.81**	**16.27**	**0.00**	**14.09**	**14.09**	**11.16**	**1.70**	**14.07**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Placeholder (see Construction model for Construction Emissions)	Site Preparation	1/1/2020	9/8/2020	5	180	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 5

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Placeholder (see Construction model for Construction Emissions)	Rubber Tired Dozers	3	8.00	247	0.40
Placeholder (see Construction model for Construction Emissions)	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Placeholder (see Construction model for	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Clean Paved Roads

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0776	0.0412	0.5877	1.4400e-003	0.1369	9.5000e-004	0.1379	0.0363	8.8000e-004	0.0372		142.8323	142.8323	4.0900e-003		142.9346
Total	**0.0776**	**0.0412**	**0.5877**	**1.4400e-003**	**0.1369**	**9.5000e-004**	**0.1379**	**0.0363**	**8.8000e-004**	**0.0372**		**142.8323**	**142.8323**	**4.0900e-003**		**142.9346**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0776	0.0412	0.5877	1.4400e-003	0.1262	9.5000e-004	0.1272	0.0337	8.8000e-004	0.0346		142.8323	142.8323	4.0900e-003		142.9346
Total	**0.0776**	**0.0412**	**0.5877**	**1.4400e-003**	**0.1262**	**9.5000e-004**	**0.1272**	**0.0337**	**8.8000e-004**	**0.0346**		**142.8323**	**142.8323**	**4.0900e-003**		**142.9346**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Walkability Design

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

Implement Trip Reduction Program

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	11.0881	43.5410	101.4405	0.4453	49.3772	0.2152	49.5924	13.1829	0.2000	13.3829		45,389.9419	45,389.9419	1.6149		45,430.3139
Unmitigated	11.7470	46.4404	119.3208	0.5326	59.9473	0.2531	60.2004	16.0050	0.2352	16.2402		54,275.0405	54,275.0405	1.8677		54,321.7320

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,225.01	1,225.01	1225.01	3,143,498	2,742,998
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	954.00	954.00	954.00	1,333,029	1,149,969
Retirement Community	129.00	129.00	129.00	331,038	288,862
Retirement Community	2,393.36	2,393.36	2393.36	6,141,628	5,359,150
Single Family Housing	6,768.29	6,768.29	6768.29	17,368,174	15,155,370
Total	11,469.66	11,469.66	11,469.66	28,317,367	24,696,349

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Regional Shopping Center	10.00	5.00	6.50	16.30	64.70	19.00	54	35	11
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Other Asphalt Surfaces	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Parking Lot	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Regional Shopping Center	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.8763	7.4909	3.2066	0.0478		0.6054	0.6054		0.6054	0.6054		9,559.2738	9,559.2738	0.1832	0.1753	9,616.0798
NaturalGas Unmitigated	0.8914	7.6202	3.2619	0.0486		0.6159	0.6159		0.6159	0.6159		9,724.2945	9,724.2945	0.1864	0.1783	9,782.0811

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	5742.03	0.0619	0.5292	0.2252	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5331	675.5331	0.0130	0.0124	679.5475
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	475.178	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355
Retirement Community	1259.59	0.0136	0.1161	0.0494	7.4000e-004		9.3900e-003	9.3900e-003		9.3900e-003	9.3900e-003		148.1874	148.1874	2.8400e-003	2.7200e-003	149.0680
Retirement Community	23368.8	0.2520	2.1536	0.9164	0.0138		0.1741	0.1741		0.1741	0.1741		2,749.2660	2,749.2660	0.0527	0.0504	2,765.6035
Single Family Housing	51810.9	0.5588	4.7747	2.0318	0.0305		0.3860	0.3860		0.3860	0.3860		6,095.4047	6,095.4047	0.1168	0.1118	6,131.6266
Total		**0.8914**	**7.6202**	**3.2619**	**0.0486**		**0.6159**	**0.6159**		**0.6159**	**0.6159**		**9,724.2945**	**9,724.2945**	**0.1864**	**0.1783**	**9,782.0811**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	5.65885	0.0610	0.5215	0.2219	3.3300e-003		0.0422	0.0422		0.0422	0.0422		665.7466	665.7466	0.0128	0.0122	669.7028
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.467305	5.0400e-003	0.0458	0.0385	2.7000e-004		3.4800e-003	3.4800e-003		3.4800e-003	3.4800e-003		54.9771	54.9771	1.0500e-003	1.0100e-003	55.3038
Retirement Community	1.24	0.0134	0.1143	0.0486	7.3000e-004		9.2400e-003	9.2400e-003		9.2400e-003	9.2400e-003		145.8819	145.8819	2.8000e-003	2.6700e-003	146.7488
Retirement Community	23.0052	0.2481	2.1201	0.9022	0.0135		0.1714	0.1714		0.1714	0.1714		2,706.4923	2,706.4923	0.0519	0.0496	2,722.5756
Single Family Housing	50.8825	0.5487	4.6892	1.9954	0.0299		0.3791	0.3791		0.3791	0.3791		5,986.1760	5,986.1760	0.1147	0.1098	6,021.7488
Total		**0.8763**	**7.4908**	**3.2066**	**0.0478**		**0.6054**	**0.6054**		**0.6054**	**0.6054**		**9,559.2738**	**9,559.2738**	**0.1832**	**0.1753**	**9,616.0798**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	45.8683	1.6030	138.9427	7.3600e-003		0.7732	0.7732		0.7732	0.7732	0.0000	251.0654	251.0654	0.2390	0.0000	257.0409
Unmitigated	45.8683	1.6030	138.9427	7.3600e-003		0.7732	0.7732		0.7732	0.7732	0.0000	251.0654	251.0654	0.2390	0.0000	257.0409

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.0076					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	35.7060					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.1547	1.6030	138.9427	7.3600e-003		0.7732	0.7732		0.7732	0.7732		251.0654	251.0654	0.2390		257.0409
Total	**45.8683**	**1.6030**	**138.9427**	**7.3600e-003**		**0.7732**	**0.7732**		**0.7732**	**0.7732**	**0.0000**	**251.0654**	**251.0654**	**0.2390**	**0.0000**	**257.0409**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.0076					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	35.7060					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.1547	1.6030	138.9427	7.3600e-003		0.7732	0.7732		0.7732	0.7732		251.0654	251.0654	0.2390		257.0409
Total	**45.8683**	**1.6030**	**138.9427**	**7.3600e-003**		**0.7732**	**0.7732**		**0.7732**	**0.7732**	**0.0000**	**251.0654**	**251.0654**	**0.2390**	**0.0000**	**257.0409**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Mitigated

Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0
Other Asphalt Surfaces	2.50	Acre	2.50	108,900.00	0
Parking Lot	1.50	Acre	1.50	65,340.00	0
City Park	10.78	Acre	10.78	469,576.80	0
City Park	4.62	Acre	4.62	201,247.20	0
City Park	0.50	Acre	1.40	21,780.00	0
Apartments Mid Rise	215.00	Dwelling Unit	7.14	215,000.00	621
Retirement Community	38.00	Dwelling Unit	1.26	38,000.00	77
Retirement Community	705.00	Dwelling Unit	89.49	705,000.00	1466
Single Family Housing	732.00	Dwelling Unit	78.51	1,326,600.00	2078
Regional Shopping Center	32.00	1000sqft	5.33	32,000.00	0
City Park	2.19	Acre	2.19	95,396.40	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2035
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Buildout Year: 2035

Land Use - Land use info as provided by the unit counts/gross acres/sf provided by applicant. 8,000sf restroom is in the Lot D park. 21,000sf clubhouse/restroom is incl. in the Lot A park. Population provided by ACS projections.

Construction Phase - Note - constructed not modeled under this (operational) scenario.

Off-road Equipment -

Trips and VMT -

Grading - Assumes whole project site is graded (except for protected areas) = 319.9 acres. 152,708 CY of material exported from project site (as provided by the Project Applicant).

Architectural Coating -

Vehicle Trips - Trip rates used from Traffic Impact Memo (June, 2019), inclusive of average internal capture rate the traffic consultant applied to AM and PM peak hours. Park trips are assumed to be accounted for by the land uses provided in the Traffic Impact Memo.

Road Dust - Project will not have unpaved roads during the project's operational phase. Since the project is in the SMAQMD jursidiction, project uses the CARB's 2.0 and 0.2 method (per CalEEMod User Guidebook).

Woodstoves - No hearths modeled (per SMAQMD Guidance - See User Tips guide from February 2019).

Consumer Products - 'General Category' consumer products EF red. by 29.1% - reflects project person/du value (2.504) vs. statewide avg. (2.97) and latest statewide data (ARB).

Area Coating - Average of 75 g/l for all coatings, per SMAQMD guidance.

Landscape Equipment -

Energy Use -

Land Use Change - Assumes residential, commercial, and right-of-way are converted from grassland. Total acres = 530.1 - 78.51 - 89.49 - 7.14 - 5.33 - 32.3 - 21.3 - 17.41 = 278.62 acres

Sequestration - Approximately 2,240 new trees planted as part of the project (provided by project applicant).

Construction Off-road Equipment Mitigation - NOTE: This model run reflects operational emissions only.

Mobile Land Use Mitigation - Density = ~6.66 du/acre. Increase walkability design (144.9 int/sq. mile). Improve ped network. Provide traffic calming (50%/50%). 100% increase in transit coverage (current coverage=0). Provide Transit Accessibility (0.25 mile)

Mobile Commute Mitigation - Implement trip reduction program (100% voluntary).

Area Mitigation - No hearths are to be installed as part of the proposed project. Flat (i.e. non-reflective) paints are assumed for projects building interiors. (see SMAQMD Rule 442 - maximum VOC content for flat paints is 75 g/L).

Energy Mitigation - High-efficiency lighting (LEDs) (71.5% improvement). EE appliances. 95% electricity generated via renewables (on-site or SMUD contract). Exceed Title 24 by 2%.

Water Mitigation - Install low-floor indoor water use fixtures, and use water-efficient irrigation systems (=current version of Title 24). Apply Water Conservation

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Mitigated - Sacramento County, Winter

Strategy (25% reduction in Outoroodr water use)
Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	75
tblAreaCoating	Area_EF_Nonresidential_Interior	100	75
tblAreaCoating	Area_EF_Residential_Exterior	100	75
tblAreaCoating	Area_EF_Residential_Interior	100	75
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConsumerProducts	ROG_EF	2.14E-05	1.5173E-05
tblLandUse	LandUseSquareFeet	1,317,600.00	1,326,600.00
tblLandUse	LotAcreage	0.50	1.40
tblLandUse	LotAcreage	5.66	7.14
tblLandUse	LotAcreage	7.60	1.26
tblLandUse	LotAcreage	141.00	89.49
tblLandUse	LotAcreage	237.66	78.51
tblLandUse	LotAcreage	0.73	5.33
tblLandUse	Population	574.00	621.00
tblLandUse	Population	101.00	77.00
tblLandUse	Population	1,882.00	1,466.00
tblLandUse	Population	1,954.00	2,078.00
tblSequestration	NumberOfNewTrees	0.00	2,240.00
tblVehicleTrips	ST_TR	6.39	5.70
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	49.97	29.81
tblVehicleTrips	ST_TR	2.03	3.39
tblVehicleTrips	ST_TR	9.91	9.25

tblVehicleTrips	SU_TR	5.86	5.70
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	25.24	29.81
tblVehicleTrips	SU_TR	1.95	3.39
tblVehicleTrips	SU_TR	8.62	9.25
tblVehicleTrips	WD_TR	6.65	5.70
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	42.70	29.81
tblVehicleTrips	WD_TR	2.40	3.39
tblVehicleTrips	WD_TR	9.52	9.25

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1479	42.4682	22.0168	0.0393	18.2032	2.1984	20.4016	9.9670	2.0225	11.9895	0.0000	3,810.5415	3,810.5415	1.1955	0.0000	3,840.4276
Maximum	**4.1479**	**42.4682**	**22.0168**	**0.0393**	**18.2032**	**2.1984**	**20.4016**	**9.9670**	**2.0225**	**11.9895**	**0.0000**	**3,810.5415**	**3,810.5415**	**1.1955**	**0.0000**	**3,840.4276**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1479	42.4682	22.0168	0.0393	18.1925	2.1984	20.3908	9.9644	2.0225	11.9869	0.0000	3,810.5415	3,810.5415	1.1955	0.0000	3,840.4276
Maximum	**4.1479**	**42.4682**	**22.0168**	**0.0393**	**18.1925**	**2.1984**	**20.3908**	**9.9644**	**2.0225**	**11.9869**	**0.0000**	**3,810.5415**	**3,810.5415**	**1.1955**	**0.0000**	**3,840.4276**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.06**	**0.00**	**0.05**	**0.03**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	45.8683	1.6030	138.9427	7.3600e-003		0.7732	0.7732		0.7732	0.7732	0.0000	251.0654	251.0654	0.2390	0.0000	257.0409
Energy	0.8914	7.6202	3.2619	0.0486		0.6159	0.6159		0.6159	0.6159		9,724.2945	9,724.2945	0.1864	0.1783	9,782.0811
Mobile	8.5057	48.2648	108.1130	0.4832	59.9473	0.2543	60.2016	16.0050	0.2363	16.2413		49,324.2136	49,324.2136	1.8966		49,371.6273
Total	**55.2654**	**57.4880**	**250.3176**	**0.5392**	**59.9473**	**1.6434**	**61.5907**	**16.0050**	**1.6254**	**17.6304**	**0.0000**	**59,299.5735**	**59,299.5735**	**2.3220**	**0.1783**	**59,410.7493**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	45.8683	1.6030	138.9427	7.3600e-003		0.7732	0.7732		0.7732	0.7732	0.0000	251.0654	251.0654	0.2390	0.0000	257.0409
Energy	0.8763	7.4909	3.2066	0.0478		0.6054	0.6054		0.6054	0.6054		9,559.2738	9,559.2738	0.1832	0.1753	9,616.0798
Mobile	7.8570	44.9688	93.5953	0.4040	49.3772	0.2164	49.5936	13.1829	0.2011	13.3840		41,247.8806	41,247.8806	1.6526		41,289.1958
Total	**54.6016**	**54.0626**	**235.7445**	**0.4592**	**49.3772**	**1.5951**	**50.9722**	**13.1829**	**1.5797**	**14.7627**	**0.0000**	**51,058.2198**	**51,058.2198**	**2.0749**	**0.1753**	**51,162.3165**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.20**	**5.96**	**5.82**	**14.84**	**17.63**	**2.94**	**17.24**	**17.63**	**2.81**	**16.27**	**0.00**	**13.90**	**13.90**	**10.64**	**1.70**	**13.88**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Placeholder (see Construction model for Construction Emissions)	Site Preparation	1/1/2020	9/8/2020	5	180	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 5

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Placeholder (see Construction model for Construction Emissions)	Rubber Tired Dozers	3	8.00	247	0.40
Placeholder (see Construction model for Construction Emissions)	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Placeholder (see Construction model for	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Clean Paved Roads

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0714	0.0509	0.5032	1.2600e-003	0.1369	9.5000e-004	0.1379	0.0363	8.8000e-004	0.0372		125.4399	125.4399	3.6100e-003		125.5301
Total	**0.0714**	**0.0509**	**0.5032**	**1.2600e-003**	**0.1369**	**9.5000e-004**	**0.1379**	**0.0363**	**8.8000e-004**	**0.0372**		**125.4399**	**125.4399**	**3.6100e-003**		**125.5301**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Placeholder (see Construction model for Construction Emissions) - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0714	0.0509	0.5032	1.2600e-003	0.1262	9.5000e-004	0.1272	0.0337	8.8000e-004	0.0346		125.4399	125.4399	3.6100e-003		125.5301
Total	**0.0714**	**0.0509**	**0.5032**	**1.2600e-003**	**0.1262**	**9.5000e-004**	**0.1272**	**0.0337**	**8.8000e-004**	**0.0346**		**125.4399**	**125.4399**	**3.6100e-003**		**125.5301**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Walkability Design

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

Expand Transit Network

Implement Trip Reduction Program

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.8570	44.9688	93.5953	0.4040	49.3772	0.2164	49.5936	13.1829	0.2011	13.3840		41,247.8806	41,247.8806	1.6526		41,289.1958
Unmitigated	8.5057	48.2648	108.1130	0.4832	59.9473	0.2543	60.2016	16.0050	0.2363	16.2413		49,324.2136	49,324.2136	1.8966		49,371.6273

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,225.01	1,225.01	1225.01	3,143,498	2,742,998
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	954.00	954.00	954.00	1,333,029	1,149,969
Retirement Community	129.00	129.00	129.00	331,038	288,862
Retirement Community	2,393.36	2,393.36	2393.36	6,141,628	5,359,150
Single Family Housing	6,768.29	6,768.29	6768.29	17,368,174	15,155,370
Total	11,469.66	11,469.66	11,469.66	28,317,367	24,696,349

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Regional Shopping Center	10.00	5.00	6.50	16.30	64.70	19.00	54	35	11
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Retirement Community	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
City Park	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Other Asphalt Surfaces	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Parking Lot	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Regional Shopping Center	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Retirement Community	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566
Single Family Housing	0.578893	0.033999	0.212840	0.104491	0.010628	0.004325	0.018736	0.026318	0.001852	0.001362	0.005392	0.000598	0.000566

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Percent of Electricity Use Generated with Renewable Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.8763	7.4909	3.2066	0.0478		0.6054	0.6054		0.6054	0.6054		9,559.2738	9,559.2738	0.1832	0.1753	9,616.0798
NaturalGas Unmitigated	0.8914	7.6202	3.2619	0.0486		0.6159	0.6159		0.6159	0.6159		9,724.2945	9,724.2945	0.1864	0.1783	9,782.0811

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	5742.03	0.0619	0.5292	0.2252	3.3800e-003		0.0428	0.0428		0.0428	0.0428		675.5331	675.5331	0.0130	0.0124	679.5475
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	475.178	5.1200e-003	0.0466	0.0391	2.8000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003		55.9033	55.9033	1.0700e-003	1.0200e-003	56.2355
Retirement Community	1259.59	0.0136	0.1161	0.0494	7.4000e-004		9.3900e-003	9.3900e-003		9.3900e-003	9.3900e-003		148.1874	148.1874	2.8400e-003	2.7200e-003	149.0680
Retirement Community	23368.8	0.2520	2.1536	0.9164	0.0138		0.1741	0.1741		0.1741	0.1741		2,749.2660	2,749.2660	0.0527	0.0504	2,765.6035
Single Family Housing	51810.9	0.5588	4.7747	2.0318	0.0305		0.3860	0.3860		0.3860	0.3860		6,095.4047	6,095.4047	0.1168	0.1118	6,131.6266
Total		**0.8914**	**7.6202**	**3.2619**	**0.0486**		**0.6159**	**0.6159**		**0.6159**	**0.6159**		**9,724.2945**	**9,724.2945**	**0.1864**	**0.1783**	**9,782.0811**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	5.65885	0.0610	0.5215	0.2219	3.3300e-003		0.0422	0.0422		0.0422	0.0422		665.7466	665.7466	0.0128	0.0122	669.7028
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.467305	5.0400e-003	0.0458	0.0385	2.7000e-004		3.4800e-003	3.4800e-003		3.4800e-003	3.4800e-003		54.9771	54.9771	1.0500e-003	1.0100e-003	55.3038
Retirement Community	1.24	0.0134	0.1143	0.0486	7.3000e-004		9.2400e-003	9.2400e-003		9.2400e-003	9.2400e-003		145.8819	145.8819	2.8000e-003	2.6700e-003	146.7488
Retirement Community	23.0052	0.2481	2.1201	0.9022	0.0135		0.1714	0.1714		0.1714	0.1714		2,706.4923	2,706.4923	0.0519	0.0496	2,722.5756
Single Family Housing	50.8825	0.5487	4.6892	1.9954	0.0299		0.3791	0.3791		0.3791	0.3791		5,986.1760	5,986.1760	0.1147	0.1098	6,021.7488
Total		**0.8763**	**7.4908**	**3.2066**	**0.0478**		**0.6054**	**0.6054**		**0.6054**	**0.6054**		**9,559.2738**	**9,559.2738**	**0.1832**	**0.1753**	**9,616.0798**

6.0 Area Detail

6.1 Mitigation Measures Area

The Ranch - City of Rancho Cordova (Full Buildout - 2035 - Operational Only) Mitigated - Sacramento County, Winter

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	45.8683	1.6030	138.9427	7.3600e-003		0.7732	0.7732		0.7732	0.7732	0.0000	251.0654	251.0654	0.2390	0.0000	257.0409
Unmitigated	45.8683	1.6030	138.9427	7.3600e-003		0.7732	0.7732		0.7732	0.7732	0.0000	251.0654	251.0654	0.2390	0.0000	257.0409

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.0076					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	35.7060					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.1547	1.6030	138.9427	7.3600e-003		0.7732	0.7732		0.7732	0.7732		251.0654	251.0654	0.2390		257.0409
Total	**45.8683**	**1.6030**	**138.9427**	**7.3600e-003**		**0.7732**	**0.7732**		**0.7732**	**0.7732**	**0.0000**	**251.0654**	**251.0654**	**0.2390**	**0.0000**	**257.0409**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.0076					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	35.7060					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.1547	1.6030	138.9427	7.3600e-003		0.7732	0.7732		0.7732	0.7732		251.0654	251.0654	0.2390		257.0409
Total	**45.8683**	**1.6030**	**138.9427**	**7.3600e-003**		**0.7732**	**0.7732**		**0.7732**	**0.7732**	**0.0000**	**251.0654**	**251.0654**	**0.2390**	**0.0000**	**257.0409**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Reclaimed Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CITY OF RANCHO CORDOVA

RESOLUTION NO. XX-2020

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF RANCHO CORDOVA APPROVING A GENERAL PLAN AMENDMENT AND LARGE LOT AND SMALL LOT TENTATIVE MAP WITH ATTACHED CONDITIONS OF APPROVAL FOR THE RANCH PROJECT ASSESSOR PARCEL NUMBER APN 067-0040-008 PROJECT NO. DD9725

WHEREAS, the property within The Ranch Special Planning Area is owned by K. Hovnanian at Jaeger Ranch, LLC is referred to as "Landowners"; and

WHEREAS, The Ranch, due to its central location in the eastern part of the City, is envisioned as an integral part of the City; and

WHEREAS, The Ranch project is envisioned to be a planned community that illustrates the City's "building blocks" as described in the General Plan.

WHEREAS, The Ranch project is a plan for a mixed-use development with a broad range of residential uses, commercial, parks/open space, natural resources, and associated infrastructure and roads on an approximately 530-acre site in the City. The Project includes 1,690 residential units at various densities; of that number of residential uses, 743 residential units are active adult, 5.73 acres of commercial, 14.36 acres of community and neighborhood parks, 8.99 acres of private parks; stormwater detention basins; open-space areas, trails, major roads with landscaping; and a 200 acre wetland natural resource/preserve; and

WHEREAS, the attached large lot and small lot tentative maps meets the requirements of the Subdivision Map Act and the Rancho Cordova Municipal Code as set forth in findings below, and the City Council has conducted a properly noticed public hearing for the approval of the Large Lot and Small Lot Tentative Map attached hereto in accordance with the Subdivision Map Act requirements.

WHEREAS, on January 6, 2020, the City Council held a properly noticed public hearing at which it received a report from City Staff regarding The Ranch Special Planning Area and oral and written testimony from the public, and deliberated on the item; and

WHEREAS, the public hearing was noticed in accordance with the requirements set forth in Government Code section 65090 and 65091

NOW THEREFORE, the City Council of the City of Rancho Cordova hereby resolves as follows:

Section 1. RECITALS

The foregoing recitals are true and correct and made a part of this Resolution.

Section 2. General Plan Consistency- According to Section 23.155.060 of the Zoning Code, in order to amend the General Plan to modify the Land Use Map (Exhibit A) the following findings shall be made:

A. Finding: The proposed amendment is internally consistent with the General Plan.
Evidence: The proposed project area with the proposed land use designations as shown in Exhibit A: Proposed General Land Use Map are consistent with the General Plan "Suncreek Preserve Planning Area" conceptual plan. In addition, the project is consistent with several of the General Plan goals as stated above and in The Ranch Special Planning Area handbook.

B. Finding: The proposed amendment would not be detrimental to the public interest, health, safety, convenience, or welfare of the City.
Evidence: The proposed Ranch SPA will not be detrimental to the public interest, health, safety, convenience, or welfare of the City as the project is expected to result in an improved jobs/housing ratio than what currently exists and includes the designation of public uses including parks and other public or quasi-public uses. The Ranch SPA integrates sustainable development practices at each level of community planning and implementation. It includes retail opportunities for the planned community and the surrounding areas of the City as well as a variety of residential densities resulting in a range of housing opportunities for a range of income levels.

C. Finding: In the case of amendments to the General Plan map, the site is physically suitable (including absence of physical constraints, access, compatibility with adjoining land uses, and provisions of utilities) for the requested/anticipated land use developments.
D. Evidence: The site is physically suitable for the proposed density of development. The proposed plan is consistent with the General Plan conceptual plan "Suncreek Preserve Planning Area" as the land uses designations show in the TRSPA handbook Figure 3: Proposed General Plan Land Use Map. Natural Resource areas have been avoided to the extent possible. The proposed circulation plan enhances and expands roadway systems in the area with connections to existing roads. The project land use uses are consistent with the surrounding areas that includes residential and natural resources designations. The project infrastructure that includes utilities will connect into existing infrastructure.

E. Finding: The proposed project has been reviewed in compliance with the provisions of CEQA.
Evidence: The Ranch Environmental Impact Report identifies all known and protected resources within the project area. Required protection and mitigation measures have been incorporated into The Ranch SPA and the Mitigation Monitoring Report Plan. The Ranch project is consistent with the General Pan Natural Resources Element Goals NR-2, and NR-3 regarding protection and preservation of wildlife, plant habitats, wetlands and creek corridors.

Approval
The City Council approves the attached General Plan Map for The Ranch Project attached as (Exhibit A).

Section 3. LARGE LOT AND SMALL LOT TENTATIVE MAP WITH ATTACHED CONDITIONS OF APPROVAL FINDINGS AND APPROVAL

In accordance with Government Code section 66473.5, the proposed Large Lot Tentative Map with attached Conditions of Approval ("Tentative Map") attached hereto is consistent with the applicable General and Specific Plan objectives, policies, land uses and programs. Section 66474 of the Government Code requires a City to deny approval of a tentative map if any of the findings are found to be true. In the case of the proposed map, none of the required findings were found to be true. The following evidence supports the map request:

1. *Finding: That the proposed map is not consistent with applicable general and specific plans as specified in Section 65451*.

   Evidence: The proposed project is consistent with the proposed General Plan Amendment for The Ranch Special Planning Area (TRSPA) land use designation. All lots are consistent with the proposed TRSPA development standards. The Tentative Maps will subdivide the 530 acre Ranch area into 37 large lots and creates boundaries for the multiple land uses, zoning districts, and major roadways within the project. The small lot map will further divide the lots as shown in Exhibit C. All such identified uses within the Tentative Map are consistent with the allowed land uses set forth in the General Plan and Special Planning Area land use, which call for the project area to include a mix of residential, commercial, parks and open space, and natural resources uses. There are currently no buildings on site and all lots are consistent with the development standards of the General Plan and Special Planning A for this parcel

2. *Finding: That the design or improvement of the proposed subdivision is not consistent with applicable general and specific plans.*

   Evidence: The proposed Tentative Subdivision Map is consistent with the proposed General Plan Amendment designation of Low, Medium, High Density Residential, Commercial, Parks/Open Space, and Natural Resources and the proposed TRSPA handbook densities and zoning districts as follows;
   - The proposed subdivision map is consistent with the proposed TRSPA Land Use Plan.
   - The overall proposed subdivision densities (Low, Medium, and High) are consistent with proposed General Plan Amendment designations
   - The proposed subdivision lots are consistent with the proposed Special Planning Area development standards.

3. *Finding: That the site is not physically suitable for the type of development.*

   Evidence: The site is physically suitable to subdivide. The existing parcel will be split into 1,437 single-family lots, 2 commercial lots, 1 public multi-family lot, 1 private multi-family lot, 3 public parks, 3 private parks, 11 protected area (natural resources) lots that include drainage basin and landscape, several private landscape lots and private drives. There are no buildings currently onsite.

4. *Finding: That the site is not physically suitable for the proposed density of development.*

   Evidence: The site is physically suitable for the proposed density of development. The proposed TRSPA includes low (2.1-6.0 dwelling units per acre (du/ac), medium (6.1-18.0 du/ac), and High (27.0-50.0 du/ac) densities. The proposed

subdivision map is consistent with the proposed General Plan designations. Improvements are provided as shown on the Tentative Subdivision Map (Exhibit B and Exhibit C), and subject to the attached Conditions of Approval (Exhibit D).

5. *Finding: That the design of the subdivision or the proposed improvements are likely to cause substantial environmental damage or substantially and avoidably injure fish or wildlife or their habitat.*

   Evidence: An Environmental Impact Report was prepared for The Ranch project DD9725 where the construction of single-family lots, multi-family lots, commercial, parks/open space, and the protection of natural resources were addressed in accordance with the requirements of the California Environmental Quality Act (CEQA). The Draft EIR contains a description of the Project, description of the environmental setting, identification of project impacts, and mitigation measures for impacts found to be significant, as well as an analysis of project alternatives, identification of significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. The Draft EIR identifies issues determined to have no impact or a less-than-significant impact and provides analysis of potentially significant and significant impacts. The proposed project is consistent with the project analyzed in the Environmental Impact Report.

6. *Finding: That the design of the subdivision or the type of improvements is not likely to cause serious public health problems*.

   Evidence: The proposed subdivision includes a 200 plus acre natural preserve and an existing 275-foot wide utility easement. Proposed development has been planned outside of the protected natural preserve and the existing easement. The proposed Tentative Subdivision Map includes necessary improvements to serve the project. The proposed improvements are consistent with the proposed TRSPA. No public health problems will result from approval of the tentative subdivision map.

7. *Finding: That the design of the subdivision or the type of improvements will conflict with easements, acquired by the public at large, for access through or use of property within the proposed subdivision. In this connection, the legislative body may approve a map if it finds that alternate easements, for access or for use, will be provided, and that these will be substantially equivalent to ones previously acquired by the public.*

   Evidence: The proposed improvements on the tentative subdivision map and included within the project are consistent with the proposed TRSPA and City of Rancho Cordova Ordinances and Standards and do not conflict with public easements and related necessary access through the project. The streets proposed include public and private streets.

B. Approval.

The City Council approves the attached General Plan Amendment Land Use Designations as shown in (Exhibit A). Large Lot (Exhibit B) and Small Lot (Exhibit C) Tentative Map for The Ranch Project with attached conditions of approval (Exhibit D) as attached.

Section 7. EFFECTIVE DATE.

This Resolution shall become effective upon the effective date of City Council Ordinance adopting The Ranch Special Planning Area.

PASSED AND ADOPTED by the City Council of the City of Rancho Cordova this 6th day of January 2020, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

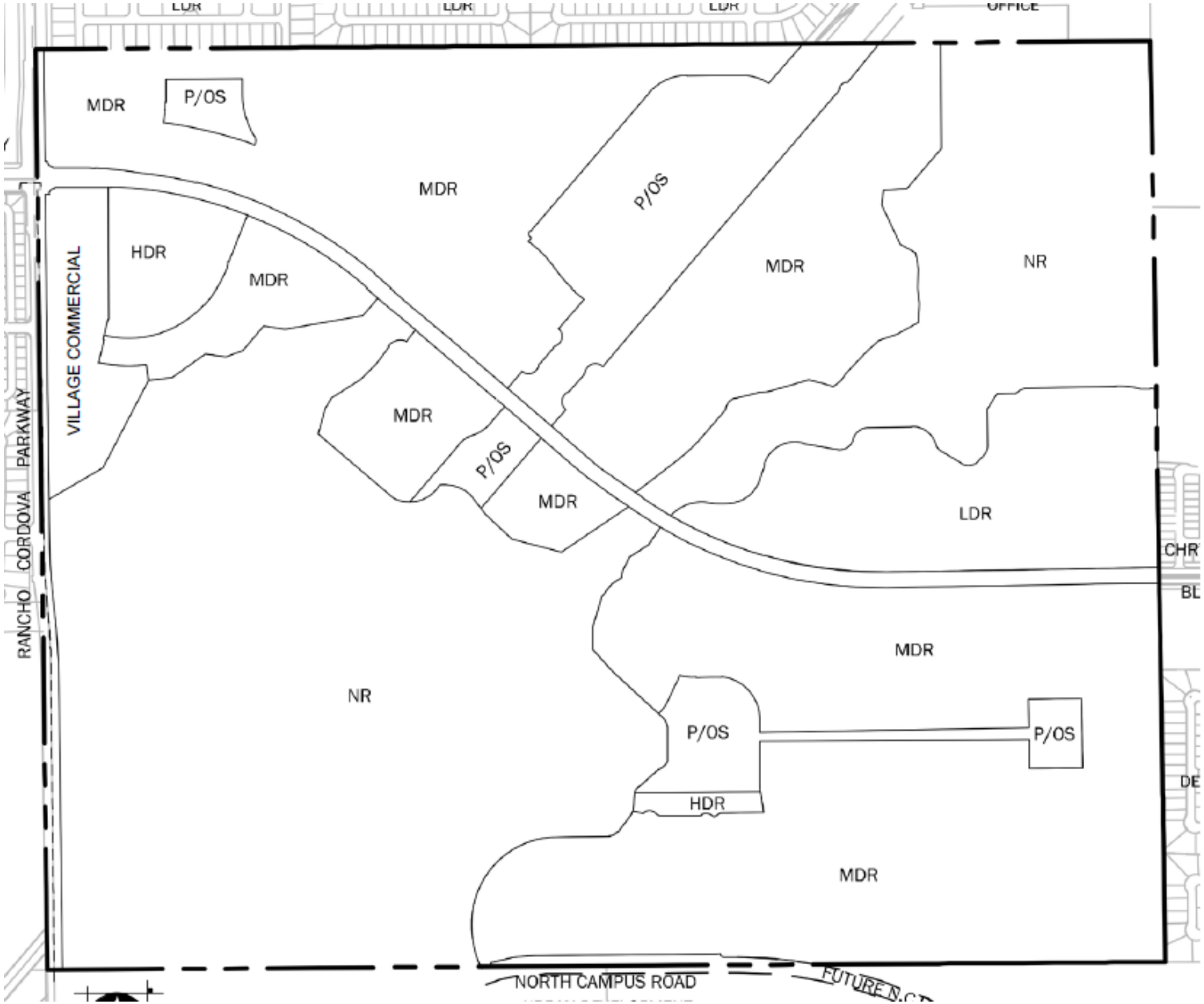
_____
David M. Sander, Mayor

ATTEST:

_____
Stacy Leitner, CMC
City Clerk

The Ranch General Plan Land Use Map

ATTACHMENT 7
Exhibit A to the Resolution



LARGE LOT TENTATIVE SUBDIVISION MAP

THE RANCH

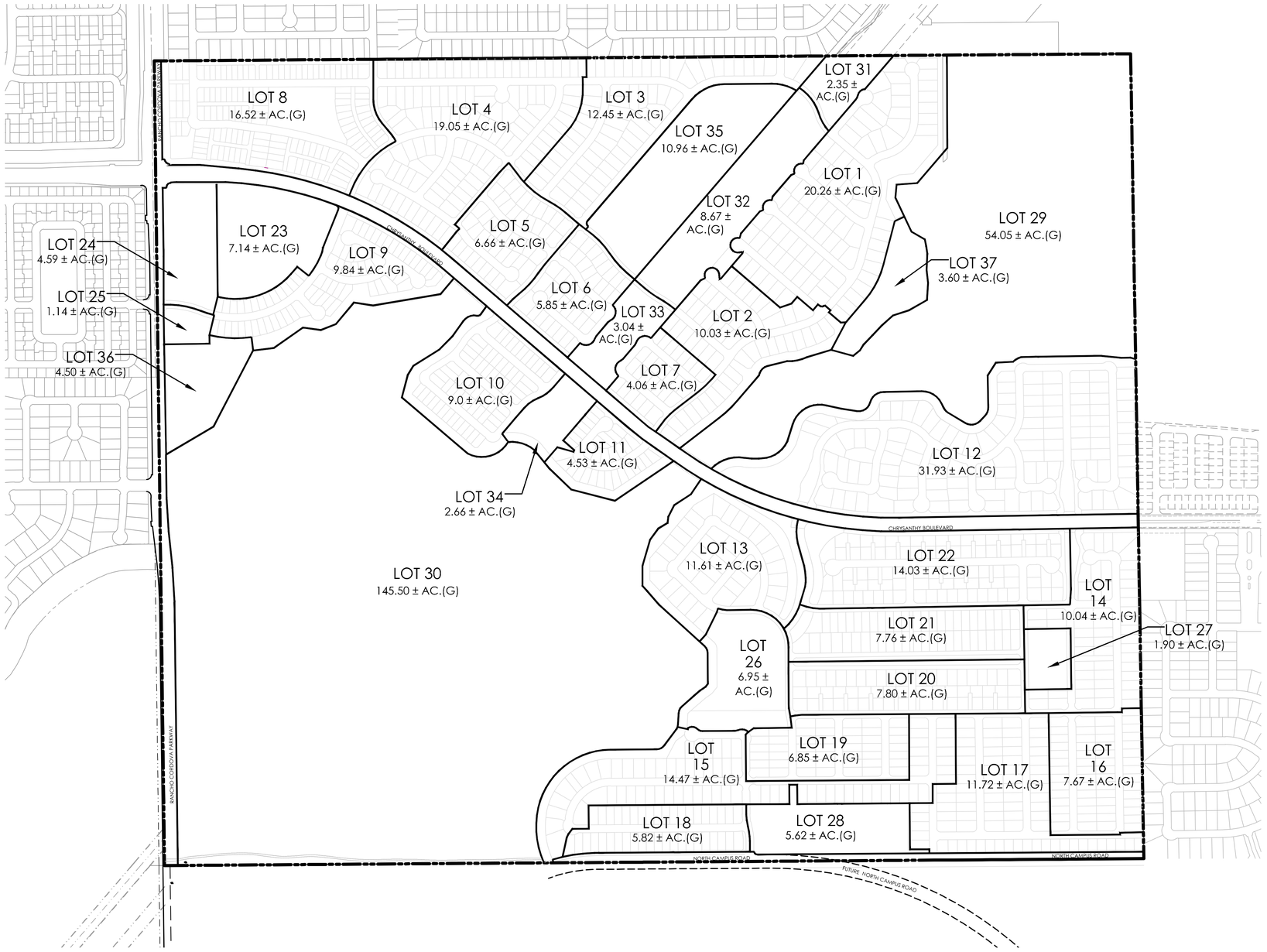
CITY OF RANCHO CORDOVA, CALIFORNIA

JUNE 2018

(REVISED: JULY, 2018)

(REVISED: MAY, 2019)

(REVISED: DECEMBER, 2019)



K Hovnanian

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS
3301 C St, Bldg. 100-B Tel 916.341.7760
Sacramento, CA 95816 Fax 916.341.7767

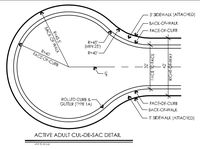
J:\1000s\1227_TheRanch\TheRanch-CoA\Planning\Exhibits\Tentative Map - PD\LLTSM-TheRanch.dwg 12/4/2019 3:28 PM Shaunya Watt

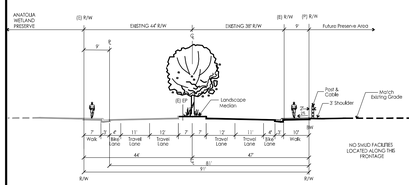
SMALL LOT TENTATIVE SUBDIVISION MAP

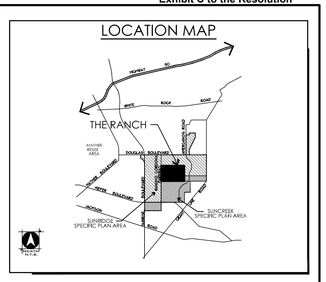
THE RANCH

CITY OF RANCHO CORDOVA, CALIFORNIA

JUNE 2018
(REVISED: JULY 2018)
(REVISED: MAY 2019)
(REVISED: DECEMBER 2019)







PROJECT NOTES

OWNER/APPLICANT
K. HOVNANIAN HOMES, NORTHERN INC.
3721 DOUGLAS BOULEVARD, SUITE 150
ROSEVILLE, CA 95661
CONTACT: OLGA SCIORELLI
PHONE: (916) 945-5362

PLANNER
WOOD RODGERS INC.
3301 "C" STREET BLDG. 100-B
SACRAMENTO, CA. 95816
CONTACT: PAUL MEUSER
PHONE: (916) 341-7760

ENGINEER/SURVEYOR
CTA ENGINEERING AND SURVEYING
3233 MONIER CIRCLE
RANCHO CORDOVA, CA 95742
CONTACT: TOM CASSERA
PHONE: (916) 638-0919

ASSESSORS PARCEL NUMBERS
067-0040-008

AREA
530.1± ACRES GROSS

PUBLIC SERVICES & FACILITY PROVIDERS

IMPROVEMENTS:	CITY OF RANCHO CORDOVA
WATER:	SACRAMENTO COUNTY WATER
SEWER:	SACRAMENTO AREA SEWER DISTRICT
DRAINAGE:	CITY OF RANCHO CORDOVA
ELECTRICITY:	S.M.U.D.
GAS:	PACIFIC GAS & ELECTRIC
TELEPHONE:	AT&T
SCHOOL DISTRICT:	ELK GROVE UNIFIED SCHOOL DISTRICT
FIRE DISTRICT:	SACRAMENTO METRO FIRE DISTRICT
PARK DISTRICT:	CORDOVA RECREATION & PARK DISTRICT

NUMBER OF LOTS/PARCELS

1,434	SINGLE FAMILY LOTS
2	MULTI-FAMILY LOT
2	GENERAL COMMERCIAL LOTS
1	RECREATION CENTER LOT
4	PARK LOTS
2	PROTECTED AREA LOTS
9	PROTECTED AREA / LANDSCAPE LOTS
1	WATER QUALITY/ DETENTION BASIN LOTS
5	OPEN SPACE LOTS
18	PUBLIC LANDSCAPE LOTS
15	PRIVATE LANDSCAPE LOTS
22	PRIVATE DRIVE LOTS
2	PRIVATE STREET LOTS

EXISTING USE
VACANT

EXISTING GENERAL PLAN
URBAN DEVELOPMENT AREA

PROPOSED GENERAL PLAN
LDR, MDR, RMU, CMU, P/QP, P/OS, NR

EXISTING ZONING
AG-80

PROPOSED ZONING
SPECIAL PLANNING AREA

NOTES:
1. SUBDIVIDER(S) RESERVES THE RIGHT TO FILE MULTIPLE MAPS PURSUANT TO SECTION 66456.1 OF THE SUBDIVISION MAP ACT.
2. THIS IS AN APPLICATION FOR A DEVELOPMENT PERMIT.
3. PARCEL (LARGE LOT) NUMBERING IS FOR IDENTIFICATION PURPOSES ONLY AND DOES NOT INDICATE PHASING ORDER OF DEVELOPMENT. ULTIMATE DEVELOPMENT PHASING SHALL BE ORDERLY AND WILL BE DETERMINED AT FINAL MAP AND/OR IMPROVEMENT PLAN STAGE.
4. THIS APPLICATION ALSO SEEKS A GENERAL PLAN AMENDMENT, REZONE, AND SPECIAL DEVELOPMENT PERMIT.
5. ALL EXISTING STRUCTURES TO BE REMOVED AND ALL EXISTING WELLS TO BE ABANDONED, ADJUSTED(BY OTHERS) AND/OR RELOCATED.
6. THE AERIAL TOPOGRAPHY SHOWN HEREON WAS FLOWN IN NOVEMBER 2003.
7. THIS EXHIBIT IS FOR TENTATIVE MAP PURPOSES ONLY. ALL SITE AREAS TO BE VERIFIED PRIOR TO FINAL MAP.
8. PARK FEES FOR ALL RMU LOTS WILL BE DEFERRED UNTIL ACTUAL SITE DEVELOPMENT PERMIT.
9. NON-STANDARD ELBOW, NO ON-STREET PARKING ALLOWED ON KNUCKLE.
10. A 12.5' P.U.E WILL BE PROVIDED ADJACENT TO RIGHT-OF-WAY; A 10' P.U.E. WILL BE PROVIDED ADJACENT TO RIGHT-OF-WAY TO VILLAGES DESIGNATED AS MDR

LAND USE SUMMARY

PARCEL/ LOT NUMBER	GENERAL PLAN DESIGNATION	LAND USE (LOT SIZE)	GROSS ACRES	NET ACRES	DWELLING UNITS	GROSS DENSITY
TRADITIONAL SINGLE-FAMILY RESIDENTIAL						
VILLAGE 1		TRADITIONAL S.F. RESIDENTIAL (60X105)	19.05	13.81	86	4.5
VILLAGE 2		TRADITIONAL S.F. RESIDENTIAL (50X105)	10.03	6.57	49	4.9
VILLAGE 3		TRADITIONAL S.F. RESIDENTIAL (50X105)	12.45	9.37	65	5.2
VILLAGE 4		TRADITIONAL S.F. RESIDENTIAL (45X105)	19.05	14.73	116	6.1
VILLAGE 5		TRADITIONAL S.F. RESIDENTIAL (45X85)	6.66	4.74	45	6.8
VILLAGE 6		TRADITIONAL S.F. RESIDENTIAL (45X85)	5.85	4.06	40	6.8
VILLAGE 7		TRADITIONAL S.F. RESIDENTIAL (45X85)	4.06	2.71	28	6.9
VILLAGE 8		TRADITIONAL S.F. RESIDENTIAL (30X78.5)	14.33	8.53	130	9.1
VILLAGE 9		TRADITIONAL S.F. RESIDENTIAL (35X78)	9.84	5.54	71	7.2
VILLAGE 10		TRADITIONAL S.F. RESIDENTIAL (35X78)	9.00	4.82	69	7.7
VILLAGE 11		TRADITIONAL S.F. RESIDENTIAL (35X78)	4.53	3.34	33	7.3
SUB-TOTAL			**114.85**	**78.22**	**732**	
ACTIVE ADULT SINGLE-FAMILY RESIDENTIAL						
VILLAGE 12		ACTIVE ADULT S.F. RESIDENTIAL (60X105)	31.93	19.11	117	3.7
VILLAGE 13		ACTIVE ADULT S.F. RESIDENTIAL (60X105)	11.61	6.57	39	3.4
VILLAGE 14		ACTIVE ADULT S.F. RESIDENTIAL (50X105)	10.04	7.13	55	5.5
VILLAGE 15		ACTIVE ADULT S.F. RESIDENTIAL (50X105)	14.47	10.24	75	5.2
VILLAGE 16		ACTIVE ADULT S.F. RESIDENTIAL (43X105)	7.67	6.08	56	7.3
VILLAGE 17		ACTIVE ADULT S.F. RESIDENTIAL (50X105)	11.72	9.09	80	6.8
VILLAGE 18		ACTIVE ADULT S.F. RESIDENTIAL (43X105)	5.82	4.44	41	7.0
VILLAGE 19		ACTIVE ADULT S.F. RESIDENTIAL (43X105)	6.85	4.97	47	6.9
VILLAGE 20		ACTIVE ADULT S.F. RESIDENTIAL (57X67)	7.80	5.77	55	7.1
VILLAGE 21		ACTIVE ADULT S.F. RESIDENTIAL (VARIES)	7.76	6.25	50	6.4
VILLAGE 22		ACTIVE ADULT S.F. RESIDENTIAL (57X67)	14.03	9.16	90	6.4
SUB-TOTAL			**129.70**	**88.81**	**705**	
VILLAGE 23	HDR	MULTI-FAMILY RESIDENTIAL	7.14	7.14	215	30.0
SUB-TOTAL			**7.14**	**7.14**	**215**	**30.0**
VILLAGE 24	C	COMMERCIAL	4.59	4.45	-	-
VILLAGE 25	C	COMMERCIAL	1.14	1.00	-	-
SUB-TOTAL			**5.73**	**5.45**	-	-
LOT A	P/OS	PARK (PRIVATE)	5.69	4.62	-	-
LOT X	MDR	MULTI-FAMILY RESIDENTIAL	1.26	1.26	38	30.0
LOT B	P/OS	PARK (PRIVATE)	1.90	1.58	-	-
LOT C	P/OS	PARK (PRIVATE)	1.40	1.40	-	-
LOT D	P/OS	COMMUNITY PARK (PUBLIC)	10.96	10.78	-	-
LOT E	NR	PROTECTED AREA (PUBLIC)	145.43	145.43	-	-
LOT F	NR	PROTECTED AREA (PUBLIC)	54.05	54.05	-	-
LOT G-I	NR	PROTECTED AREA/DRAINAGE BASIN	10.76	10.45	-	-
LOT J-O	NR	PROTECTED AREA/ LANDSCAPE LOT	-	14.27	-	-
LOT P	P/OS	WATER QUALITY/DETENTION	5.62	5.48	-	-
LOT Q	P/OS	OPEN SPACE (PUBLIC)	2.35	2.20		
LOT R	P/OS	OPEN SPACE (PUBLIC)	8.67	8.12		
LOT S	P/OS	OPEN SPACE (PUBLIC)	3.04	2.91		
LOT T	P/OS	NEIGHBORHOOD PARK (PUBLIC)	2.19	2.19		
LOT U	P/OS	PASSIVE PARK (PUBLIC)	1.21	1.21		
LOT V-MM	LDR/MDR	PUBLIC LANDSCAPE LOT	-	5.70		
LOT NN-BBB	LDR/MDR	PRIVATE LANDSCAPE LOT	-	5.56	-	-
LOT CCC	-	EXTRACTION WELL SITE	-	0.27		
LOT 1-22	MDR	PRIVATE DRIVE	-	1.10		
LOT 23 & 24	LDR/MDR & P/OS	PRIVATE RIGHT-OF-WAY	-	32.30		
MINOR RIGHT-OF-WAY	LDR/MDR & P/OS	PUBLIC RIGHT-OF-WAY	-	21.50	-	-
MAJOR RIGHT-OF-WAY	-	-	18.10	18.10	-	-
SUB-TOTAL			**272.63**	**350.48**	-	-
TOTAL			**530.1**	**530.1**	**1,690**	-

NOTE:
[1] VILLAGE GROSS ACREAGE EXCLUDES RANCHO CORDOVA PARKWAY, CHRYSANTHY BOULEVARD & NORTH CAMPUS ROAD.
[2] VILLAGE NET ACREAGE EXCLUDES PROTECTED AREA/ LANDSCAPE LOTS, PRIVATE & PUBLIC LANDSCAPE LOTS, PRIVATE DRIVES AND PRIVATE & PUBLIC RIGHT-OF-WAYS.

K Hovnanian

WOOD RODGERS
ENGINEERING • MAPPING • PLANNING • SURVEYING
3301 C St, Bldg. 100-B Tel 916.341.7760
Sacramento, CA 95816 Fax 916.341.7767

THE RANCH SPECIAL PLANNING AREA CONDITIONS OF APPROVAL

	Conditions of Approval	Category	Timing / Implementation	Enforcement/ Monitoring
1.	The approved entitlement is for a Large Lot and Small Lot Tentative Subdivision Map ("LLTSM") ("SLTSM") for The Ranch Special Planning Area property (APN 0067-0040-008 **Attachment 7 and 8**, as described in the City Council staff report dated January 6, 2020 and subject to the conditions of approval herein, for project number DD9725 ("Project"). These Master Conditions of Approval" are applicable to this entitlement for a Large Lot and Small Lot Tentative Map. Additionally, new Conditions may be added as applicable to future entitlements.	Project Description	On-Going	Planning
2.	Developer shall indemnify, defend with counsel selected by City and hold harmless City, and its elected and appointed councils, boards, commissions, officers, officials, agents, employees, and representatives from any and all claims, costs (including legal fees and costs incurred by City or awarded to plaintiffs) and liability incurred by the City and/or awarded to any plaintiff in any legal or equitable action or other proceeding instituted by any third party challenging the validity of any provisions of this permit.	General	On-Going	Planning
3.	The LLTSM and SLTSM approval is valid for three years from the date of City approval, unless an extension of time is subsequently approved per Government Code Section 66452.6(e), or as otherwise stated in the Project development agreement.	Time/ expiration	On-Going	Planning
4.	Applicant/Developer shall not carry a negative account balance with the City for the processing of the project. If a negative account balance occurs, it will be the developer's responsibility to pay the balance due, in order to avoid delays in the processing of future permits or recordation of maps. Please e-mail the Finance Department at billings@cityofranchocordova.org for the status of your account with the City.	General	On-Going	Planning
5.	In accordance with Government Code Section 65864 through 65869.5 and Zoning Code 23.158, all active Development Agreements must maintain a minimum deposit balance of $5,000 and report to the Planning Department annually. This report should include the status of the project, payment of fees, and any change in ownership.	Funding	On-Going	Planning
6.	The Applicant shall submit payment as needed for Plan Review/ Plan Check Fees required by the Cordova Recreation and Parks District	Park Application	On-Going	CRPD

	Conditions of Approval	Category	Timing / Implementation	Enforcement/ Monitoring
	(CRPD).			
7.	Noise sources associated with construction, repair, remodeling, demolition, paving and/or grading of any real property must adhere to the development standards outlined within the City's Noise Element, RCMC 6.68 and RCMC 16.18.1407(F).	Noise	On-Going	Code Enforcement/Police
8.	Applicant shall be responsible for all damage to City streets associated with construction of the project and shall repair any damage as soon as possible.	Infrastructure	On-Going	Public Works
9.	The project shall comply with The Ranch Mitigation Monitoring Plan.	MMRP	On-Going	Planning
10.	In the event the property to the east known as "Grantline 220" provides public access through the pedestrian gates. The Ranch shall also allow public access through the pedestrian gates.	Pedestrian Gates	On-Going	Planning
Prior to Recordation of the Final Map				
11.	Dedicate a standard 12.5-foot public utility easement, or smaller to the satisfaction of SMUD, for underground facilities and appurtenances adjacent to all public street rights of ways.	Infrastructure	Prior to Recordation of the Small Lot Subdivision Map	Public Works
12.	Dedicate to the City all the right-of-ways as shown on the Tentative Map and install or bond for public street improvements, consistent with the City adopted cross sections to the satisfaction of the City Engineer.	Right of Way Dedication	Prior to Recordation of the Subdivision Map	Public Works
13.	Enter into a subdivision improvement agreement and bond for construction of public improvements per the approved Public Works plans to the satisfaction of the Public Works Department.	Bonds	Prior to Approval of Final Map	Public Works
14.	The final map shall show easements or other mapped provisions for the placement of centralized mail delivery units.	Mail	Prior to Recordation of the Subdivision Map	Public Works
15.	Property Owner/Applicant shall participate in or provide a funding mechanism for maintenance services for the project's stormwater drainage and flood protection system. This may be accomplished through annexation to the City's Stormwater Utility Fee District, or other financial mechanism as may be proposed and provided by the Property Owner for the same purpose of providing a funding mechanism to fund	Funding	The annexation shall occur prior to the recordation of any small lot final map.	Public Works

	Conditions of Approval	Category	Timing / Implementation	Enforcement/ Monitoring
	the operation and maintenance of the Project's stormwater drainage and flood protection system. Costs associated with the annexation shall be borne by the Property Owner/Applicant through payment of the annexation costs in the amount of $7,000 per annexation. Contact Elizabeth Sparkman at (916) 851-8714 with regard to the process to satisfy this condition of approval.			
16.	Property Owner/Applicant shall participate in or provide a funding mechanism for maintenance services for the fair share of existing and all new public improvements associated with the project including, but not limited to, streets, bridges/culverts, traffic signals, traffic signs, striping and legends, ITS operations, street lights and safety lighting, public frontage and median and landscape improvements, and trails. This may be accomplished through annexation to the City's Community Facilities District No. 2014-2 (Street, Lighting and Landscape Maintenance), or other financial mechanism as may be proposed and provided by the Property Owner for the same purpose of providing a financial mechanism to fund the operation and maintenance of the Project's public improvements. Costs associated with the annexation shall be borne by the Property Owner/Applicant through payment of the annexation costs of the CFD annexation in the amount of $5,000 per annexation. Contact Elizabeth Sparkman at (916) 851-8714 with regard to the process to satisfy this condition of approval	Funding	The annexation shall occur prior to the recordation of any small lot final map..	Public Works
17.	Property Owner/Applicant shall participate in the provision of funding to provide transit-related services. This may be accomplished by annexation to the City's Transit Related Services Special Tax Area by voting to approve a special tax for the parcels created for this subdivision approval, or other financial mechanism as may be proposed and provided by the Property Owner for the same purpose of providing a funding mechanism to fund transit-related services. The tax shall be the per parcel annual amount as specified in an approving ordinance (with appropriate annual inflation adjustment) as established at the time of voting by the City Council. The election to provide for the tax shall be completed prior to the recording of the final map. Costs associated with the annexation and election of the annual tax shall be borne by the	Funding	The annexation shall occur prior to the recordation of any small lot final map.	Public Works

	Conditions of Approval	Category	Timing / Implementation	Enforcement/ Monitoring
	Property Owner/Applicant through payment of the annexation costs in the amount of $5,000 per annexation. In addition, the Property Owner shall hold a deed assessment in the form of Conditions, Covenants & Restrictions against the property or other form as shall be approved by the City, which assessment will take effect in the event described in this Condition Approval is reduced or repealed. Contact Elizabeth Sparkman at (916) 851-8714 with regard to the process to satisfy this condition of approval.			
18.	Property Owner/Applicant shall participate in or provide a funding mechanism for maintenance services for the fair share of existing and all new community places and neighborhood greens as required by the City's Open Space Standards. This may be accomplished through annexation to the City's Community Facilities District No. 2018-1 (Maintenance of Community Places and Neighborhood Greens), or other financial mechanism as may be proposed and provided by the Property Owner for the same purpose of providing a financial mechanism to fund the operation and maintenance of the Project's public improvements related to community places and neighborhood greens. Costs associated with the annexation shall be borne by the Property Owner/Applicant through payment of the annexation costs of the CFD annexation in the amount of $7,000 per annexation. Contact Elizabeth Sparkman at (916) 851-8714 with regard to the process to satisfy this condition of approval.	Funding	The annexation shall occur prior to the recordation of any small lot final map. The annual fee commences when a building permit is issued.	Public Works
19.	The Property Owner/Applicant shall support the annexation of the Project into CFD 2013-2 (Police Services) and cover Developer's fair-share costs of the CFD annexation, not to exceed $5,000 for the Participating Developer's Properties. City agrees that the CFD will provide that on lands designated for all residential land use categories, the base year FY 2018/2019 Police Maximum Services Special Tax shall be Five Hundred Forty-four Dollars and Seventy-Six ($544.76) annually per residential dwelling unit, including multi-family units, or Three Hundred Sixty Three Dollars and Seventeen cents ($363.17) annually per Age-Restricted Community dwelling unit. The special tax imposed by the CFD will be payable on a parcel within the Property only after a building permit has been issued by City for the construction of a building on that particular parcel, and there will be no undeveloped	Funding	The annexation shall occur prior to the recordation of any small lot final map. The annual fee commences when a building permit is issued.	Public Works

	Conditions of Approval	Category	Timing / Implementation	Enforcement/ Monitoring
	land tax imposed by the CFD. The CFD shall further provide that on each July 1 commencing July 1, 2019, the base year Police Special Tax shall be escalated by the increase, if any, in the City CPI Index. However, in no event shall the tax per parcel for any fiscal year be less than the amount established for the prior fiscal year. The CFD shall specify that the Police Special Tax shall commence being payable annually following the issuance of a building permit for each parcel subject to the Police Special Tax.			
20.	Record a maintenance agreement involving all the parcels of the subject map assuring timely maintenance of the private streets and associated utilities.	Maintenance Agreement	Prior to recordation of the Final Map	Public Works
21.	The maps shall include a disclosure statement regarding the Kiefer Landfill location.	Disclosure Statement	Prior to recordation of the Final Map	DWMR
22.	Prior to recordation of a final map or certificate of compliance, dedicate land or pay in lieu fees, or both, for park purposes, as required by and in accordance with the procedures and standards set forth in Chapter 22.40, Title 22 of the City of Rancho Cordova Zoning Code	Fees	Prior to approval of any final map.	Public Works
23.	Grant irrevocable offer of Dedication (IOD) as indicated on the approved tentative map exhibit or to the satisfaction of the City Engineer. The City will accept roads when they are fully completed and there is demonstrated public benefit to the satisfaction of the City.	IOD	Prior to recordation of the Final lot map for that phase.	Public Works
24.	The District shall provide and the developer shall deliver a certificate from the Cordova Recreation and Parks District stating that all fees as required by the District have been paid and a Park Development Agreement has been executed	Parks	Prior to recordation of the first phase of the Final Map	Planning/CRPD
25.	The developer shall enter into a Park Development Agreement (Park DA) with the Cordova Recreation and Park District (the District). All costs to prepare the Park DA shall be borne by the Developer. The Park DA shall include, but not be limited to, all of the following; A. The developer's obligation to dedicate land or the payment of in lieu fees or both for park purposes; B. The developer's obligation to construct all necessary street frontage improvements abutting the dedicated park site(s) including, but not limited to, vertical curb, gutter, sidewalk,	Parks	Prior to recordation of the first phase of the Final Map	Planning/CRPD

	Conditions of Approval	Category	Timing / Implementation	Enforcement/ Monitoring
	gutter, street paving, utilities (water, sewer, electrical, storm drain, phone, gas) and street lights; C. All property to be transferred to the District shall be free and clear of any past or future taxes or assessments, any liens or encumbrances. Any structures, walls, fences, wells or storage tanks must be removed in accordance with all applicable laws and regulations prior to acceptance of any grant deeds or easements; D. The design and improvement of all parks within the project. All plans and specifications shall be prepared by a licensed landscape architect with all subconsultants found to be mutually acceptable to the District and the developer. E. The timing of construction of all parks; F. The credits and reimbursement to which the landowner/applicant is entitled in connection with the construction of such park improvements. G. A funding mechanism for the on-going maintenance of park landscaping and associated facilities. All costs of forming the maintenance mechanism or annexation into an existing maintenance mechanism shall be borne by the developer; H. A landscape architect of record shall be retained by the developer, at the developer's expense, throughout the construction process to review the construction as it occurs and attend construction meetings on a weekly basis; I. The landscape architect of record shall be required to authorize all changes to the approved improvement plans in coordination with the District. J. The landscape architect of record and all appropriate subconsultants shall provide as-constructed plans and certify that the project has been constructed per the approved plans, as amended.			
26.	All real property to be transferred to the Cordova Recreation and Parks District for park purposes, shall be appropriately zoned for parks.	Parks	Prior to recordation of the first phase of the	Planning/CRPD

	Conditions of Approval	Category	Timing / Implementation	Enforcement/ Monitoring
			Final Map	
27.	Dedicate land through an irrevocable deed of dedication or pay in-lieu fees or both for park purposes, as required and in accordance with the Development Agreement between the City and the Developer and in the Park Development Agreement between the Park District and the Developer	Parks	Prior to recordation of the first phase of Final Map	Planning/CRPD
28.	The developer shall record a Covenant for Active Park Uses notifying all future property owners that a future public park(s) is located within the proposed subdivision, and that the public park may include facilities (basketball courts, a baseball field, softball fields, soccer fields, and playground equipment) that may generate vehicular and pedestrian traffic and noise impacts during various times, including but not limited to evening and nighttime hours and that the public park may include nighttime sports lighting that may generate lighting impacts during evening and nighttime hours.	Parks	Prior to approval of each phase of the final map	Public Works/CRPD
29.	Provide Fire Access Agreement between all parcels connected to and served by fire access. Fire Access Agreement shall be recorded with the Public Recorders Office having jurisdiction	Fire Access Agreement	Prior to recordation of the Final lot map for that phase.	Fire
Prior to Submittal or Approval of Improvement Plans				
30.	Prior to the SUBMITTAL OF IMPROVEMENT PLANS: Preliminary analysis shows the sanitary sewer facilities available to serve this project are capacity constrained. Before the submittal of the improvement plans to plan check, SASD requires an approved level 3 sewer study. The study needs to address all sanitary sewer issues related to the proposed project. The study must demonstrate there is capacity in the existing system or propose construction of new facilities to mitigate the proposed project's impact on the existing system. SASD's "Minimum Sewer Study Requirements" and Design Standards apply	Sewer	Prior to Submittal of Improvement Plans	SASD
31.	Prior to the APPROVAL OF IMPROVEMENT PLANS: To obtain sewer service, construction of SASD sewer infrastructure will be required. Any construction and/or modification to the public sewer system shall be required to the satisfaction of SASD. SASD Design Standards apply to any sewer construction and/or modification	Sewer Infrastructure	Prior to Improvement Plan Approval	SASD

	Conditions of Approval	Category	Timing / Implementation	Enforcement/ Monitoring
32.	Prior to the APPROVAL OF IMPROVEMENT PLANS: SASD requires each building on each lot with a sewage source to have a separate connection to the SASD's sewer system. If there is more than one building in any single parcel and the parcel is not proposed for split, then each building on that parcel shall have a separate connection to a private onsite sewer line or a separate connection to the SASD public sewer line	Sewer Infrastructure	Prior to Improvement Plan Approval	Public Works
33.	Prior to the APPROVAL OF IMPROVEMENT PLANS: Sewer easements may be required to service this development. All public sewer easements will be dedicated to SASD in a form approved by the District Engineer. All public sewer easements will be at least 20 feet in width and requires continuous access for installation and maintenance. SASD will only provide maintenance in public right-of-ways and SASD dedicated sewer easements	Sewer Infrastructure	Prior to Improvement Plan Approval	Public Works
34.	SMUD occupies a transmission line easement with transmission and subtransmission facilities within boundaries of the proposed development. The applicant shall be responsible for maintaining all CalOSHA and State of California Public Utilities Commission General Order No. 95 safety clearances during construction and upon building completion. If the required clearances cannot be maintained, the Applicant shall be responsible for the cost of relocation.	Utilities	Prior to Improvement Plan Approval	SMUD
35.	The project shall meet all applicable SMUD requirements: • Sidewalks will need to attach or meander around SMUD equipment where conditions won't allow for SMUD underground equipment and appurtenances to be within 15 feet from the drivable surface or when equipment is larger than available space. The PUE's shall be free and clear of any permanent structures such as overhangs, porches, patios, etc. • All structural setbacks shall be a minimum of 14-feet from the edge of the roadway right-of-way. Structural setbacks less than 14 feet shall require the applicant to conduct a pre-engineering meeting with all utilities to ensure proper clearances are maintained. • In the event the applicant requires the relocation or removal of existing SMUD facilities on or adjacent to the subject property,	Utilities	Prior to Improvement Plan Approval and On-Going	SMUD

Conditions of Approval	Category	Timing / Implementation	Enforcement/ Monitoring
the applicant shall coordinate with SMUD. The applicant shall be responsible for the cost of relocation or removal. • SMUD reserves the right to use any portion of its easements on or adjacent to the subject property that it reasonably needs and shall not be responsible for any damages to the developed property within said easement that unreasonably interferes with those needs. • The applicant shall not place any building foundations within 5 feet of any SMUD trench to maintain adequate trench integrity. The applicant shall verify specific clearance requirements for other utilities. • The applicant shall provide separate SMUD service points to each parcel to the satisfaction of SMUD. • The applicant shall locate, verify, and provide a drawing to SMUD identifying all electrical utility infrastructure for the existing structures. If necessary, any existing onsite electrical infrastructure that serves existing structures shall be relocated to the satisfaction of SMUD. • The applicant shall dedicate any private drive, ingress and egress easement, or Irrevocable Offer of Dedication (and 10-feet adjacent thereto) as public utility easement for underground facilities and appurtenances. All access roads shall meet minimum SMUD requirements for access roads. • The applicant shall dedicate and provide all-weather vehicular access for service vehicles that are up to 26,000 pounds. At a minimum: (a) the drivable surface shall be 20 feet wide; and (b) all SMUD underground equipment and appurtenances shall be within 15 feet from the drivable surface. • Under no circumstances shall any grading or construction activities be permitted within SMUD's transmission line easements without the conveyance of rights from SMUD's real estate department. Should the applicant be found performing unapproved improvements, the applicant shall be responsible for returning the property to its original condition at their expense.			

Conditions of Approval	Category	Timing / Implementation	Enforcement/ Monitoring
• Project owner or contractor is responsible for assessing any impacts to its facilities as a result of constructing and operating their facilities within close proximity to SMUD's high voltage transmission lines. • Storm water quality detention basins within SMUD easement: It is SMUD's policy that construction of basins not be placed within transmission line easements. SMUD may, at its own discretion allow after the following items are addressed to SMUD's satisfaction: (1)The basin shall be designed and constructed as a dry extended basin. (2) The detention basin shall be inspected and maintained as required by Table DB-5. (3) Project owners shall provide the detailed design of the basin to SMUD for review and approval. (4) The basin shall be designed that it does not interfere with access to SMUD towers/poles and maintains at least 2 construction and maintenance pads as shown in the SMUD guide for Transmission Encroachment drawings GFE-1 thru 4. • Playground structures are not allowed within SMUD transmission line easement. • Flying of kites is the transmission line easement is prohibited. Signs will need to be installed at Park ingress areas to inform the public. • Show all SMUD transmission towers and poles in the drawings. • Project owner shall provide detailed engineering drawings for any improvements that are proposed within the SMUD transmission line easement and will require SMUD's consent to do work within the transmission line easement. The applicant shall comply with the SMUD drawing requirements. • All excavations within 25 feet of any structure will require submittal of construction procedures, drawings, calculations and shoring plans reviewed and stamped by a licensed California Civil engineer. Additional requirements may be requested by SMUD. • All personnel and boom-operated equipment performing work within SMUD's easement shall obey Electrical Safety Orders of			

	Conditions of Approval	Category	Timing / Implementation	Enforcement/ Monitoring
	California Title 8, Subchapter 5, Group 2, Article 37. • Add following note to drawings: WARNING-SMUD 230KV OVERHEAD TRANSMISSION LINES ARE LIVE- Electrocution Potential. Project owner or contractor shall take all appropriate safety measures when working near or under lines, including placement of OSHA-required warning signage. On site SMUD inspection required when working within 25 feet of SMUD facilities. Contractor shall contact SMUD Inspection Services at 916-732-5916 to schedule inspection. 72-hour advance notice is required. Project owner or contractor shall protect SMUD facilities during construction and notify SMUD immediately if facilities are damaged. Any damage to existing facilities shall be repaired at the project owner or contractor's expense. • Any necessary future SMUD facilities located on the Applicant's property shall require a dedicated SMUD easement as determined prior to SMUD performing work on the applicant's property.			
36.	In cases where the roadway cross-sections are phased, extend all utilities beyond edge of pavement to accommodate future roadway build out.	Infrastructure	Prior to Improvement Plan Approval	Public Works
37.	The project is within the Sacramento County Water Agency District and shall comply with the following; • Provide public water service to each building • Provide separate public water service to each parcel. All water lines shall be located within a public right-of-way or within easements dedicated to SCWA. Easements shall be reviewed and approved by Sacramento County Water Agency prior to Improvement Plan approval or Final Map approval. • Destroy all abandoned wells on the proposed project site in accordance with the requirements of the Sacramento County Environmental Health Division. Clearly show all abandoned/destroyed wells on the improvement plans for the project. Prior to abandoning any existing agricultural wells, applicant shall use water from agricultural wells for grading and construction.	Water	Prior to Improvement Plan and or Prior to Final Map	Sacramento County Water Agency

	Conditions of Approval	Category	Timing / Implementation	Enforcement/ Monitoring
	• Prior to the issuance of building permits require water intensive commercial and industrial building permit applicants to conduct a water use efficiency review and submit the findings in required environmental documentation for the project. • Prior to the issuance of building permits require efficient cooling systems, re-circulating pumps for fountains and ponds, and water recycling systems for vehicle washing as a condition of service			
38.	Applicant shall photo-document the condition of existing streets, sidewalks and infrastructure that will be affected by work to the satisfaction of the Public Works Department.	Infrastructure	Prior to approval of improvement plans	Public Works
39.	Enter into a frontage agreement and bond for construction of public improvements per the approved Public Works plans to the satisfaction of the Public Works Department.	Infrastructure/Bond	Prior to approval of applicable improvement plans	Public Works
40.	A final landscape plan shall be submitted in conjunction with improvement plan and or building permit submittal and approved by the planning and public works departments prior to issuance of permits and/or any installation of landscape materials RCMC 23.716.020. The final landscape planting and irrigation plan shall be prepared by a registered licensed landscape architect and include the following items per RCMC 22.180.060: • Planting plan to scale that indicate slope • Irrigation Plan • Soils Test • Water Use Calculations • Irrigation Schedule	Landscaping	Prior to approval of improvement plans	Public Works
41.	Number, size, and location of driveways are subject to approval by the Public Works Department.	Infrastructure	Prior to approval of improvement plans	Public Works
42.	The applicant shall comply with the Fire conditions as follows; a. Show the design for a fire access roadway of not less than 20-feet of unobstructed width, 13-feet, 6-inches of vertical clearance, and turning radii of 25 feet inside and 50 feet outside dimension on the improvement plans. The access roadway	Fire	Prior to approval of improvement plans	Fire

Conditions of Approval	Category	Timing / Implementation	Enforcement/ Monitoring
shall extend to within 150 feet of all portions of the exterior walls of the first story of any proposed building. The use of turf-block or grass-crete or similar alternate road surfaces is not approved for installation in fire apparatus access roadways. b. Show the design for an approved fire apparatus turnaround which shall conform to Sacramento Metro Fire Districts, Fire Prevention Standard #3. c. Show on the plans how Fire Lanes will be marked. Fire Lane identification shall be provided along the required fire access roadway. Fire Lane identification shall be in accordance with the Sacramento Metro Fire Districts Fire Prevention Standard #3 and the California Vehicle Code. Vehicle parking is prohibited on any street less than 28 feet in width. Vehicle parking is permitted on both sides of streets 36 feet or more in width. Roadway widths shall be measured between the gutter-line or edge of pavement on opposite sides of the road. Identification of fire apparatus access roadways may be required on private roads. d. Provide a note on the plan that reads, "Fire access roadways shall be built to bear a minimum of 80,000 pounds and meet the Sacramento County Public Works Standards for roadways. A report, prepared by a registered geotechnical engineer, verifying the ability of the road to bear the required minimum weight, shall be submitted with any plan indicating construction of roadway. Verification of constructed roadway shall be provided by a registered geotechnical engineer prior to final of the project." Required Private streets and fire apparatus access roads shall be installed to the "first lift," (Up to the last one inch of pavement) identified, and verified by SMFD prior to any construction, (including foundations) or on-site storage of combustible materials. e. Show the location of the required fire hydrants for this project on the improvement plans. Approved fire hydrants capable of providing the required fire flow for the protection of any and all structures shall be located along the fire apparatus access roadway. The required fire hydrants shall be installed and			

	Conditions of Approval	Category	Timing / Implementation	Enforcement/ Monitoring
	operational prior to any construction, (including foundations) or on-site storage of combustible materials. The minimum required fire flow for the protection of commercial developments is 1,500 gallons per minute (gpm) at a pressure of 20 pounds per square inch (psi) for a two-hour duration.			
43.	Incorporate permanent storm water quality treatment, hydromodification and full capture trash control measures into the site improvement plans in conformance with applicable City and County codes & standards, and state and federal law.	Drainage	Prior to approval of improvement plans	Public Works
44.	Improvement plans shall provide that Developer shall rough grade the park site pursuant to the specification of the Cordova Recreation and Park District, so that there are no excessive amounts of dirt or depressions.	Parks	Prior to approval of improvement Plan	Public Works
45.	All trails shall be located outside of the 10-year flood boundary that is shown in the Ranch Master drainage study.	Trails	Prior to approval of improvement Plan	Public Works
46.	Construct private street(s) in accordance with the approved Tentative Map, and City standard specifications to the satisfaction of the Public Works Department. In addition, provide a level of LED street light illumination equivalent to that required for public streets for the entire portion of the private road system.	Infrastructure	Prior to approval of improvement Plan	Public Works
47.	Traffic control devices including but not limited to signage and striping shall be designed where needed to the satisfaction of the City Engineer. Specific locations of the Traffic control devices will be determined at time of improvement plan submittal. Bulbouts shall be installed at the intersection corners adjacent to Lot D (Community Park).	Infrastructure	Prior to approval of improvement Plan	Public Works
48.	The Stormwater Pollution Prevention Plan shall include a contingency plan for the implementation of a process to remove fine clay sediments prior to discharge to The City of Rancho Cordova's storm drain system and/or Waters of the State (e.g., creeks, rivers) to the satisfaction of the City of Rancho Cordova. A polymer treatment system or comparable process shall be included as a contingency in the erosion and sediment	Drainage	Prior to approval of the Improvement Plans and during construction	Public Works

	Conditions of Approval	Category	Timing / Implementation	Enforcement/ Monitoring
	control plan of the improvement plans. The developer is not required to have the system on site full time, but shall be prepared to mobilize if necessary. If the system utilized, it shall be implemented by qualified professionals with training and proven experience in this field. Such treatment shall be accomplished in a manner that does not pose a toxic threat to fish and other aquatic organisms in receiving waters.			
49.	All landscape strips, medians, etc that contain trees shall be installed with continuous root barriers.	Infrastructure	Prior to approval of improvement plans	Public Works
50.	Provide a permanent concrete stamp, or other permanently applied message to the satisfaction of DWR not including paint, which reads “No Dumping-Flows to Creek” or other approved message at each storm drain inlet	Infrastructure	Prior to acceptance of improvements	Public Works
51.	Provide a clear physical demarcation between city-maintained landscaping and privately maintained landscaping. Examples include bend boards, mow bands, etc.	Landscaping/ Infrastructure	Prior to approval of improvement plans	Public Works
52.	Basins as shown on Exhibit F of the Development Agreement shall be privately maintained by the HOA. The basin design shall include a minimum 10-ft wide asphalt concrete service road with 2-ft compacted aggregate base shoulders. The service road shall be installed on sides of the basin that are not already served by a vehicular road. Provide access to all inlets and outlets, where necessary including minimum 10-ft wide access ramps to the bottom of the basin, per Section 9-20-C9 of the City’s Improvement Standards. A maintenance covenant between the City and the Ranch HOA is required for all proposed on-site drainage facilities within the gated community area, including pipes, detention basins and other drainage facilities. The maintenance manual (developed by the applicant per Conditions of Approval) for the basin shall be included as an appendix to this maintenance covenant. The Ranch HOA will be responsible for maintaining the drainage facilities and the detention basins as specified in the maintenance manual and per standard of care. In addition, the	Private Drainage Maintenance	Prior to approval of improvement plans	Public Works

	Conditions of Approval	Category	Timing / Implementation	Enforcement/ Monitoring
	maintenance covenant will require the Ranch HOA to submit maintenance certification documentation to the City on an annual basis. The maintenance covenant will allow the City access in case of emergencies or condition that could foreseeably be the cause of an emergency, and the City shall be reimbursed by the HOA for any costs incurred.			
53.	Developer shall provide adequate drainage facilities to the boundary of the park site at a depth sufficient to accept all drainage requirements for the improved park site. The District and the City shall jointly review and approve the drainage plans for the street frontages and utilities adjacent to the park site.	Parks	Prior to approval of the grading and drainage plan.	Public Works/CRPD
54.	The park site shall be rough graded to a uniform elevation so there are no resulting excessive amounts of fill or depressions in accordance with the latest edition of the Park Site Criteria of the *Cordova Recreation and Park District Design and Construction Standards Manual* and pursuant to the improvement plans and specifications approved by the District.	Parks	Prior to approval of grading plans	Public Works/CRPD
55.	All subdivision utilities (i.e. Water, Sewer, Storm Drain, Public Utilities, etc.) shall be brought into the park site by the developer at a location coordinated with the District and approved by the District Administrator. The District and the City shall jointly review and approve the improvement plans for the street frontages and utilities adjacent to the park site. The Park District shall give written approval for all locations of utility service points of connection on all land to be dedicated or maintained by the District prior to the approval of infrastructure construction documents.	Parks	Prior to approval of the improvement plans.	Public Works/CRPD
56.	The developer shall install signage on all park sites notifying the surrounding residential units of future park construction and identifying the park size, type, potential amenities and anticipated construction schedule. The District will have final approval of the sign design. The sign shall be maintained in good condition until the park construction is	Park	Prior to approval of the improvement plans.	Public Works/CRPD

	Conditions of Approval	Category	Timing / Implementation	Enforcement/ Monitoring
	complete.			
Prior to Issuance of Building Permit				
57.	Applicant shall submit improvement plans to the satisfaction of the Public Works Department. Improvement plans shall include, but shall not be limited to, all streets, water, sewer, storm drain, recycled water, lighting, signage and striping, and other associated facilities for all streets and other public areas depicted on the tentative map or tentative map phase.	Improvements	Prior to issuance of Building Permits except for model homes and clubhouse	Public Works
58.	Grant the improved landscaped lots within the phase of construction to the City of Rancho Cordova as shown on the approved tentative map and tentative map phasing plan and provide a maintenance entity with an ongoing funding source. The maintenance entity shall be approved and found acceptable by City representatives. Annexation to a current Lighting and Landscape District or a Mello Roos Community Finance District may be possible and is the preferred course of action.	Landscape funding	Prior to issuance of the first building permit within the phase except for Model homes and clubhouse.	Public Works
59.	Prior to issuance of the first building permit except for model homes and clubhouse within a TM phase or subphase approved by the Public Works Department: All streets and improvements shown on the TM phasing plan, all streets necessary for access to the proposed homes, associated improvements included in the approved improvement plans, and other infrastructure as necessary for adequate public access and use shall be substantially complete to the satisfaction of the Public Works Department. Prior to occupancy all streets and improvements except landscaping shown on the TM phasing plan shall be fully constructed and completed to the satisfaction of the Public Works Department. Prior to the 15th certificate of occupancy in the tentative map phase or subphase, all public landscaping shall be fully constructed to the satisfaction of the Public Works Department. At the discretion of the Public Works Department, the final lift of asphalt only (e.g. upper approximately 1.5 inches of asphalt) may be deferred	Infrastructure	Prior to issuance of the first building permit within a TM phase or subphase.	Public Works

	Conditions of Approval	Category	Timing / Implementation	Enforcement/ Monitoring
	to prior to the first occupancy. The structural section shall be designed to accommodate construction traffic and loads until such time that the finish lift of asphalt concrete is installed.			
60.	All landscape corridor walls shall be of masonry construction using graffiti resistant materials. Wall design shall be subject to City's approval and according to the design standards in the Ranch Special Planning Area Handbook.	Sound Walls	Prior to the issuance of the first building permit except for model homes and clubhouse.	Public Works and Planning
61.	Provide fencing around basins where required per City of Rancho Cordova Drainage standards.	Fencing	Prior to issuance of the first building permit except for model homes and clubhouse	Public Works
62.	Provide a stormwater maintenance plan for all drainage basins. The manual shall include, but is not limited to: • As-built topography of the basin. • Cut and fill quantities. • Plat map. • Depth volume rating curve. • As builts for steel, concrete and other structures. • Inverts of inlets, outlets, etc. • Updated model based on as-built topography if as-built topography varies from approved Improvement plans. • Document any sensitive resources.	Drainage	Prior to issuance of the first building permit except for model homes and clubhouse.	Public Works
63.	Prior to acceptance of the improvements, as-built grading and improvement plans (1 full size and 1 half size hard copy), as well as a compact disc containing said plans in AutoCAD and pdf format, and a GIS Shape file shall be submitted and approved by the Public works Department.	Files	Prior to issuance of Building Permits except for model homes and clubhouse.	Public Works
64.	Designer shall certify that installed landscaping conforms to City water	Landscaping	Prior to issuance	Public Works

	Conditions of Approval	Category	Timing / Implementation	Enforcement/ Monitoring
	conserving landscape requirements.		of the first building permit within a TM phase except for model homes and clubhouse.	
65.	Prior to the ISSUANCE OF A BUILDING PERMIT: The owner must contact Permit Services Unit at PermitServices@sacsewer.com or by phone at (916) 876-6100 to determine if sewer impact fees are due. Fees are to be paid prior to the issuance of building permits	Fees	Prior to issuance of Building Permit	SASD
Prior to Final Inspection				
66.	In addition to the conditions of approval, the mitigation monitoring and reporting program must be completed in accordance with their implementation timing prior to final inspection. This is to satisfy the requirements of the project's CEQA review.	MMRP	Prior to Final inspection/Certificate of Occupancy	Planning
67.	Residential fire sprinkler plans shall be submitted for review and approval to the SMFD for all new one and two family dwellings in accordance with Ca. Residential Code	Fire Sprinkler Plans	Prior to Issuance of Final Building Permit	Fire
68.	Residential roof coverings shall consist of materials having a minimum Class C rating	Roof	Prior to Final Occupancy	Fire
69.	Where a bridge or elevated surface is part of a fire apparatus access road, the bridge shall be constructed and maintained in accordance with AASHTO HB-7	Infrastructure	Prior to Issuance of Final Building Permit	Fire
70.	Approved numbers or addresses shall be placed on all new or existing buildings in such a position as to be easily read fromt eh street. Minimum size of the numbers shall not be less than 6 inches and shall be mounted immediately adjacent to a light source and shall also contrast with their background.	Address	Prior to Final Occupancy	Fire
71.	During and upon completion of the installation of the homeowner landscaping for the project, the project landscape architect/designer shall certify that the installed landscape complies with the approved plans. Certification shall be accomplished by completion of site visits at key installation milestones. Key milestones at a minimum shall include: rough grade, soil amendment verification, Plant material inspection, irrigation coverage test and final installation. Certification shall include	Landscape	Prior to final building inspection of each unit	Planning

Conditions of Approval		Category	Timing / Implementation	Enforcement/ Monitoring
	signed site observation reports, photographs and documentation verifying implementation of soil report recommendations.			
72.	Upon completion of the installation of the landscaping, the designer shall certify that the landscape complies with all city water conserving landscape requirements. Certification shall be accomplished by completion of a certificate of compliance on a form approved by the director of the city public works department. Failure to submit a complete and accurate certificate of compliance will delay final approval of the project and/or discontinue water service per RCMC 22.180.090. Upon receipt of the certificate of compliance and site inspection from City staff, the landscaping performance bond will be released.	Landscaping	Prior to final Building Inspection	Public Works

CITY OF RANCHO CORDOVA

ORDINANCE NO. XX-2020

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF RANCHO CORDOVA REZONING THE RANCH PROPERTY FROM AGRICULTURAL 80 TO THE RANCH SPECIAL PLANNING AREA

THE CITY COUNCIL OF THE CITY OF RANCHO CORDOVA DOES ORDAIN AS FOLLOWS:

WHEREAS, The Ranch, due to its central location in the eastern part of the City, is envisioned as an integral part of the City; and

WHEREAS, The Ranch project is a plan for a mixed-use development with a broad range of residential uses, commercial, parks/open space, natural resources, and associated infrastructure and roads on an approximately 530-acre site in the City. The Project includes 1,690 residential units at various densities; of that number of residential uses, 743 residential units are active adult, 5.73 acres of commercial, 14.36 acres of community and neighborhood parks, 8.99 acres of private parks; stormwater detention basins; open-space areas, trails, major roads with landscaping; and a 200 acre wetland natural resource/preserve; and

WHEREAS, The Ranch Special Planning Area (SPA) consistent with Government Code section 65451 establishes the land plan (zoning map) and zoning regulations for development within the 530 acre project area. Consistent with State law, a Special Planning Area can establish zoning regulations that are different from and unique to the project area. The Ranch SPA includes information about project objectives, relationship to other City documents, setting and surroundings, land use and circulation, development standards, environmental resources, public utilities, design guidelines and on-site infrastructure phasing plan; and

WHEREAS, The Ranch Special Planning Area adopted by this Ordinance (attached hereto as Exhibit A) complies with the requirements of California Government Code sections 65451 and 65454 and its adoption complies with Government Code section 65453; and

WHEREAS, the City referred the proposed Ranch Special Planning Area to numerous agencies and entities and provided each with adequate time in which to comment on the draft Special Planning Area; and

WHEREAS, in accordance with Government Code section 65454, the proposed Ranch Special Planning Area has been determined to be consistent with the City's General Plan as detailed in The Ranch Special Planning Area Handbook (Consistency of The Ranch Special Planning Area with the City of Rancho Cordova General Plan): and

WHEREAS, the City determined that an Environmental Impact Report ("EIR") should be prepared and circulated a Notice of Preparation on July 26, 2018 to public agencies and interested parties for consultation on the scope of the EIR; and

WHEREAS, the Draft EIR was circulated for public review from August 16, 2019 through September 30, 2019 which identified several potentially significant impacts that will be reduced to insignificance with specified mitigation measures and certain impacts that are significant and unavoidable. Approval of the Project will therefore require adoption of CEQA environmental

findings, a Statement of Overriding Considerations, and a Mitigation Monitoring and Reporting Program; and

WHEREAS, on January 6, 2020, the City Council held a properly noticed public hearing at which it received a report from City Staff regarding The Ranch Special Planning Area and oral and written testimony from the public, and deliberated on the item; and

WHEREAS, the public hearing was noticed in accordance with the requirements set forth in Government Code section 65090 and 65091.

NOW THERFORE, **THE CITY COUNCIL OF THE CITY OF RANCHO CORDOVA DOES ORDAIN AS FOLLOWS:**

Section 1. Recitals.

The foregoing recitals are true and correct and made a part of this Ordinance

Section 2: Rezone Findings.

A. Finding: The proposed amendment is internally consistent with the General Plan**.** Evidence: In accordance with Government Code section 65454, the City Council finds that the proposed Ranch Special Planning Area is consistent with the City's General Plan. The findings and evidence to support this General Plan consistency determination are set forth in Exhibit A attached hereto and incorporated herein by this reference, which addressing consistency with applicable policies in the General Plan, and the general findings set forth below.

In general, the Project is consistent with the General Plan as follows:

i. The Ranch Special Planning Area includes land use districts that are consistent with the desired land use patterns (neighborhoods and villages) and corresponding development parameters in the General Plan Land Use Element. Specifically, the land use types, distribution, densities and intensities of The Ranch Special Planning Area are consistent with the Suncreek Preserve Planning Area Concept Plan (General Plan Figure LU-26), corresponding text description, and assumed development potential (General Plan Table LU-5) outlined in the General Plan.

ii. The Ranch Special Planning Area includes a land use plan, development standards as well as guidelines for subsequent project design consistent with the goals of the General Plan Urban Design Element. Specifically, the location and design concepts for the commercial area within The Ranch are in keeping with the building block concepts outlined in the Urban Design Element (General Plan Goal UD-1 and corresponding policies and actions). Additionally, design guidelines establish unique project identity with context-sensitive design provisions envisioned in General Plan Goals UD-3.

iii. The Ranch Special Planning Area includes land use designation for two commercial areas located at the corner of two major roadways. The SPA implements General Plan

Economic Development Element Goal ED-1 in that it diversifies the local economy with land uses that provide fiscal benefits to the City and residents, and because it provides new local retail and service opportunities that will generate tax revenues for the City.

iv. The Ranch Land Use Plan includes a wide range of residential land use designations including single-family residential, medium density residential, high density residential, as well as an active adult community with amenities. Residential land use designations (allowing between 2 and 50 units/acre) are distributed throughout the project site with high density housing located in close proximity to the commercial area, parks, and trails. The mix and distribution of housing are consistent with the General Plan Housing Element Goals H-1 and H-4 in terms of balancing employment and housing and encouraging housing opportunities, respectively.

v. The Ranch Circulation Plan is consistent with the General Plan Circulation Plan (Figure C-1) and establishes a roadway system for local project traffic, improved community circulation, and as well as regional transportation system with the addition of one major east west roadway (Chrysanthy Boulevard) as well as improvements to the north-south connectivity. The Ranch Bikeway and Trails Plan is consistent with the General Plan Bikeway and Trails Plan (Figure C-2) as well as the City's current Bikeway Master Plan. The Ranch Special Planning Area Section 3.8.1 through 3.8.3 identifies planned street improvements for major roadways and trails and establishes standards and principles for subsequent review of local streets and trail connections in keeping with the General Plan Circulation Element Goals C-1 and C-2 for multi-modal facilities and connectivity.

vi. The Ranch Land Use Plan designates approximately 200 acres (38% of the project area) for natural resources, which excludes storm water detention and private recreation areas. Project open space includes a 510 acre wetland preserve, drainage parkways, landscape corridors, and greenbelts which are consistent with the General Plan Goals NR-2 and NR-3. Project parks include a total of 14.36 acres of public parks and 8.99 acres of private parks. The Ranch Bikeway and Trails Plan paved off-street bike paths and trails connecting neighborhoods to activity centers and improving regional trail connections. Planned open space, parks, and trails for The Ranch are consistent with General Plan Open Space, Parks, and Trails Element Goals OSPT-1, OSPT-2, and OSPT-3 in establishing a premier system of public parks, establishing connected and diverse open space systems, and maximizing opportunities for pedestrians and cyclists.

vii. The Ranch Circulation Plan and Infrastructure plan identify necessary infrastructure, utilities, and services for the project consistent with the goals and policies outlined in the General Plan Infrastructure Goal ISF.2.

viii. The Ranch Environmental Impact Report identifies all known and protected resources within the project area. Required protection and mitigation measures have been incorporated into The Ranch SPA and the Mitigation Monitoring Report Plan. The Ranch project is consistent with the General Pan Natural Resources Element Goals NR-2, and NR-3 regarding protection and preservation of wildlife, plant habitats, wetlands and creek corridors.

ix. The Ranch project includes a drainage plans and guidelines consistent with General Plan Safety Element Goal S-2 (and corresponding policies and actions) to reduce the possibility of a flooding or drainage issue causing damage to urban land uses.

B. Finding The proposed amendment would not be detrimental to the public interest, health, safety, convenience, or welfare of the City
Evidence: The proposed Ranch SPA will not be detrimental to the public interest, health, safety, convenience, or welfare of the City as the project is expected to result in an improved jobs/housing ratio than what currently exists and includes the designation of public uses including parks and other public or quasi-public uses. The Ranch SPA integrates sustainable development practices at each level of community planning and implementation. It includes retail opportunities for the planned community and the surrounding areas of the City as well as a variety of residential densities resulting in a range of housing opportunities for a range of income levels.

C. Finding: CEQA Compliance.
Evidence **:** In compliance with the California Environmental Quality Act ("CEQA"), on January 6, 2020, by Resolution, the City certified the Special Planning Area EIR (State Clearinghouse #2018072011) adopted environmental findings pursuant to CEQA guidelines Section 15091, adopted a statement of overriding considerations, and adopted a mitigation monitoring plan for The Ranch project including the Special Planning Area, prior to approval of the Special Planning Area.

D. Finding: If a map amendment the site is physically suitable (including absence of physical constraints, access, compatibility with adjoining land uses and provisions of utilities) for the requested zoning code.
Evidence: The project site is physically suitable for the proposed density of development. The proposed plan is consistent with the General Plan conceptual plan "Suncreek Preserve Planning Area" as the land uses designations show in the TRSPA handbook Figure 3: Proposed General Plan Land Use Map. Natural Resource areas have been avoided to the extent possible. The proposed circulation plan enhances and expands roadway systems in the area with connections to existing roads. The project land use uses are consistent with the surrounding areas that includes residential and natural resources designations. The project infrastructure that includes utilities will connect into existing infrastructure.

E. Finding: If a text amendment, the amendment is internally consistent with the other applicable provisions in the zoning code.

Evidence: The project includes a proposed zoned Special Planning Area (SPA) that is subject to development according to the SPA handbook text and exhibits as well as subject to provisions as set forth by the Development Agreement. The Ranch SPA handbook provides a set of development standards and guidelines for the project site. As a SPA, the handbook establishes unique and specific standards to create design flexibility in achieving project goals. The standards and permitted uses provided in the SPA handbook are intended to supplement the City of Rancho Cordova Zoning Code. Where the standards are silent or unspecified, the City of Rancho Cordova Zoning Code shall apply.

Section 3: Special Area Planning Findings

A. Finding: The proposed special planning area is consistent with the goals, policies, and objectives of the General Plan.
Evidence: The Ranch SPA is consistent with several of the General Plan goals as stated in The Ranch Special Planning Area handbook (Exhibit A The Ranch Special Planning Area).

B. Finding: The proposed special planning area meets the requirements set forth in Zoning Ordinance chapter 23.149.
Evidence: The proposed Ranch SPA includes the SPA handbook text and exhibits. The Ranch SPA handbook provides a set of development standards and guidelines for the project site. As a SPA, the handbook establishes unique and specific standards to create design flexibility in achieving project goals. The standards and permitted uses provided in the SPA handbook are intended to supplement the City of Rancho Cordova Zoning Code. Where the standards are silent or unspecified, the City of Rancho Cordova Zoning Code shall apply. The SPA handbook includes all the requirements as stated in the Zoning Ordinance chapter 23.149.120 General provisions.

C. Finding: The special planning area is needed because the project is not possible under the existing requirements.
Evidence: The site is currently zoned as Agricultural 80 which would result in very low density residential use and agricultural uses. Therefore, higher residential uses and commercial uses would be unable to be developed on the project site. In addition, the General Plan concept plan shows higher residential densities and commercial that is consistent with the proposed SPA.

Section 4: Adoption of The Ranch Special Planning Area.

The City Council hereby adopts The Ranch Special Planning Area, attached as Exhibit A.

Section 5: Severability.

If any section, subsection, clause or phrase of this Ordinance is for any reason held to be invalid or unconstitutional by the decision of a court of competent jurisdiction, it shall not affect the remaining portions of this Ordinance that can be given effect without the invalid provision and, to this end, the provisions of this Ordinance are severable. This City Council hereby declares that it would have adopted this Ordinance irrespective of the invalidity of any particular portion

thereof and intends that the invalid portions should be severed and the balance of the Ordinance enforced.

Section 6: Publication and Effective Date.

Within fifteen (15) days after adoption, a summary of this Ordinance shall be published once in the Grapevine Independent or the Sacramento Bee, a newspaper of general circulation printed and published in Sacramento County and circulated in the City of Rancho Cordova, in accordance with Government Code section 36933. This Ordinance shall take effect and be enforced thirty (30) days after its adoption.

PASSED AND ADOPTED by the City Council of the City of Rancho Cordova this _____ day of _____, 2020, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

_____
David M. Sander, Mayor

ATTEST:

_____
Stacy Leitner, CMC
City Clerk

DRAFT

THE RANCH

Special Planning Area Handbook

December 2019

K Hovnanian

This page left intentionally blank.

Project Team

JURISDICTION
City of Rancho Cordova
2729 Prospect Park Drive
Rancho Cordova, CA 95670

APPLICANT/DEVELOPER
K. Hovnanian Homes
3721 Douglas Boulevard, Suite 150
Roseville, CA 95661

LAND PLANNER + LANDSCAPE ARCHITECT
Wood Rodgers Inc.
3301 C Street, Bldg. 100-B
Sacramento, CA 95816

CIVIL ENGINEER
CTA Engineering & Surveying
3233 Monier Circle
Rancho Cordova, CA 95742

Table of Contents

1
INTRODUCTION 7
1.1 Overview
1.2 Purpose
1.3 Context + Setting
1.4 Vision + Principles
1.5 The Ranch Land Use Plan

2
REGULATORY FRAMEWORK 16
2.1 Relationship to Existing City Documents
2.2 General Plan Consistency
2.3 Special Planning Area Administration

3
SPECIAL PLANNING AREA ELEMENTS 19
3.1 Land Use Designations
3.2 Zoning + Permitted Land Uses
3.3 The Ranch Neighborhoods
3.3.1 The Gateway Neighborhood
3.3.2 Parkview Neighborhood
3.3.3 Four Seasons Neighborhood
3.4 Architectural Styles
3.4.1 Market Rate Single Family Residential
3.4.2 Active Adult Single Family Residential
3.4.3 High Density Residential
3.4.4 Commercial
3.5 Development Standards
3.5.1 Single-Family Detached
3.5.2 High Density Residential Development Standards
3.5.3 Commercial Development Standards
3.6 Noise Standards
3.6.1 Construction Noise Standards
3.6.2 Operational Noise Standards
3.7 Circulation Design Standards
3.7.1 Overall Circulation Plan
3.7.2 Street Sections
3.7.3 Trail Network
3.8 Parks + Open Space Design Program
3.8.1 Overall Park + Open Space Plan
3.8.2 Conceptual Park +Open Space Program
3.8.3 Landscape Standards
3.8.4 Signage, Entry Monumentation, and Walls
3.9 Wetland Preserve
3.10 Infrastructure
3.10.1 Sanitary Sewer
3.10.2 Water Service
3.10.3 Drainage
3.10.4 Phasing

List of Exhibits + Tables

Exhibit 1	Regional Location Map
Exhibit 2	Local Context Map
Exhibit 3	Land Use Plan
Table 1	Land Use Summary Table
Exhibit 4	Public + Private Neighborhoods
Exhibit 5	General Plan Land Use Map
Exhibit 6	Zoning Map
Table 2	Permitted Uses for Commercial District
Exhibit 7	Gateway Neighborhood Map
Exhibit 8	Gateway Neighborhood Conceptual Site Plan
Exhibit 9	Parkview Neighborhood Map
Exhibit 10	Four Seasons Neighborhood Map
Exhibit 11	60'x105' (Typ.) Conventional Lots Typical Development Standards
Exhibit 12	50'x105' (Typ.) Conventional Lots Typical Development Standards
Exhibit 13	45'x105' (Typ.) Conventional Lots Typical Development Standards
Exhibit 14	43'x105' (Typ.) Conventional Lots Typical Development Standards
Exhibit 15	45'x85' (Typ.) Conventional Lots Typical Development Standards
Exhibit 16	35'x78' (Typ.) Alley-Loaded Lots Typical Development Standards
Exhibit 17	30'x78.5' Typical Development Standards
Exhibit 18	35'x 78' (Typ.) Typical Development Standards
Table 3a	High Density Residential Development Standards
Table 3b	Active Adult High Density Residential Development Standards
Table 4	Commercial Development Standards
Exhibit 19	Overall Circulation Plan
Exhibit 20	Rancho Cordova Minor Arterial Street Section
Exhibit 21	Chrysanthy Boulevard Minor Arterial Street Section
Exhibit 22	North Campus Road Minor Arterial Street Section
Exhibit 23	Rancho Cordova Parkway Modified Minor Arterial Street Section
Exhibit 24	Chrysanthy Boulevard Modified Minor Arterial Street Section
Exhibit 25	Standard Residential Street Section
Exhibit 26	Modified Residential Street Section at Entry
Exhibit 27	Minor Residential Street Section
Exhibit 28	Private I – Court
Exhibit 29	Typical Cul-de-Sac Bulb
Exhibit 30	Pedestrian Crossing and Trail Map
Exhibit 31	Nature Trail Section
Exhibit 32	Class I Trail Section
Table 5	Parkland Dedication
Exhibit 33	Overall Park + Open Space System
Exhibit 34	Gateway Neighborhood Plaza Concept
Exhibit 35	Parkview Neighborhood Community Entry
Exhibit 36	Parkview Conceptual Plan of Community Park Plan
Exhibit 37	Parkview Conceptual Open Space Power Line Corridor
Table 6	Four Seasons Clubhouse & MFR Parking Requirements
Exhibit 38	Four Seasons Recreation Center Conceptual Plan
Exhibit 39	Four Seasons Linear Park Conceptual Plan
Exhibit 40	Four Seasons Community Garden Conceptual Plan
Exhibit 41	Open View Fencing

Exhibit 42 Good Neighbor Privacy Fencing
Exhibit 43 Example of Wall Detailing (Preliminary design, subject to change)
Exhibit 44 Primary Community Entry Rendering
Exhibit 45 Examples of Primary Community Entry Monumentation
Exhibit 46 Community Entry Monumentation
Exhibit 47 Examples of Secondary Entry Monumentation
Exhibit 48 Four Seasons Gated Entry
Exhibit 49 Four Seasons Community Entries Concept
Exhibit 50 Wetland Preserve
Exhibit 51 Sanitary Sewer Map
Exhibit 52 Water Service Map
Exhibit 53 Drainage Map
Exhibit 54 Section A-A Drainage Basin Illustration
Exhibit 55 Phasing Plan

1 Introduction

1.1 OVERVIEW

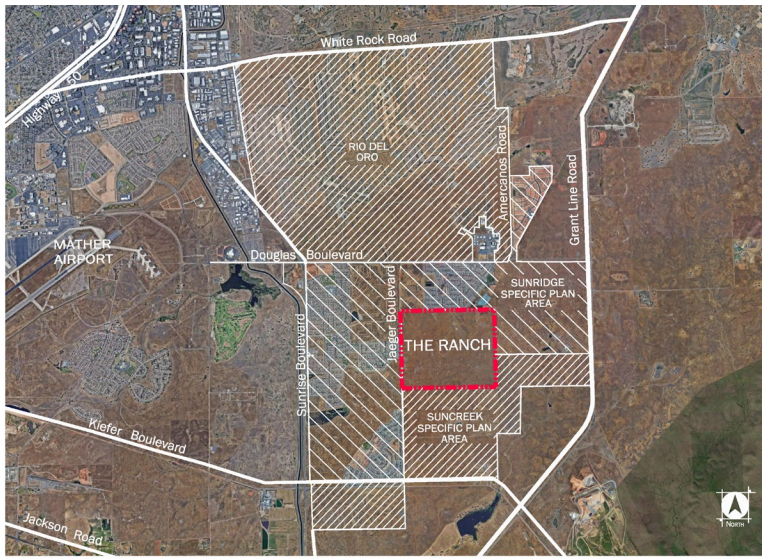
The City of Rancho Cordova, since its incorporation in 2003, has defined an aggressive vision—to "Build a City". Its implementing themes are equally important: Place Making, Catalyst for Change, Great Ideas, Land Use Change, and Services for Quality of Life.

Since the City of Rancho Cordova is not a traditional City nor built around a historic downtown, the long-term strategy is to create a unique urban form. The City has elected to pursue an urban form composed of multiple centers, each designed to contribute to the City as a whole. Such an approach to an urban form relies on a hierarchy of activity centers that respond to the diverse civic, residential, commercial, employment, and recreational needs of this growing community. The Ranch, due to its central location in the eastern part of the City, is envisioned as an integral part of the City—providing a dynamic program of types and styles of homes, connected to a commercial village center and a range of recreational uses by a series of on- and off-street trails.

In preparation for creating this handbook, the Applicant and Development Team have worked closely with City Staff and Elected Officials to understand the needs and wishes of the City and community at large. In addition, the Applicant and Development Team have reviewed and analyzed relevant policy and regulatory documents as context for this SPA document:

- City of Rancho Cordova General Plan
- City of Rancho Cordova Zoning Code
- Sunrise Douglas Community Plan
- South Sacramento Habitat Conservation Plan
- City of Rancho Cordova Pedestrian & Bicycle Master Plan
- Citywide Design Guidelines
- Cordova Recreation & Park District Master Plan for Incorporated Areas 2014
- Cordova Recreation & Park District Preliminary District-wide Facilities Distribution Plan, June 2017

Exhibit 1: Regional Location Map



1.2 PURPOSE

The purpose of The Ranch Special Planning Area Handbook is to guide future development(s) within The Ranch SPA project and allow for a more creative implementation of the General Plan. Special Planning Areas are more conducive to the use of imaginative planning standards that would not be allowed through the application of a standard zoning district.

The Ranch is envisioned to be a focal community that exemplifies the City's "building blocks" as described in the General Plan. Every city has several basic elements—neighborhoods, villages, and districts distributed throughout the community. Each of these elements contribute to a successful city. The Ranch will use these "building blocks" to create a city on a small scale—one that ensures a walkable, livable and sustainable development by:

- Providing a mix of residential and nonresidential uses,
- Creating neighborhood retail development,
- Implementing compact design to preserve sensitive wetlands,
- Providing market-rate neighborhoods with a variety of densities; and
- Create the City's first active-adult neighborhood to provide housing choices to an underserved segment of the City of Rancho Cordova's population catering to their specific needs and lifestyle.

The community is cohesively designed with a unique street scene, prominent monumentation to mark arrival, and a quality architectural palette to create continuity across varied and diverse housing types.

Through the creation, and eventual adoption, of a SPA Handbook, unique development standards and allowed uses will be established that will permit The Ranch to become this unique urban area. It is for these reasons that The Ranch Special Planning Area Handbook has been created and why this community will be a model community in the City of Rancho Cordova and in the greater Sacramento region.

1.3 CONTEXT & SETTING

The Ranch Special Planning Area (TRSPA) lies within the Sunrise Douglas Community Plan area. However, the TRSPA was not included in the approved Sunridge Specific Plan (approved June 2003) nor was it included in the adjacent Suncreek Specific Plan (approved October 2012). In the City's General Plan, this area is called the "Suncreek Preserve Planning Area", and is slated for:

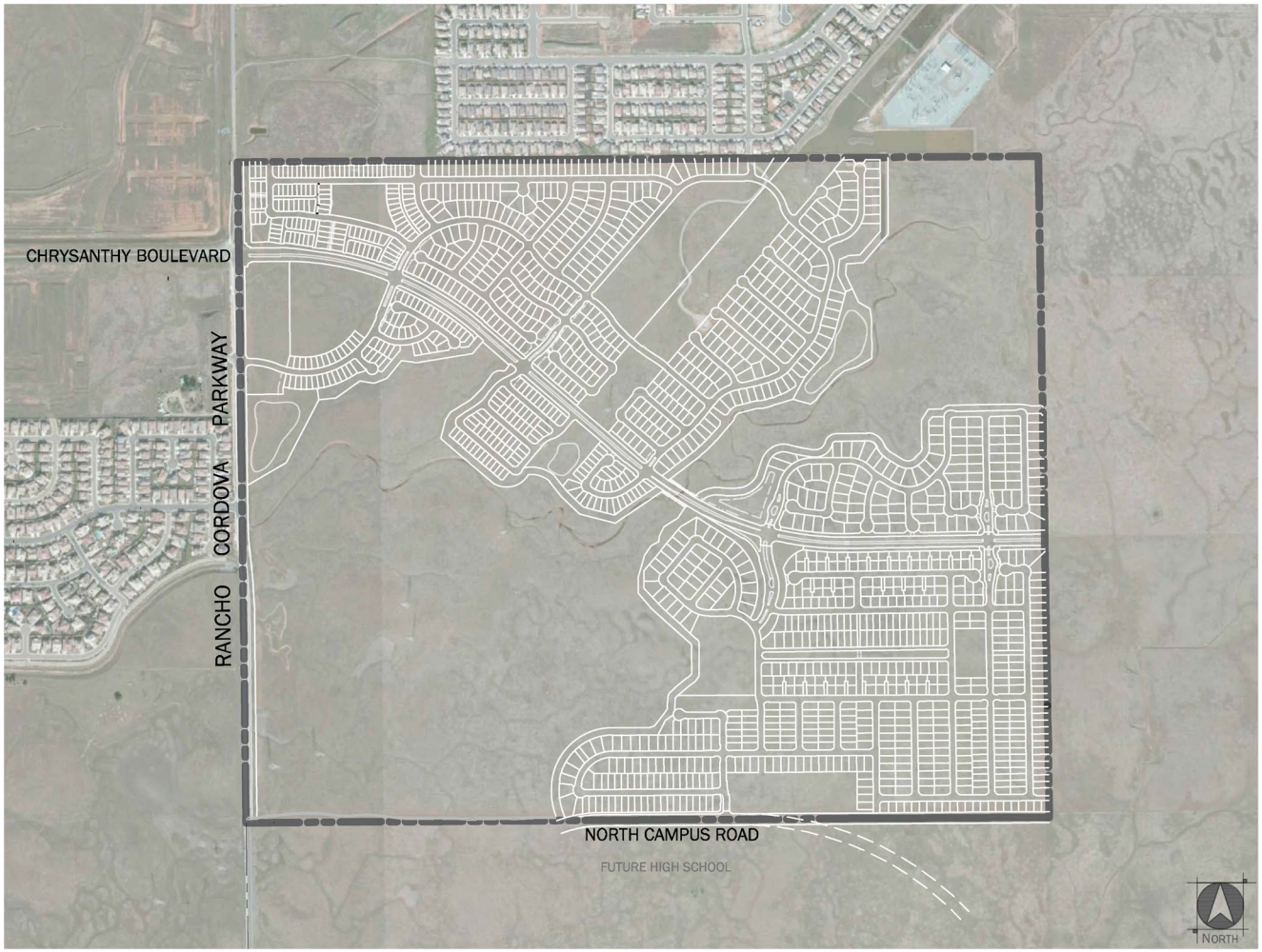
- A mix of low, medium and high-density residential uses,
- An Active Adult community comprises approximately 49% of the total residential development,
- A series of walkable neighborhoods with local and community parks,
- A village center with commercial development at the south east corner of the Chrysanthy Boulevard and Rancho Cordova Parkway intersection,
- Wetland preservation,
- Connection to the City's open space and trail system.

The Ranch Special Planning Area comprises approximately 530 contiguous acres and is bound on the north by the partially built Sunridge Park subdivision. The subject property is bound on the east by vacant lands known as Grantline 208 and Arista Del Sol, both with approved Tentative Subdivision Maps, and are currently being developed. The site is bound on the south by the approved Suncreek Specific Plan Area and on the west by the completed Anatolia II and Anatolia under construction.

Access to the subject property is provided by arterial roadways including Rancho Cordova Parkway on the west and Chrysanthy Boulevard, which is planned for extension through the project, ultimately connecting Sunrise Boulevard to Grantline Road.

With The Ranch SPA's proximity to the existing City of Rancho Cordova job base, Folsom Boulevard Transit Corridor, Highway 50, as well as the site's location in the heart of the Sunrise Douglas Community Plan, the SPA is strongly positioned to be as one of the focal communities within the City of Rancho Cordova.

Exhibit 2: Local Context Map



1.4 VISIONS AND PRINCIPLES

One of the essential goals of the City is to ensure that future growth is smart growth. A City is being built where quality of life and community balance are top priorities. RSPA designed to be developed in keeping with the following nine Smart Growth Principles, which are described in more detail below:

1. Balanced Land Uses
2. Transportation Choices
3. Housing Choices
4. Integrated (Mixed) Land Uses
5. Compact Urban Development
6. Walkable Neighborhoods
7. Preservation/Integration of Natural Resources
8. Quality Design/Sense of Place
9. Regeneration/Infill

These principles promote a balanced development to serve the economy, the community, and the environment.

1. Balanced Land Use

A balanced community is a healthy community – one that can support itself over the long-term and provide choices, variety, and services that residents need and expect.

Residential, commercial, office, recreational, and public/quasi-public uses are provided throughout the entire community and sized appropriately with the service area. Retail shopping opportunities are provided close to homes so as various recreational and public/quasi-public uses. The Ranch also provides a range of housing choices throughout the community.

2. Transportation Choices

Walking, cycling, public transit, and driving are all important modes of transportation and are all found at the Ranch development. Streets are designed to safely accommodate many modes of transportation; continuous off-street trails will connect future residents to the commercial area, parks, future schools and open space area. A future transit stop, located at Rancho Cordova Parkway and Chrysanthy Boulevard intersection will provide public transit opportunities on the City's Signature Bus Route and accessible to all future residents.

3. Housing Opportunities and Choices

The design of the community allows for a range of densities, including low, medium and high density residential, and a variety of housing types including:

- Higher density Single-family homes:
  - zero lot line/use-easement homes
  - Alley-loaded homes
  - I-courts (cluster) homes
- Multi-family residences
- Senior multi-family residences
- Traditional single-family homes
- Executive single-family homes
- Affordable Housing opportunities

What's more, The Ranch offers both a market-rate neighborhood and the City's first active-adult neighborhood, expanding the housing choices offered within the City of Rancho Cordova.

4. Mixed Land Uses

The Ranch community provides for various land uses within its boundaries. By integrating or mixing these compatible uses in close proximity to one another, the development creates a desirable place for people to live, work, play, and shop. A commercial neighborhood center blends with a high-density residential development through shared access points, landscape areas and public plaza for a true integration. Other residential uses are a short walk away. A multi-family use is combined with various recreational uses for truly unique experience. The Active Adult multi-family units are integrated with clubhouse, pool, gardens, and other recreational uses.

5. Compact Urban Development

Compact development uses less land than conventional development for a more efficient land use pattern conducive to the integration of compatible uses in close proximity. Efficient use of land provides more room for the things we care about, like parks, bike trails, playgrounds and environmental amenities. Most importantly, efficient design for both community and the building itself makes efficient use of our time, thereby providing more leisure time to spend with friends and family. Within the development several neighborhoods are designed as compact urban development and located in the close proximity to the public transportation, neighborhood commercial uses and recreational opportunities. Those uses include commercial, multi-family residential, small-lot single family homes and alley-loaded single-family homes.

6. Walkable Neighborhoods

Walkability is a focus for The Ranch Land Use Plan. Streets provide sidewalks and large shade trees to create a pedestrian-friendly street scene. Off-street trails connect neighborhoods to parks, open space and the commercial area so the residents can easily walk from their homes to schools, parks, and shopping areas. The off-street north-south trail will provide connectivity to the future school sites south of the development to the existing neighborhoods north of the project. Neighborhood streets are designed for slower speeds and pedestrian crossings at key locations. Off street trails and street sidewalks will connect neighborhoods to parks, open space, natural resource areas as well as commercial area and public transportation.

7. Preservation and Integration of Natural Resources

Natural resources are a valued amenity within The Ranch. Over 200+ acres will be placed in the natural permanent preserve. The development footprint was strategically chosen to minimize impacts to the natural resources found on site such as valuable vernal pools and natural habits for plants and animals unique to the area.

8. Quality Design/Sense of Place

One of the most important aspects of creating community character and sense of identity is through the quality of project design. The Ranch site design is focused on the future residents, the nature preserve and relationship to its surroundings. The Ranch Community creates a unique identity and a memorable place that is inviting to residents, employees, and visitors.

The Ranch specific design guidelines will ensure that new development improves the aesthetics of the community. The Ranch SPA document provides a vision for the community, to create cohesive continuity across varied and diverse housing types including the city's first Active Adult neighborhood. The communal nodes and gathering areas will provide the community with a sense of place regardless of neighborhood chosen.

9. Regeneration/Infill

The area of the plan has historically been called the "donut hole" as all surrounding parcels have their land uses determined and project approved, some build out or have their Tentative Maps approved making The Ranch is quasi-infill project. As such, The Ranch development will fill in a large gap in the center of the Sunrise Douglas Community Plan Area, providing vital transportation, infrastructure, recreational and natural resources link between communities and preserves.

1.5 THE RANCH LAND USE PLAN

The Ranch Land Use Plan is consistent with the patterns for development as set forth in the City's General Plan Land Use Map. The Land Use Plan locates a commercial area along Chrysanthy Boulevard and Rancho Cordova Parkway, two 4-lane (ultimately) arterial roadways, to provide varied housing opportunities in close proximity to shopping and daily services as well as to existing employment centers throughout the City.

The Ranch plan area is divided into three distinct neighborhoods that are generally separated by Chrysanthy Boulevard and the wetland preserve:

- **The Gateway Neighborhood.**
  A commercial center with opportunity for neighborhood-serving multi-family, retail, and higher-density homes.

- **Parkview Neighborhood.**
  A traditional, single-family neighborhood with a large, centrally located Community Park and a smaller Neighborhood park close to the entrance from Rancho Cordova parkway.

- **Four Seasons Neighborhood.**
  A gated active-adult neighborhood located east of the wetland preserve.

These neighborhoods are described and illustrated in further detail in Section 2. Exhibit 3, below, illustrates the overall arrangement of neighborhoods and Exhibit 4 details the relationship of public and private lands.

Eight different single-family lot sizes and ten product types are provided within the Plan Area to accommodate various income levels and lifestyle choices within the plan area. Additionally, the plan provides for a higher density housing conveniently located next to the commercial village and in close proximity to transit opportunities.

The Ranch Land Use Plan provides many varied recreation opportunities in the form of both active and passive parks, natural open spaces, and a system of off-street trails. Public parks include; one 11-acre community park adjacent to open space power line corridor which is integrated for additional park uses, a +2-acre neighborhood park, and a 1.2-acre passive open green park at the edge of the preserve. The park is linked to the surrounding neighborhood by sidewalks and off-street trails. A private clubhouse and system of private parks are provided in the Four Seasons neighborhood.

The plan area also includes a 200+/- acre wetland preserve that will be maintained in perpetuity for the preservation of threatened and/or endangered species. A pedestrian trail around the wetland preserve provides continuous off-street circulation from the Anatolia neighborhood to the west of Rancho Cordova Parkway, through The Ranch community, to future developments to the east and existing trail to the north.

The Ranch will consist of both public and private neighborhoods (see Exhibit 4, Public and Private Neighborhoods). Vehicle traffic will be limited to residents of the gated neighborhood, utility maintenance, and emergency vehicles. Please see primary entry discussion 3.9.4 for a detailed discussion.

The following is the proposed Land Use Plan and associated Land Use Summary.

Exhibit 3: Illustrative Site Plan

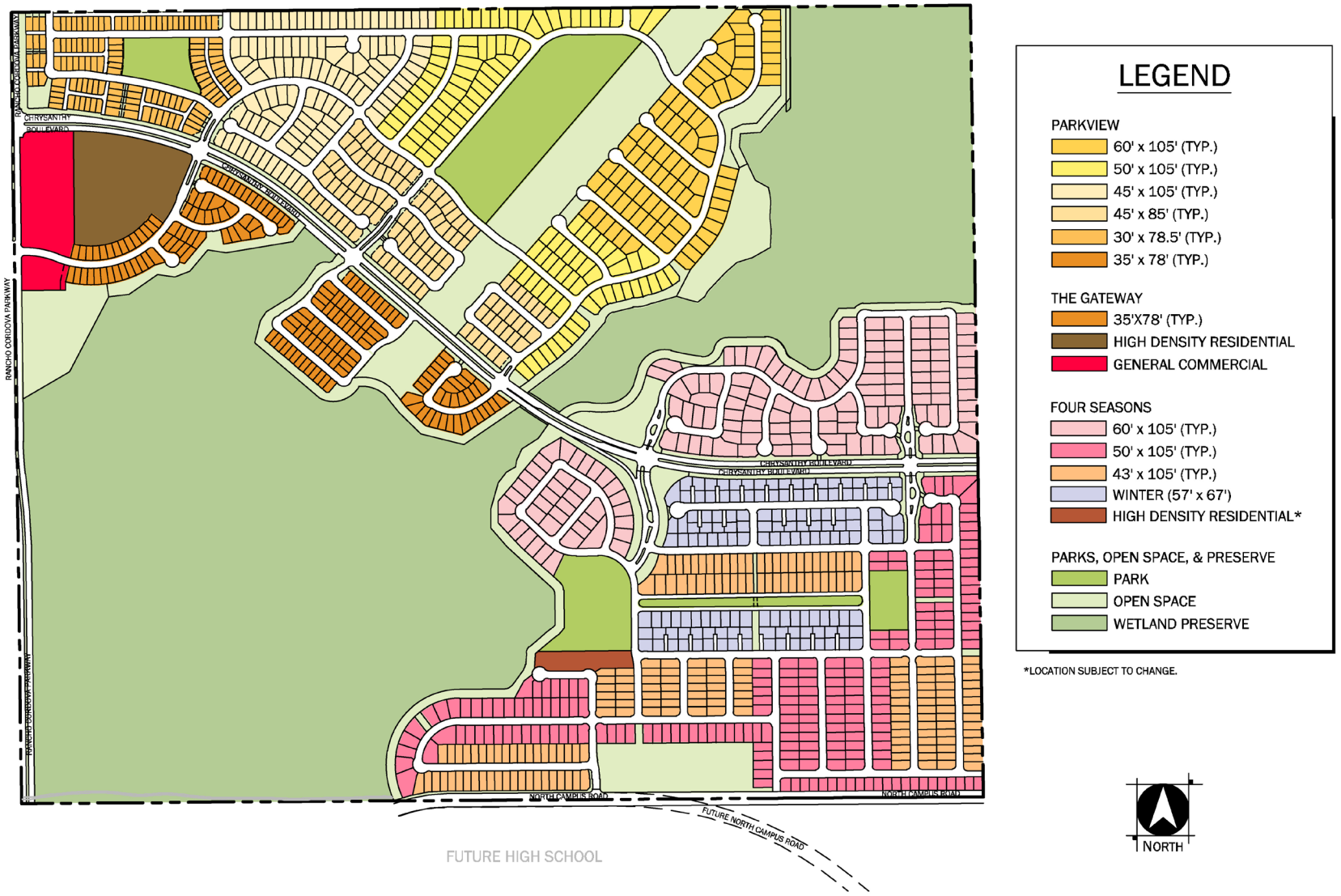
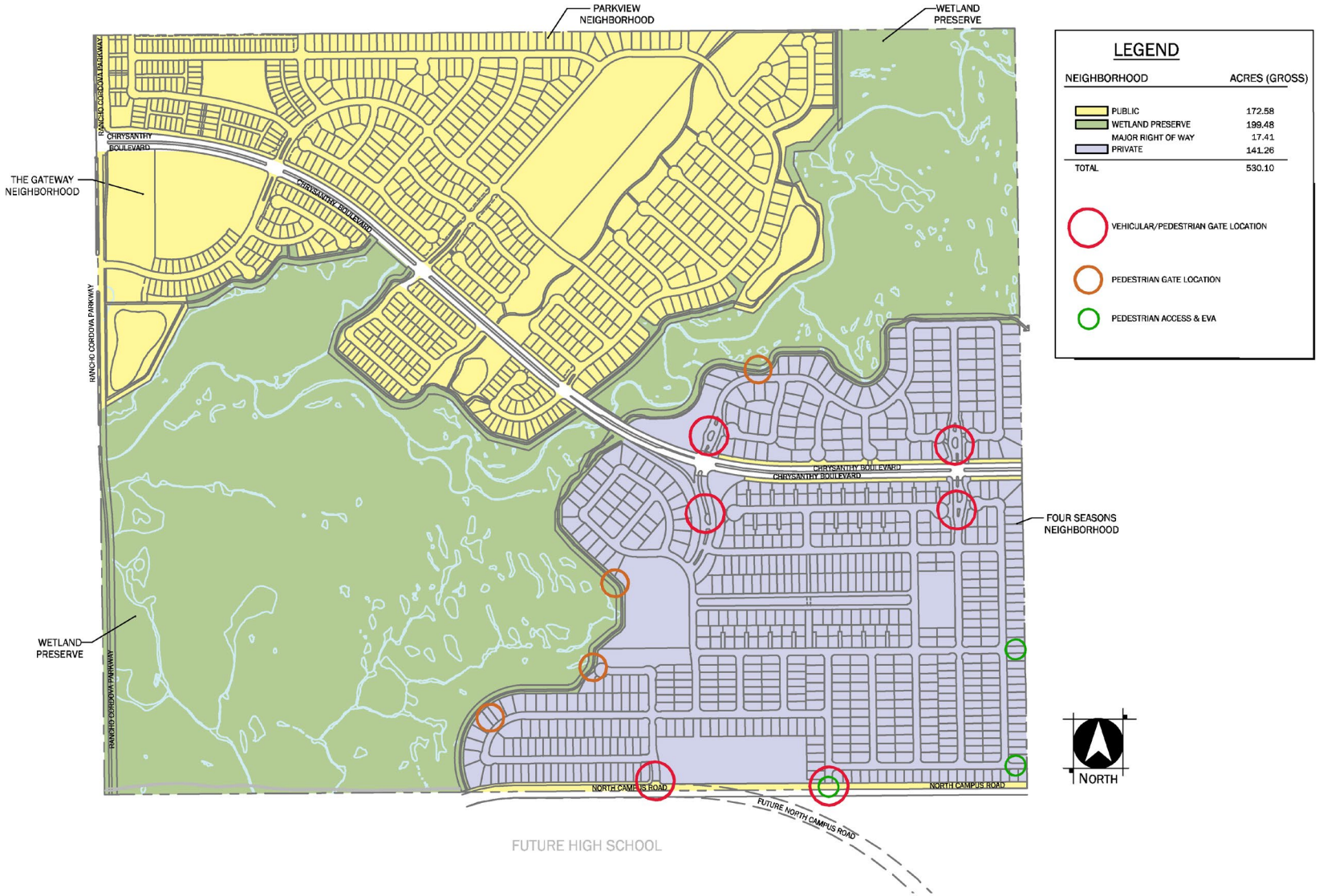


Table 1: Lot Size Summary Table

LOT SIZE SUMMARY

LOT SIZE	ACRES (GROSS)	UNITS	DENSITY (GROSS)
PARKVIEW			
60' x 105' (TYP.)	19.42	86	4.4
50' x 105' (TYP.)	22.48	114	5.1
45' x 105' (TYP.)	19.05	116	6.1
45' x 85' (TYP.)	16.57	113	6.8
30' x 78.5' (TYP.)	14.33	130	9.1
35' x 78' (TYP.)	13.53	102	7.5
SUBTOTAL	105.38	661	-
THE GATEWAY			
35'X78' (TYP.)	9.84	71	7.2
HIGH DENSITY RESIDENTIAL	7.14	215	30.0
GENERAL COMMERCIAL	5.73	-	-
SUBTOTAL	22.71	286	-
FOUR SEASONS			
60' x 105' (TYP.)	43.97	159	3.6
50' x 105' (TYP.)	36.47	212	5.8
43' x 105' (TYP.)	27.27	189	6.9
WINTER (57' x 67')	21.83	145	6.6
HIGH DENSITY RESIDENTIAL	1.26	38	30.0
SUBTOTAL	130.96	743	-
PARKS, OPEN SPACE, & PRESERVE			
PARK	23.35	-	-
OPEN SPACE	30.07	-	-
WETLAND PRESERVE	199.48	-	-
MAJOR RIGHT-OF-WAY	18.10	-	-
TOTAL	530.10	1,690	-

Exhibit 4: Public + Private Neighborhoods



2 Regulatory Framework

2.1 RELATIONSHIP TO EXISTING CITY DOCUMENTS

The Ranch Special Planning Area (TRSPA) Handbook, and the subsequent Development Agreement, work together to insure a high-quality cohesive design that implements the vision for The Ranch. By virtue of the adoption of this Handbook by ordinance, the zoning districts, development standards and guidelines provided herein shall apply. Where there is a conflict between this document and other City documents, the tentative subdivision map, the TRSPA Development Agreement, and this Handbook shall prevail.

2.2 GENERAL PLAN CONSISTENCY

As defined in the City's Zoning Code a Special Planning Area can allow for a more unique development then what would otherwise be possible under provisions of the existing zoning code; however, the SPA must be consistent with the goals, policies and objectives of the General Plan. The Ranch SPA accomplishes the following City of Rancho Cordova General Plan goals:

Goal LU.2: Establish growth patterns based on smart growth principles and the City building blocks concept.

The Ranch design was based on proven Smart Growth Principles. Smart Growth principles relevant to the project include:

- Creating a distinctive, attractive community with a strong sense of place,
- Creating walkable, close-knit neighborhoods with excellent bicycle access, and
- Fostering citizen and stakeholder participation in development decisions.

Goal LU.6: Ensure development of the Planning Areas consistent with the City's vision.

This plan area is called the "Suncreek/Preserve Planning Area" in the City's General Plan, and is slated for:

- A mix of low, medium and high-density residential uses,
- A series of walkable neighborhoods with community park,
- A commercial village development on the south intersection of Chrysanthy Boulevard and Rancho Cordova Parkway,
- Wetland preservation, and
- Connection to the City's open space and trail system.

This Handbook implements each element discussed in the General Plan for this Suncreek/Preserve Planning Area.

Goal UD.1: Development in keeping with the building block concepts of neighborhoods, villages, and districts.

The Ranch uses these "building blocks" to create a small-scale city that provides:

- A mix of uses,
- Flexible retail development,
- Compact design which preserves sensitive wetlands,
- A market-rate neighborhood, and
- The City's first active-adult neighborhood.

These "building blocks" are all cohesively designed with a unique street scene, prominent monumentation to mark arrival, and an interesting architectural palette to create continuity across varied and diverse housing types.

Goal UD.3: Create unique project identities that contribute to the overall character of the district and City.

The Ranch proposes the City's first active-adult neighborhood which will be cohesively designed to blend with the traditional, market-rate neighborhood.

Goal ED.2: Encourage expansion of retail and services to meet local and regional demands and generate tax revenues for the City.

The commercial village is envisioned to provide neighborhood-serving retail and higher density homes, placing residents in walking distance to services and transit.

Goal H.1: Balance Employment and Housing

The village center concept places residents in walking and biking distance to retail and services. Ultimately creating a balance of employment opportunities in close proximity to housing.

Goal H.3: Encourage Housing Opportunities

The design of the community allows for a range of densities, including low, medium and high density residential, and a variety of housing types including:

- Single-family detached and attached,
- Front- and alley-loaded homes,
- Small-lot and clustered homes, and
- Multi-family attached homes.

What's more, The Ranch offers both a market-rate neighborhood and the City's first active-adult neighborhood, expanding the housing choices offered within the City of Rancho Cordova.

The Ranch has an Affordable Housing Plan that will provide housing opportunities for all economic segments of the community through an Affordable Housing In-lieu Fee and identify land for the City of Rancho Cordova's Regional Housing Needs Allocation.

Goal C.1: Develop a roadway system that accommodates future land uses at the City's desired level of service, provides multiple options for travel routes, protects residential areas from excessive traffic, coexists with other travel modes, and contributes to the quality of the City's residential, commercial, office, and industrial areas.

The extension of Chrysanthy Boulevard to the project's eastern boundary will begin to complete the City's planned roadway network by providing connection from Sunrise Boulevard toward Grant Line Road.

Goal C.2: Establish an extensive, complete, smooth, interconnected, and continuous pedestrian and bicycle network that is a safe and attractive option for local or regional trips or recreation and that connects to the City's neighborhoods, parks and schools, employment areas, and retail centers.

Streets provide sidewalks and large shade trees to create a pedestrian-friendly street scene. Traffic-calming features included in the circulation system include narrower streets, limited single-loaded streets, parking on both sides of the street, posted speed limit signs, planter strips with street trees, bulb-outs, and horizontal shifts (lane centerline that curves or shifts), and intersection traffic calming features, including pedestrian push-buttons at three intersections, marked crosswalks, count-down signal timers where appropriate, curb extensions, channelization islands, median islands, and tight corner radii. Off-street trails connect neighborhoods to parks, open space and the commercial center. Details are shown on the Pedestrian Crossing and Trail Exhibit 30.

Goal C.3: Establish a viable transit system that connects all parts of the City and links with regional destinations.

The Ranch provides for multi-model transportation choices. A future transit stop, located at Rancho Cordova Parkway and Chrysanthy Boulevard, will provide public transit opportunities.

Goal OSPT.1: Create a premier system of public parks and recreation programs that meet the needs of all residents.

A community park is provided in The Ranch's traditional market-rate neighborhoods. The Cordova Recreation and Park District's Preliminary District-wide Facilities Distribution Plan anticipates the park program to include two regulation-sized soccer fields, public restrooms, and other facilities typical to community parks such as children's play areas, picnic shelters and sport courts. The community park's programming will be adjusted by Cordova Recreation and Park District as needed to meet current trends and

community needs when the design for the community park commences. For the active adult portion of the project, the plan provides a truly premier system of recreational programs including a clubhouse, pool, various ball courts, and community garden for the enjoyment of its residents.

Goal OSPT.2: Establish a system of open space areas that connect all parts of the community and provide opportunities for passive and neighborhood-based recreation.

The Ranch will dedicate approximately 32.53 acres of open space to the city. This will include a network of open space corridors such as greenway, trails, nodes, green infrastructure, paseos and small open space areas that will be provided throughout the community. There will be numerous trailheads and access points that provide connections from the residential neighborhoods to this open space system. The Ranch has strategically located public parks and open space adjacent to mitigation lands to create a greater sense of open space and to take advantage of trail connections.

Goal OSPT.3: Create a system of pedestrian and bicycle trails that maximize usage while providing places for walking and bicycling without conflicts with motor vehicles.

Walking and biking opportunities is a focus for The Ranch Land Use Plan. Streets provide sidewalks and large shade trees to create a pedestrian-friendly street scene. Off-street multi-use trails connect neighborhoods to parks, open space and the commercial center.

Goal ISF.2: Ensure the development of quality infrastructure to meet community needs at the time they are needed.

Infrastructure improvements will be phased to meet the needs of the community as it develops.

Goal NR.2: Preserve the City's rich and diverse natural wetlands.

The Ranch preserves over 200 acres of on-site wetlands. Off-street trails are provided along the preserved wetland, consistent with the South Sacramento Habitat Conservation Plan. The trails will provide opportunities for passive outlook areas, including benches and pet waste stations, at major trailhead locations.

Goal NR.3: Preserve and maintain creek corridors and wetland preserves with useable buffer zones throughout the new development areas as feasible.

The design of the community has minimized developable area in order to prioritize natural resources and included buffer zones at the edge of the development area to protect natural resources.

Goal E.1: Reduce greenhouse gas and air pollutant emissions through sustainable features that reduce energy demands, air pollutant emissions, and greenhouse gas emissions compared with conventional development.

Reduce energy demand through providing electric vehicle charging stations for at least 50% of single family residences and 5% of parking spaces within the commercial, parks and recreation, and multi-family land uses, planting at least 2,240 trees, installing energy-efficient outdoor lighting, energy-efficient appliances, low-flow appliances, and water-efficient irrigation systems, reducing turf areas to 70% less than maximum allowed, meeting at 95% of energy demand through renewable energy.

2.3 SPECIAL PLANNING AREA ADMINISTRATION

This Handbook is the culmination of intensive project-specific planning. Provided in this Handbook are a set of development standards and guidelines which, once approved, will set The Ranch apart from other communities.

Although this handbook will grant approval for those items described and illustrated herein, The Ranch SPA is subject to the City of Rancho Cordova's design review process. Design review is a subject to the City of Rancho Cordova Municipal Code, Chapter 23.141, Major Design Review. Once the Design Review is approved by the City Council, the approvals are vested for 10 years from the date of the approval.

3 Special Planning Area Elements

3.1 LAND USE DESIGNATIONS

The Ranch SPA Land Use Designations are consistent with the City's General Plan (Exhibit 5):

Low Density Residential (LDR) 2.1 – 6.0 du/ac

The Single-Family Residential Land Use Designation is generally characterized by single-family detached residential lots in a variety of lot sizes and configurations. Within the TRSPA this land use designation is used for the single-family conventional residential lot sizes of 60'x105'. Other lot sizes and configurations meeting the specified density range are possible and are permitted.

Medium Density Residential (MDR) 6.1 – 18.0 du/ac

The Medium Density Residential Land Use Designation is generally characterized by small lot single-family detached or single-family attached products including condominium and townhome type development. Within the TRSPA this land use designation is used for the small lot single-family residential at various lot sizes and configurations including but not limited to and 50'x105' and 45'x105' conventional lots, 45'x85' conventional lots, 35'x78' conventional lots, 30'x78.5' alley-loaded lots and 4-pack Cluster lots. Other lot sizes and configurations meeting the specified density range are possible and are permitted. A lot may vary in the area by ±10% and still be considered consistent with the lot type per Exhibit 3.

High Density Residential (HDR) 27.0 – 50.0 du/ac

The High-Density Residential Land Use Designation is generally characterized by larger multi-family housing complexes, like apartments, or other multi-family attached condominium products. Within the TRSPA this land use designation has a maximum density of 50 dwelling units per acre. Other types and configurations meeting the specified density range are possible and permitted.

Commercial (C)

The Commercial Land Use designation is characterized by neighborhood-serving uses, the daily shopping and service needs of residents within The Ranch Plan Area. Typical uses include retail services, including general retail, restaurants, coffee shops, offices, small to medium sized grocery stores, drug stores, and dry cleaners. This designation allows for a Floor Area Ratio (FAR) ranging from 0.25 to 1.0.

Parks/Open Space (P/OS)

The Parks/Open Space Land Use Designation is generally characterized by parks and other public facilities owned and operated by the Cordova Recreation Park District, City of Ranch Cordova, and HOA. See page 71, Exhibit 33: Overall Parks + Open Space System for a detailed map. Within the TRSPA this land use is used for the parks, open space along the power line corridor.

Natural Resources (NR)

This land use is generally characterized by lands set aside as natural habitat to protect natural and/or protected resources. Within the TRSPA this land use designation is used for the wetland preserve, associated development buffer zone and public trails.

3.2 ZONING + PERMITTED LAND USES

The Ranch is zoned SPA (Exhibit 6) and is subject to development according to the text and exhibits contained herein, as well as subject to provisions as set forth by the project's Development Agreement. The standards and permitted uses provided in this document are intended to supplement the City of Rancho Cordova Zoning Code. As a SPA, this handbook establishes unique and specific standards to create design flexibility in achieving project goals. Where these standards are silent or unspecified, the City of Rancho Cordova Zoning Code shall apply.

Permitted Land Uses

Allowed uses, and corresponding permit requirements, for all residential zoning districts in the TRSPA shall be consistent with the City's Zoning Code. Ranch SPA zone characteristics, intensity of uses, and their attributes are located in section 3.5. This is a large and medium density residential district, allowing development of 4-10 dwelling units per acre. Table 2, to follow, identifies allowed uses within the Commercial District.

Exhibit 5: General Plan Land Use Map

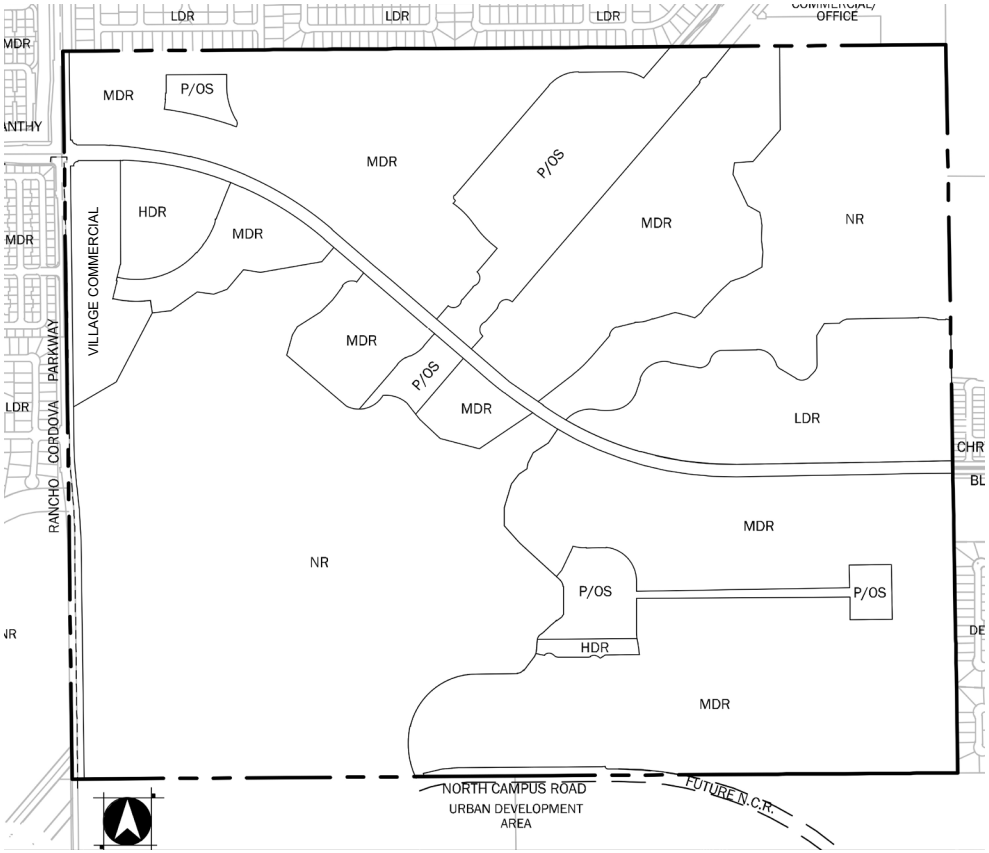


Exhibit 6: Zoning Map

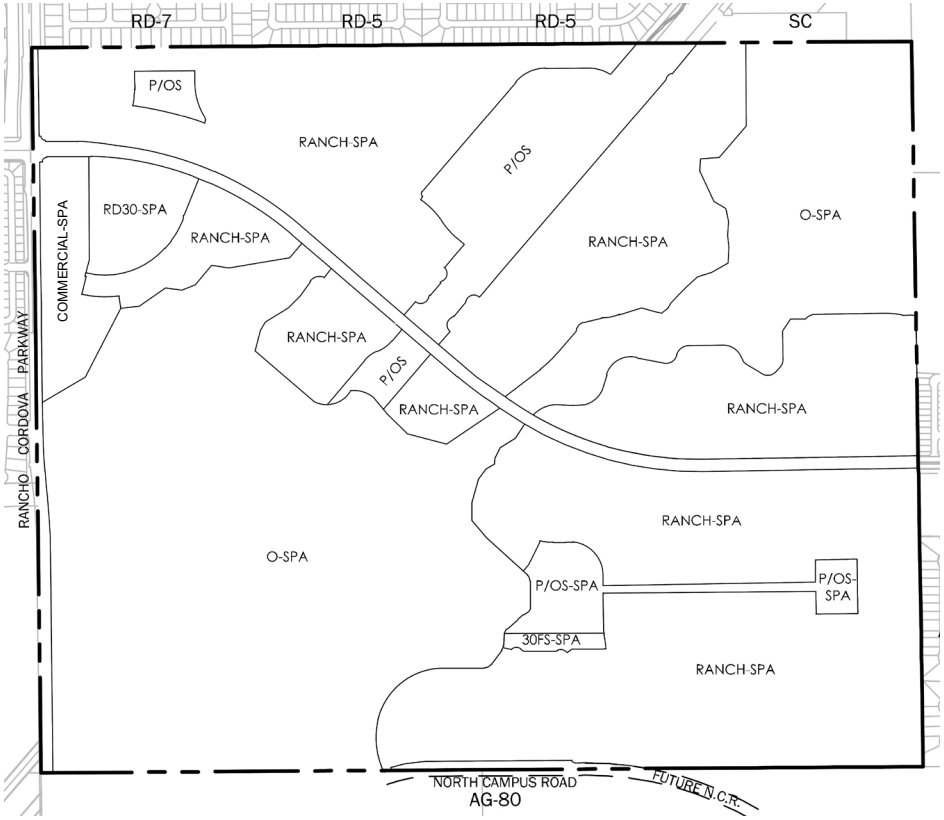


Table 2: Permitted Uses for Commercial District[1]

RECREATION, EDUCATION, AND PUBLIC ASSEMBLY USES	
Clubs, Lodges, and Private Meeting Halls	P
Indoor Amusement/Entertainment Facility	P
Indoor Fitness and Sports Facility	P
Libraries and Museums	P
Public Safety Facility	P
Religious Institutions	P
Schools, Private and Special/Studios	P
Theaters and Auditoriums	P
UTILITY, TRANSPORTATION, AND COMMUNICATION USE LISTINGS	
Park and Ride Facility	CUP
Telecommunication Facility	CUP
Utility Facilities and Infrastructure	CUP
RETAIL, SERVICE, AND OFFICE USE LISTINGS	
Alcoholic Beverage Sale[2]	CUP
Animal Sales and Grooming	P
Art, Antique, Collectable	P
Artisan Shops	P
Banks and Financial Services	P
Brew Pub	P
Business Support Services	P
Child Day Care Facility	P
Convenience Stores	CUP
Furniture, Furnishings, and Appliance Stores	P
Garden Center/Plant Nursery	P
Grocery Stores/Supermarket	P
Home Improvement Supplies	P
Maintenance and Repair, Small Equipment	P
Medical Services, General	P
Medical Services, Extended Care	P
Neighborhood Market	P
Offices, Business and Professional	P
Offices, Accessory	P
Personal Services	P
Restaurant	P
Retail, Accessory	P
Retail, General	P
Veterinary Facility	P
RESIDENTIAL	
Caretaker Housing	P
Dwelling, Multifamily	P
Live-Work Facility	P
AUTOMOBILE AND VEHICLE USES	
Auto Parts Sales	P
Car Washing	CUP
Detailing/Waterless Car Wash	CUP
Service Stations	CUP
INDUSTRIAL, MANUFACTURING, AND PROCESSING USES	
Brewery, Winery, Distillery	P
Printing and Publishing	P

1. Outdoor storage shall comply with Chapter 23.728 and Chapter 23.731 for standards related to the outdoor storage and screening.
2. On site consumption is permitted as an incidental use to a permitted primary use.

3.3 THE RANCH NEIGHBORHOODS

As discussed in the introduction, The Ranch Land Use Plan is divided into three distinct neighborhoods that are generally separated by Chrysanthy Boulevard and wetland preserve. Each neighborhood is defined by its location and relationship to adjacent park, open space or wetland preserve. To follow is a detailed discussion of each neighborhood.

3.3.1 The Gateway Neighborhood

The Gateway Neighborhood creates a public front door to The Ranch Plan Area by forming a commercial edge along Rancho Cordova Parkway. The neighborhood provides local-serving retail opportunities next to higher-density residential uses as well as a small-lot single-family residential village on its eastern boundary. The internal street network of The Gateway Neighborhood is well connected, providing on- and off-street connection to trails along the Wetland Preserve. This neighborhood provides amenities and commercial uses to both the surrounding neighborhoods and community at large.

Also located within this neighborhood is a large detention/water quality basin that will be designed to incorporate trails

The Gateway Neighborhood is generally bound on the north by Chrysanthy Boulevard, on the east by the open space trail along the Wetland Preserve, on the south by the Wetland Preserve and on the west by Rancho Cordova Parkway.

Exhibit 7: The Gateway Neighborhood Map

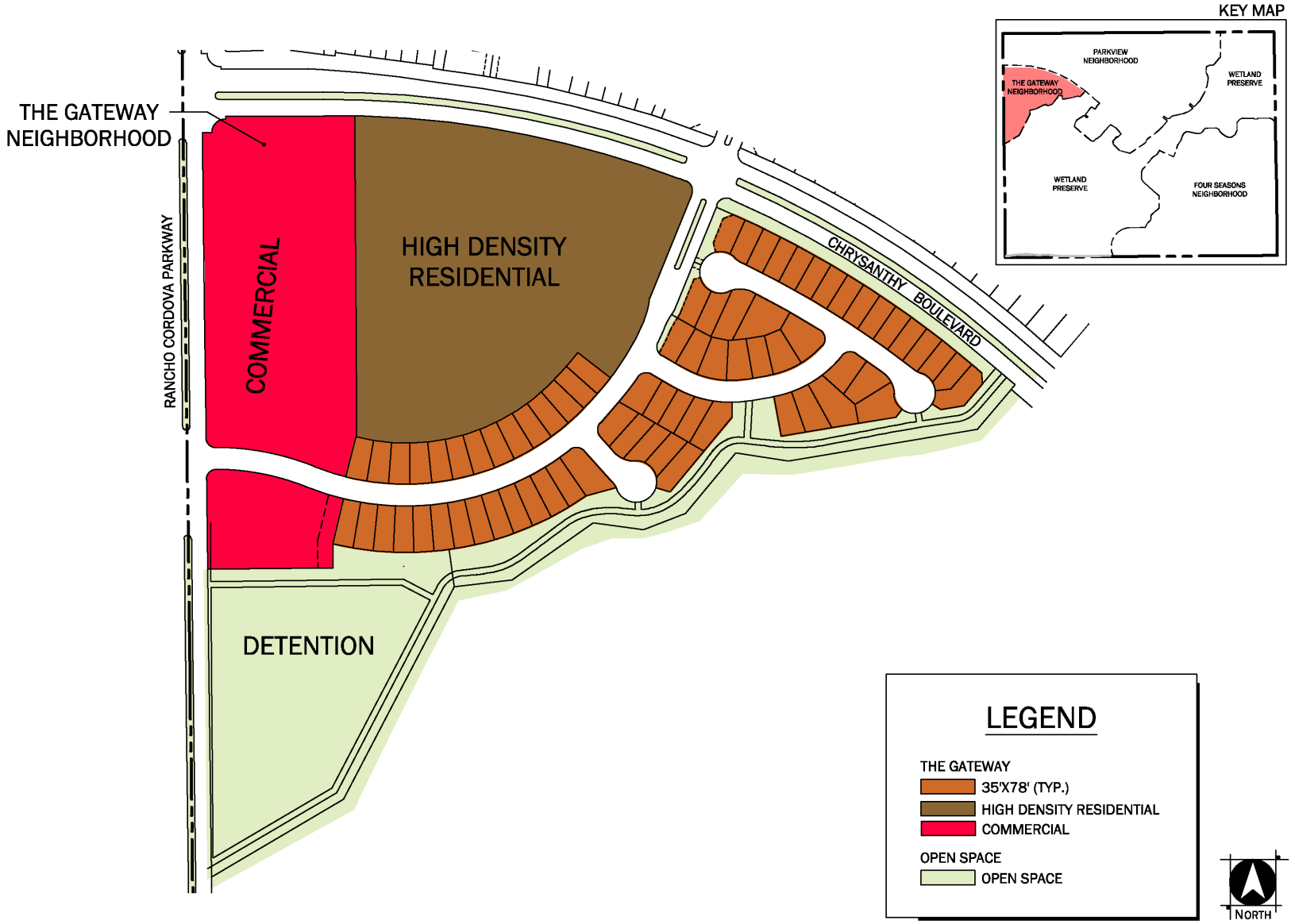


Exhibit 8: The Gateway Neighborhood Conceptual Site Plan

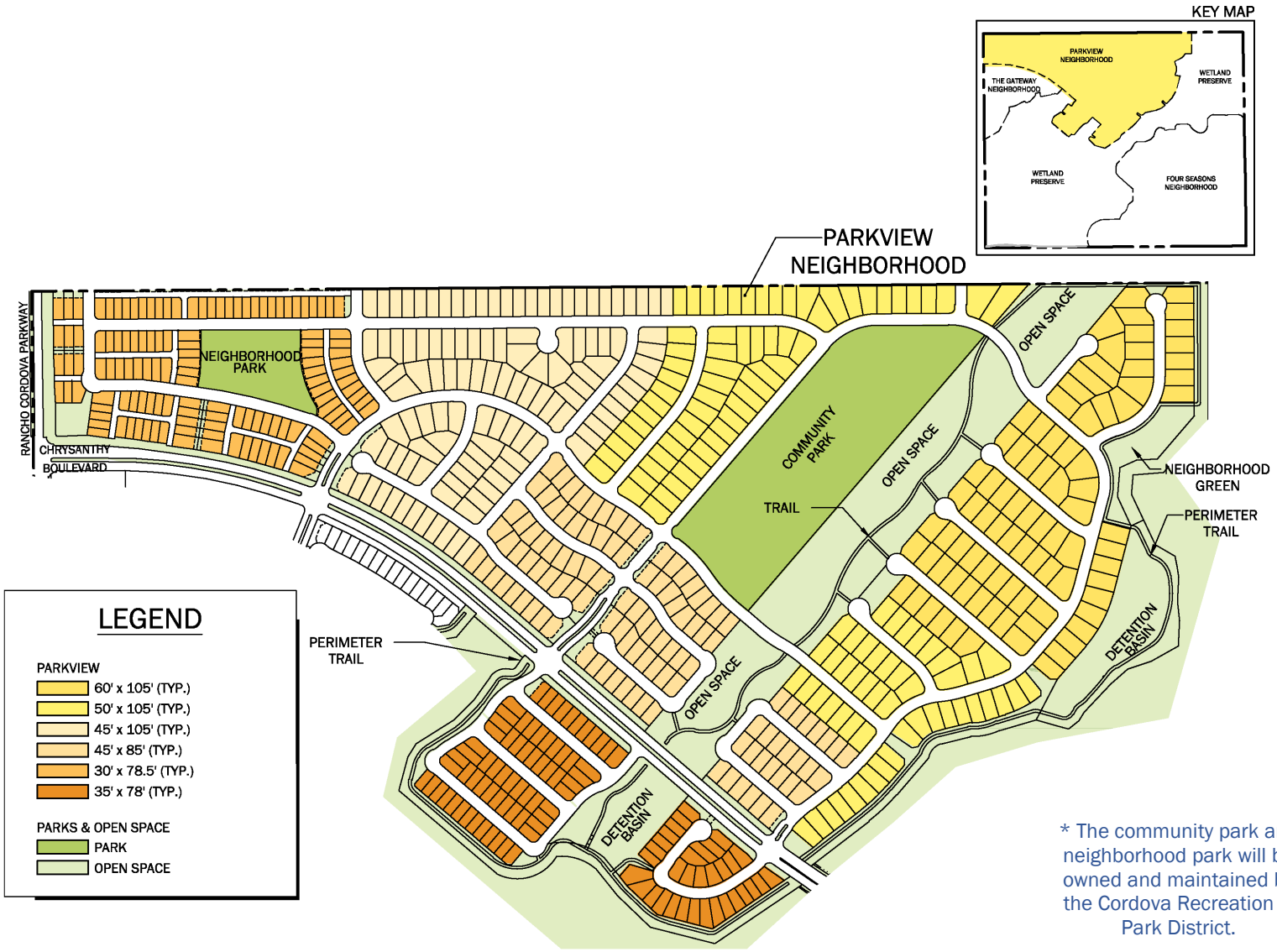
Note: Conceptual site plan only. Layout is subject to change.

3.3.2 Parkview Neighborhood

Parkview is home to a large, centrally located community park surrounded by single-family residential at various lot sizes and configurations. The neighborhood park is planned to provide recreational opportunities to the surrounding villages and may include play structures, sport courts, and shade structures. The power line corridor bisects the neighborhood, offering a parkway of passive recreational uses and a continuous off-street trail from the northern edge of the plan area to the wetland preserve trail south of Chrysanthy Boulevard.

Parkview is generally bound on the north by the project boundary and a partially built single-family residential neighborhood, on the east by the wetland preserve, on the south by Chrysanthy Boulevard and the wetland preserve and on the west by Rancho Cordova Parkway.

Exhibit 9: Parkview Neighborhood Map



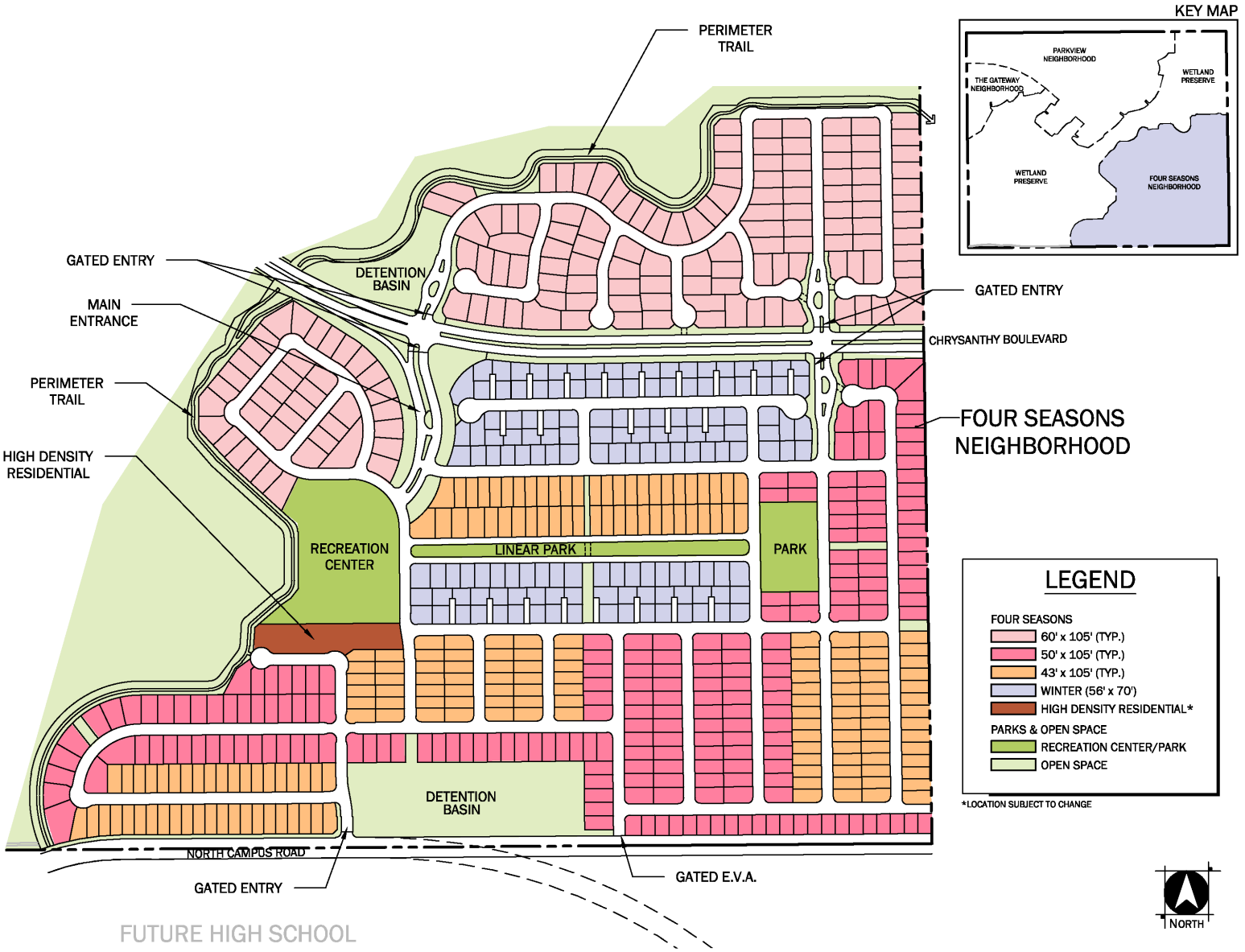
* The community park and neighborhood park will be owned and maintained by the Cordova Recreation & Park District.

3.3.3 Four Seasons Neighborhood

The Four Seasons Neighborhood is the first active-adult community within the City of Rancho Cordova. Envisioned as a gated community, this neighborhood contains four single family residential lot sizes and product types organized around a suite of private recreational amenities: a clubhouse, linear park, community and rose garden, planned for connectivity. High density units (38-unit maximum) are permitted within the recreation center parcel, providing rental opportunities with the active-adult community. A multi-use trail is also provided along the wetland preserve which will provide off-street pedestrian and bicycle connection between the southern and northern portions of the neighborhood.

The Four Seasons Neighborhood is generally bound on the north by the wetland preserve, on the east by the project boundary and future single-family residential uses, on the south by the project boundary and the approved Suncreek Specific Plan Area (including a high school and regional park) and east by the wetland preserve.

Exhibit 10: Four Seasons Neighborhood Map



3.4 ARCHITECTURAL STYLES

The Ranch allows for a wide variety of architectural styles throughout each of the residential and non-residential neighborhoods. To follow are illustrations and graphics of the architectural styles. These representations are not meant to be descriptive but are meant to demonstrate typical examples of the variety of footprints and massing, elevations, and possible design elements. Implementation of the architecture should always be of quality materials and finishes.

Other architectural styles not mentioned in the following pages are allowed but will be subject to the city's design review approval.

3.4.1 Market Rate Single Family Residential

An array of architecture, blending historic styles with modernized designs and amenities will be carefully employed throughout each of the neighborhoods. Six architectural styles are proposed throughout the single-family neighborhoods, developing a dynamic and active streetscape.

Spanish Colonial

Informal, colorful, articulated

DESIGN CHARACTERISTICS

- Half round arches
- Low pitch gables with occasional hip roof accents
- Wrought iron accents, gable vents, plank shutters
- S-Tile roof
- Short gable eaves, with 12” minimum hip eaves
- Windows with large grids
- Occasional deeply recessed windows
- Occasional half round or oculus accent windows
- Stucco siding and detailing

Craftsman

Informal, hand-crafted, varied materials.

DESIGN CHARACTERISTICS

- Large front porches with tapered or multi-post columns
- Low pitch gables, flat concrete or comp roof tiles
- Mostly stucco siding with board and batten, lap, or shingle siding accents, especially under gables
- Stone and brick accents at column bases
- Single hung windows with grids on upper half
- Deep gable eaves with brackets (front only)
- No shutters

Tuscan

Rustic elegance, "built-over time" look, varied materials

DESIGN CHARACTERISTICS

- Low-pitched hip or gable roofs, S-tile
- Exposed timber truss tails, dentils and/or corbels
- Half round archways
- Stucco siding
- Stone masonry or brick accent siding
- Decorative shutters
- Accent wrought iron
- Windows with large grids
- Heavy lintels
- Rustic shutters used sparingly

Farmhouse

Semi-formal, repetition of materials, simple lines

DESIGN CHARACTERISTICS

- Large front porches, occasionally with metal accent roof
- Wood post columns with bracket and corbel detailing
- Combination of gable and shed roofs, medium pitch main gable, steeply pitched projecting gables
- Flat concrete or comp roof tiles
- Board and batten or horizontal siding on front, stucco on sides and rear (where not visible)
- Brick veneer accents
- Windows with small grids
- No shutters

French Country

Informal, interesting-varied roof lines, eye-catching details

DESIGN CHARACTERISTICS

- Prominent and steep projecting gables, main gable or hip roof
- Flat concrete or comp roof tiles
- Short eaves at gables, with deep eaves at shed roofs
- Flat arched exterior soffits
- Mixing of siding, colors and textures
- Decorative shutters
- Stucco siding with large areas of stone accent siding
- Windows with small grids

Modern/Contemporary

Clean lines, unconventional massing and window placement

DESIGN CHARACTERISTICS

- Low pitched or shed roofs with flat concrete tile or metal seam roofs
- Deep eaves with clean simple lines and masses
- Horizontal siding accents
- Asymmetrical and overlapping soffits and window sills
- Stucco siding
- Stacked stone masonry accents
- Windows with no grids, often positioned unconventionally such as at corners
- No shutters

3.4.2 Active Adult Single Family Residential

Similar to the market rate neighborhood, the Active Adult neighborhood will also provide an array of architecture, blending historic styles with modernized designs and amenities. Five architectural styles are proposed throughout the single-family neighborhoods, developing a dynamic and active streetscape. All homes in the active-adult neighborhood area designed as single-story buildings to cater to this specific market segment.

Spanish Colonial

Informal, colorful, articulated

DESIGN CHARACTERISTICS

- Half round arches
- Low pitch gables with occasional hip roof accents
- Wrought iron accents, gable vents, plank shutters
- S-Tile roof
- Short gable eaves, with 12” minimum hip eaves
- Windows with large grids
- Occasional deeply recessed windowsOccasional half round or oculus accent windows
- Stucco siding and detailing

Farmhouse

Semi-formal, repetition of materials, simple lines

DESIGN CHARACTERISTICS

- Medium pitch gables utilizing either flat concrete or comp tile roof
- Large front porches occasionally with metal accent roof
- Wood post columns with bracket and corbel detailing
- Horizontal or board/batten siding on front with stucco on sides/rear (where not visible)
- Brick veneer accents
- Tall windows with small grids
- No shutters

Modern Ranch

Emphasizes horizontal lines, window massing

DESIGN CHARACTERISTICS

- Low pitched gable or shed roofs
- Wide-overhanging eaves
- Emphasis on horizontal lines with a brick veneer base
- Extensions of wall bands into the adjacent landscape areas
- Interesting window placement and sizing
- No window grids
- Stucco siding with various accent siding treatments
- No shutters

Cottage

Informal, storybook quality

DESIGN CHARACTERISTICS

- Prominent and steep projecting gables, main gable or hip roof
- Curved pitch roof over front porch
- Flat concrete or comp roof tiles
- Short eaves at gables, with deep eaves at shed roofs
- Flat arched exterior soffits
- Mixing of siding, colors and textures
- Decorative shutters
- Stucco siding with stone accent siding
- Detailing under gables such as half-timbering
- Windows with small grids

Tuscan

Old world, "built-over time" look, varied materials

DESIGN CHARACTERISTICS

- Low-pitched hip or gable roofs, S-tile
- Exposed timber truss tails, dentils and/or corbels
- Half round archways
- Stucco siding
- Stone masonry or brick accent siding
- Decorative shutters
- Accent wrought iron
- Windows with large grids
- Heavy lintels
- Rustic shutters used sparingly

3.4.3 High Density Residential

The Multi-Family parcel may be developed in a variety of product configurations, from apartments to condominiums. Because the ultimate configuration is unknown, this SPA document provides a variety of product types with varied architectural styles. Ultimately, the High-Density Residential parcel will be subject to Design Review, as outlined in Section 2.3.

The following architectural and site guidelines will guide future development of the multi-family parcel:

Architectural + Site Design Guidelines

The architectural guidelines are crafted to create an intimate neighborhood with a strong sense of place, and a pedestrian-oriented streetscape. The following guidelines are provided to create a framework within which developers, builders and designers can have flexibility to create unique multi-family communities.

Circulation

- The circulation pattern should be designed to facilitate the smooth flow of vehicular traffic and internal pedestrian activity.
- The circulation pattern and parking should be designed to maximize conflict with adjacent uses and limit the maximum extent practicable.
- Provide internal pedestrian paths of travel between parking areas and dwellings to avoid pedestrian and vehicle conflicts.

Building Placement + Orientation

- Variable building orientations are encouraged along the streets to create visual diversity and interesting streetscapes.
- Provide direct connections from individual and common entries to the public sidewalk system.
- The fronts of buildings and individual units should face and provide access to the public street.
- All trash, recycling, and green waste containers should be screened from view of public streets.
- All mechanical equipment (HVAC) should be screened from view of public streets.
- Garages, carports and surface parking should be limited from view along public streets. If garages or carports are placed along public streets, a landscape buffer of 10’ wide is recommended.
- Garages and carports should be designed to complement the project architecture in terms of design, materials and color.
- Surface parking areas should be broken up into smaller parking areas to provide parking in close proximity to dwellings.

Public Spaces + Pedestrian Amenities

- Where feasible, multi-family developments should include plazas, courtyards, tot-lots or other properly scaled features where residents can gather. Public spaces should be located for easy access by residents.
- Picnic areas, including picnic tables and barbeques, should be provided as an amenity to the community, where feasible.
- Landscaping of outdoor areas should be visually stimulating, with both softscape and hardscape elements to help site identification and create an inviting build environment. Outdoor furniture, such as benches, lamps, and landscape planters should be integrated into the overall project.
- Special attention should be paid to the design of major corners.

Massing, Scale + Form

- All visible elevations shall be made interesting by means of articulation of facades, varied roof lines,

window placement and shape, and variety in exterior colors, finishes, and detailing.

- Buildings shall be designed with different building setbacks or façade variations to avoid the creation of a monotonous streetscape.
- Roof lines may be made interesting by use of gables, hips, dormers, and roof planes that create variations in planes.
- Use of roof overhangs, porches, balconies, trellises, patios, and low walls are encouraged to add interest to the streetscape.

Style + Design

- Roof pitch, elevation styles, and materials should be consistent with the architectural style of the building.
- Use of quality materials such as stucco, brick, stone, and wood are recommended.
- Accent materials may include stone veneer, painted wood trim, and shutters.
- Roofing material shall be consistent with the architectural style of the building.
- Color selection should match the overall neighborhood design theme palette and be consistent with the building's architectural style.

Also incorporated into The Ranch is land identified for the City of Rancho Cordova reginal housing allocation. Affordable Housing Plan will provide housing opportunities for all economic segments of the community through an Affordable Housing In-lieu Fee.

3.4.4 Commercial

The architectural character of The Gateway Commercial Center employs a more contemporary style indicative of an urban retail center. Ultimately, this development will be subject to Design Review, as outlined in Section 2.3.

The following architectural and site guidelines will guide future development of the commercial parcels:

Architectural + Site Design Guidelines

The architectural guidelines are crafted to provide a well-designed retail environment that is compatible with adjacent uses, contributes to the character of the street, neighborhood, and community at large; and creates a vibrant, pedestrian-friendly place that serves the needs of the The Ranch residents. The following guidelines are provided to create a framework within which developers, builders and designers can have flexibility to create unique multi-family communities.

Circulation

- The circulation pattern should be designed to facilitate the smooth flow of vehicular traffic and internal pedestrian activity.
- Provide internal pedestrian paths of travel between parking areas and shops to avoid pedestrian and vehicle conflicts.

Building Placement + Orientation

- Commercial buildings should be oriented to internal or external streets or drive aisles and pedestrian-friendly paths of travel.
- Design and construct a primary building entrance for each building façade. If a building has frontage on more than one public street or internal drive aisle, special attention should be paid to the location of the building entrance in an effort to serve both vehicular and pedestrian users.
- Areas between public streets or internal drive aisles and commercial buildings can be used to create plazas, planter areas, bicycle parking, or other appropriate amenities.
- Building frontages should be detailed with architectural elements oriented to the “human scale” on the ground floor.
- Surface parking areas should be located and designed to minimize potential circulation conflicts.
- Loading, delivery and mechanical equipment (HVAC) areas should be located and designed to minimize their visibility, circulation conflicts, and adverse noise and light impacts. These areas can be screened with portions of buildings, wing walls, freestanding walls, and/or landscaping.

Public Spaces + Pedestrian Amenities

- Where feasible, commercial developments should include plazas, courtyards, greens or other properly scaled and located public places where people can gather. Public spaces should be integrated, or oriented, toward commercial uses.
- Uses such as restaurants or coffee shops are encouraged to provide outdoor space for seating and/or dining.
- Landscaping of outdoor areas should be visually stimulating, with both softscape and hardscape elements to help site identification and create an inviting build environment. Street furniture, such as benches, lamps, and landscape planters should be integrated into the overall project.
- Special attention should be paid to the design of major corners.
- Hardscape elements should be designed to use different materials, colors and patterns to offset the paving and to provide visual interest.

Massing, Scale + Form

- Overly long, straight and flat facades are not permitted; projects should provide wall projections, recesses or other relief at appropriate intervals along the walls of all buildings.
- Facades that face pubic streets shall provide an adequate amount of visual interest by employing arcades, display windows, entry areas, awnings, insets, canopies, wing walls, trellises or other such features.
- Roof lines may be made interesting by employing parapets to conceal flat roofs, overhang eaves, sloping roofs, multiple roof places or other such features.

Style + Design

- Break up rooflines through use of cornices, changes in parapet heights, or other techniques that create an aesthetically pleasing skyline effect.
- Use awnings, reliefs, and fenestrations to add distinction to the façade of the structure.
- Roofing materials should be unique, cohesive, and add character and style to the building.
- Visible building walls should provide architectural interest by varying the color, texture and/or material.
- Exterior building materials should be of highest quality, including brick, stone and/or textured concrete masonry.
- Colors should be consistent or complementary throughout the commercial development while giving distinction to individual buildings and tenants. Building trim and accents may employ brighter colors.

3.5 DEVELOPMENT STANDARDS

3.5.1 Single-Family Residential Development Standards

The Ranch Land Use Plan provides for varied single-family residential opportunities to attract a diverse population. Seven different single-family residential home-ownership opportunities are located within the Plan Area to appeal to an economically- and lifestyle-diverse community of future residents. These single-family lot sizes/product types are listed below and described in detail on the exhibits on the following pages.

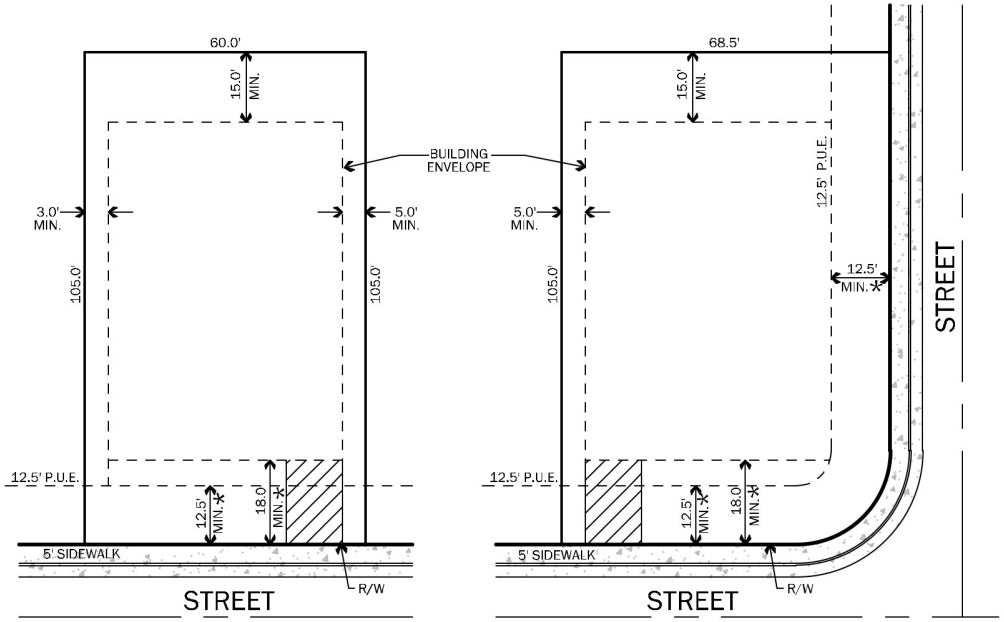
- 60'x105' Conventional Lots
- 50'x105'Conventional Lots
- 45'x105'Conventional Lots
- 43'x105'Conventional Lots
- 45'x85' Conventional Lots
- 35'x78' Conventional Lots
- 30'x78.5' Alley-Loaded Lots
- 55'X70' Conventional and I-Court Lots

RD-10 zoning is an equivalent zoning for all Villages within the Project. See Title 23 of the Zoning Code for details.

The typical Development Standards exhibits illustrated in this handbook outline the typical lot and setback requirements needed for each product type listed above. The exhibits illustrate and list particular detailed information to accommodate a particular product envisioned for the Plan Area. This information may include, but is not limited to, the following items.

- Minimum Lot Size
- Minimum Interior Lot Width
- Minimum Corner Lot Width
- Minimum Lot Depth
- Maximum Lot Coverage
- Minimum Front Yard Setback
- Minimum Garage Setback (Measured to the garage door)
- Minimum Interior Side Yard Setbacks
- Minimum Corner Side Yard Setbacks
- Minimum Rear Yard Setback
- Maximum Building Height
- Location/width of Public Utility Easement (PUE)

Exhibit 11: 60'x105' Conventional Lots
Typical Development Standards



60' X 105' (TYP.) LOT
Development Standards Table

Lot Requirements

minimum lot size	5,985 square feet
minimum interior lot width	57'
minimum elbow lot width	37'
minimum corner lot width	63'
minimum lot depth	95'

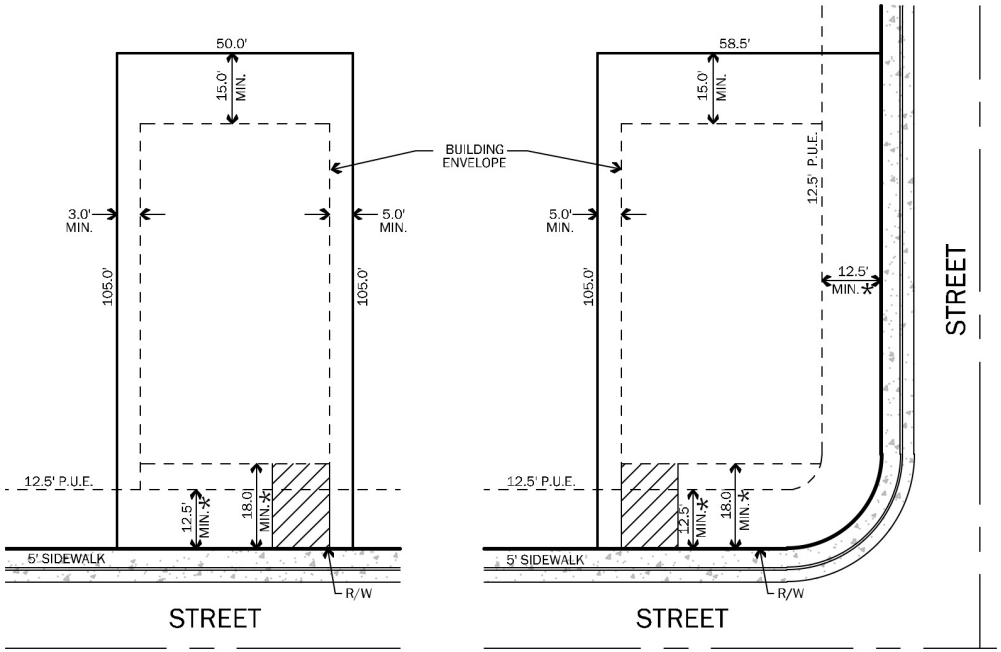
Setback Requirements

front yard	
minimum to garage door	18' *
minimum to living area/porch	12.5' *
side yard	
minimum interior	3'
minimum garage side	5'
minimum street side	12.5' *
minimum rear yard	15'**
lot type	conventional
max. coverage	75%
max. building height	37'

notes:

* = measured from back of walk
** allowing 10' encroachment for cover patio

Exhibit 12: 50'x105' Conventional Lots
Typical Development Standards



50' X 105' (TYP.) LOT
Development Standards Table

Lot Requirements

minimum lot size	5,000 square feet
minimum interior lot width	50'
minimum elbow lot width	34'
minimum corner lot width	58'
minimum lot depth	95'

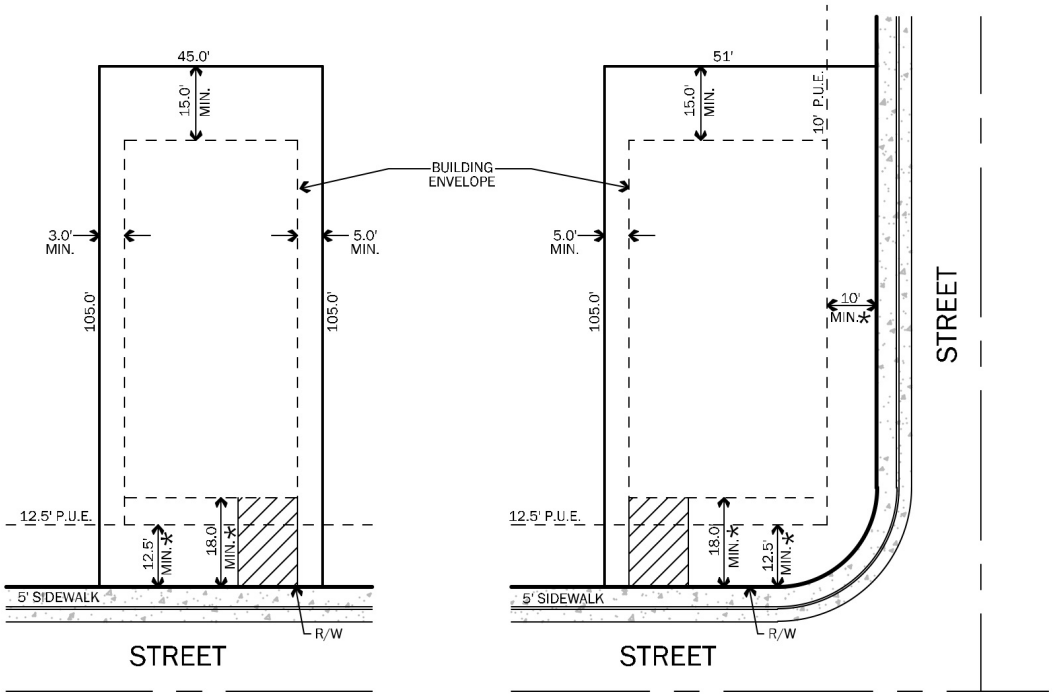
Setback Requirements

front yard	
minimum to garage door	18' *
minimum to living area/porch	12.5' *
side yard	
minimum interior	3'
minimum garage	5'
minimum street side	12.5' *
minimum rear yard	15'**
lot type	conventional
max. coverage	75%
max. building height	37'

notes:

* = measured from back of walk
** allowing 10' encroachment for cover patio

Exhibit 13: 45'x105' Conventional Lots
Typical Development Standards



45' X 105' (TYP.) LOT
Development Standards Table

Lot Requirements

minimum lot size	4,515 square feet
minimum interior lot width	43'
minimum elbow lot width	30'
minimum corner lot width	49'
minimum lot depth	95'

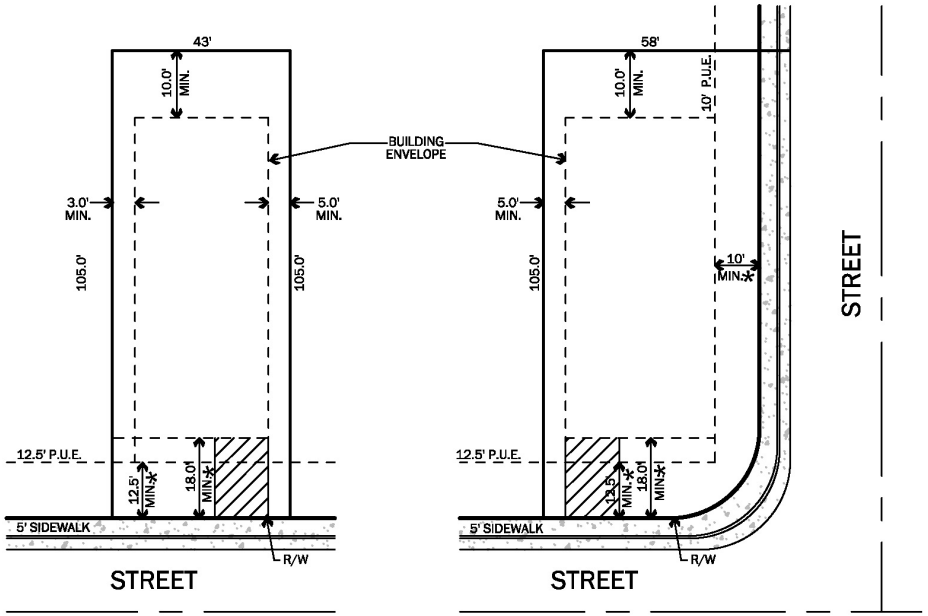
Setback Requirements

front yard	
minimum to garage door	18' *
minimum to living area/porch	12.5' *
side yard	
minimum interior	3'
minimum garage side	5'
minimum street side	10' *
minimum rear yard	15'**
lot type	conventional
max. coverage	75%
max. building height	37'

notes:

* = measured from back of walk
** allowing 10' encroachment for cover patio

Exhibit 14: 43’ x 105’ Conventional Lots
Typical Development Standards



43' X 105' (TYP.) LOT
Development Standards Table

Lot Requirements

minimum lot size	4,200 square feet
minimum interior lot width	40'
minimum elbow lot width	29'
minimum corner lot width	58'
minimum lot depth	95'

Setback Requirements

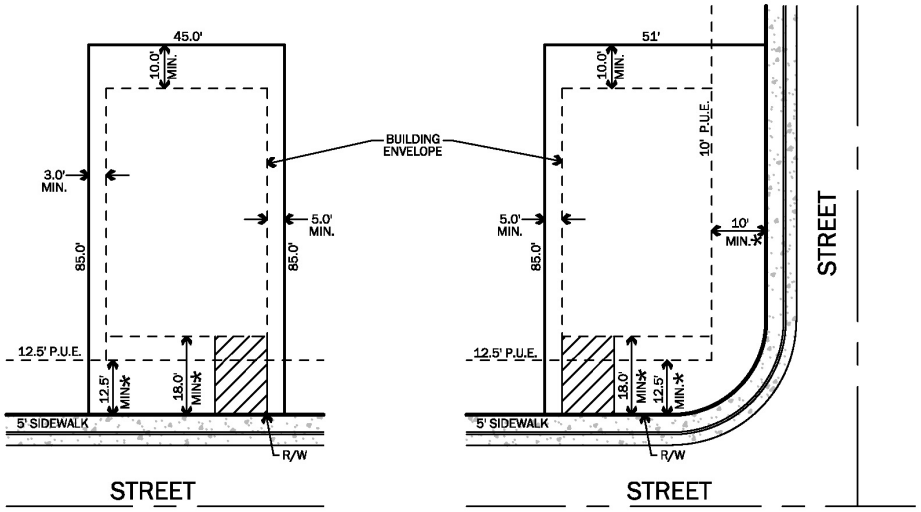
front yard	
minimum to garage door	18' *
minimum to living area/porch	12.5' *
side yard	
minimum interior	3'
minimum garage side	5'
minimum street side	10' *
minimum rear yard	10'**
lot type	conventional
max. coverage	75%
max. building height	37'

horizontal garage dominant elevation is permitted with garage door design elements

notes:

* = measured from back of walk
** allowing 5' encroachment for cover patio

Exhibit 15: 45'x 85' Conventional Lots
Typical Development Standard



45' X 85' (TYP.) LOT
Development Standards Table

Lot Requirements

minimum lot size	3,483 square feet
minimum interior lot width	43'
minimum elbow lot width	36'
minimum corner lot width	51'
minimum lot depth	75'

Setback Requirements

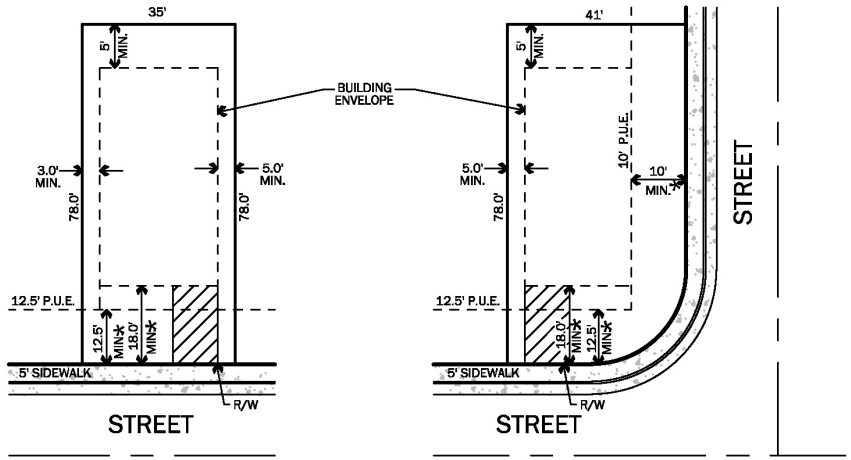
front yard	
minimum to garage door	18' *
minimum to living area/porch	12.5'*
side yard	
minimum interior	3'
minimum garage side	5'
minimum street side	10'
minimum rear yard	10'**
lot type	small lot
max. coverage	75%
max. building height	37'

horizontal garage dominant elevation is permitted with garage door design elements

notes:

* = measured from back of walk
** allowing 5' encroachment for cover patio

Exhibit 16: 35'x78' Conventional Lots
Typical Development Standard



35' X 78' (TYP.) LOT
Development Standards Table

Lot Requirements	
minimum lot size	2,376 square feet
minimum interior lot width	33'
minimum elbow lot width	18'
minimum corner lot width	41'
minimum lot depth	72'

Setback Requirements	
front yard	
minimum to garage door	18' *
minimum to living area/porch	12.5' *
side yard	
minimum interior	3'
minimum garage side	5'
minimum street side	10' *
minimum rear yard	5'
lot type	small lot
max. coverage	75%
max. building height	37'

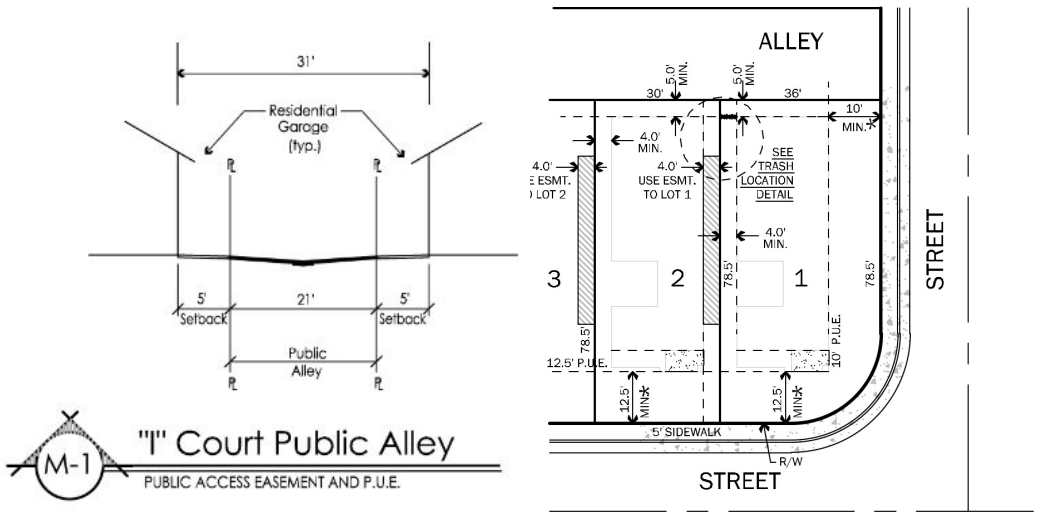
horizontal garage dominant elevation is permitted with garage door design elements

notes:

* = measured from back of walk

Exhibit 17: 30'x78.5' Conventional Lots
Typical Development Standards

Lots fronting Neigborhood Park shall have a walkway separating the uses on residential lot side with 4 foot pedestrian easement.



30' X 78.5' (TYP.) LOT
Development Standards Table

Lot Requirements

minimum lot size	2,160 square feet
minimum interior lot width	30'
minimum corner lot width	36'
minimum lot depth	72'

Setback Requirements

front yard	
minimum to living area/porch	12.5' *
side yard	
minimum interior	4'
minimum street side	10' *
garage door setback	5'
lot type	small lot
max. coverage	N/A
max. building height	37'

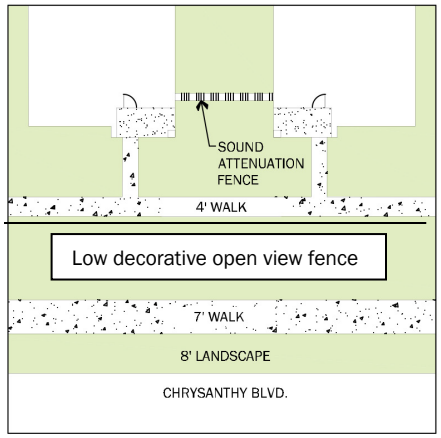
notes:

* = measured from back of walk

definitions:

USE EASEMENT :
A use easement is a legal agreement between adjoining land owners allowing the use of the neighboring property.

PLAN VIEW - VILLAGE 8
(CHRYSANTHY FRONTAGE)



TRASH LOCATION DETAIL

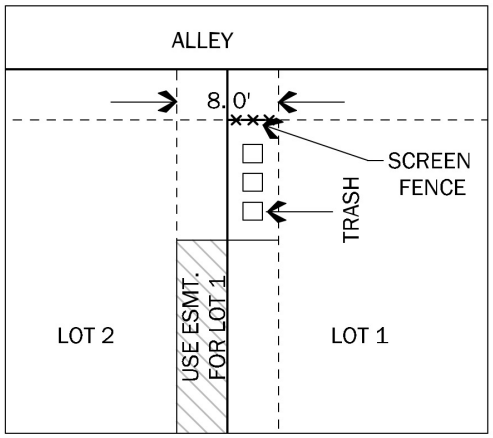
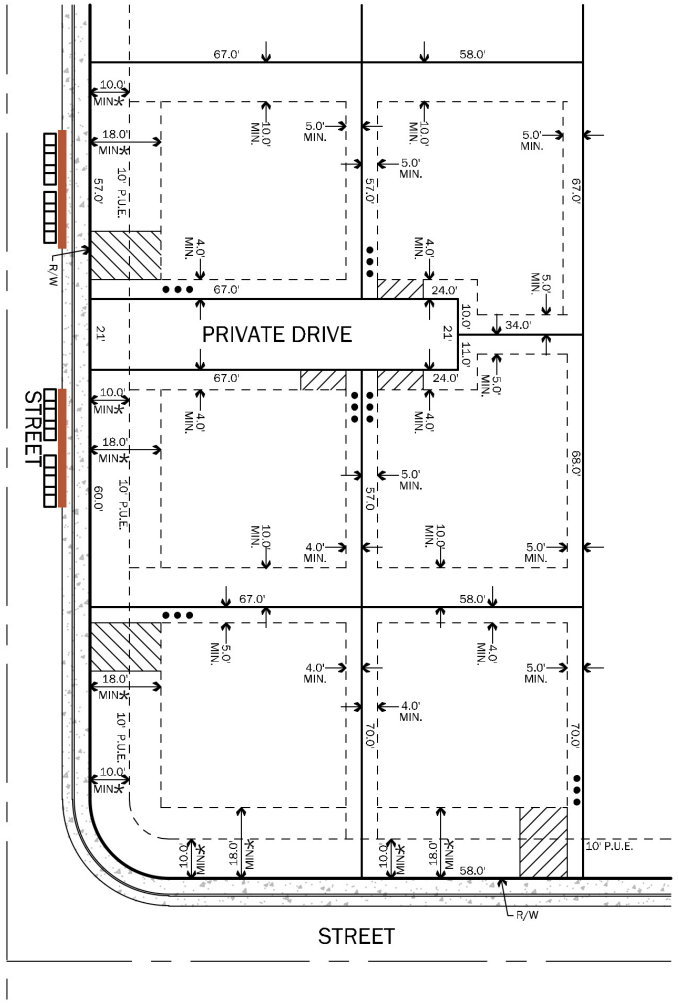


Exhibit 18: 56’ x60’ Cluster Lots (4-pack)
Typical Development Standards



57' X 67' (TYP.) LOT
Development Standards Table

Lot Requirements

Minimum Lot Size	3,300 square feet
Minimum interior Lot Width	52'
Minimum Corner Lot Width	70'
Minimum Lot Depth	66'

Setback Requirements

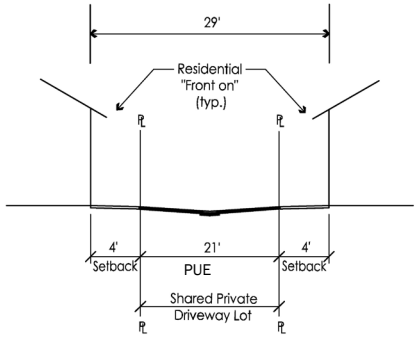
minimum from public street	
to living area/porch	10' *
to garage door	18' *
minimum from private drive	
to living area/porch	4'
to garage door	4'
side yard	
minimum interior	4'
minimum garage side	5'
minimum rear yard	4'
lot type	courtyard and small lot
max. coverage	85%
max. building height	20'

notes: * = measured from right-of-way

LEGEND

LIMITED PARKING ON TRASH COLLECTION DAYS; SIGNED NO PARKING AND HOA ENFORCED.

• TRASH CAN



M-2 "I" Court Private Drive
PRIVATE ACCESS EASEMENT AND P.U.E.

3.5.2 High Density Residential Development Standards

Within the Gateway Neighborhood, the high-density residential parcel will provide for multi-family attached uses including apartments and condominiums, lofts and other multi-story residential uses. The development standards for this neighborhood are provided in Table 3a.

Table 3a: High Density Residential Development Standards

DENSITY (du/ac)	
Minimum	27
SETBACKS	
Front	18’
Side	
To adjacent building	15’ min
Street/Corner	15’
Zero Lot Line	n/a
Rear	10’
To Alley / Access Road	5’
HEIGHT (maximum)	
Primary Structure	60’
LOT COVERAGE (maximum)	75%
COMMON OPEN SPACE* (minimum)	25%
PARKING	
Resident Parking	Zoning Ordinance
Resident Guest Parking	Zoning Ordinance

*Common open space includes all landscaped areas outside of the required landscape corridors along adjoining streets, active and passive recreation areas, other outdoor amenities, and natural open space areas. Reductions in the required open space area to a minimum of 20 percent of the gross area for exceptional architecture design may be granted by the designated approval authority.

Table 3b: Active Adult High Density Residential Development Standards

DENSITY (du/ac)	
Minimum	30
Maximum	80
SETBACKS General	
Front	12.5’
Street/Corner	15’
To adjacent building	15’ min
Rear	10’
Zero Lot Line	n/a
To Alley / Access Road	5’
HEIGHT (maximum)	
Primary Structure	60’
PARKING	
Senior Resident Parking	0.5 sp/unit
Senior Resident Guest Parking	0.1 sp/unit
COMMON OPEN SPACE* (minimum)	0%
LOT COVERAGE (maximum)	N/A

Within the Four Seasons Neighborhood, the high-density residential use will provide for multi-family senior apartments or condominiums located on the Clubhouse Parcel A. Up to 1 ac is reserved for this use. The development standards for this use is provided in Table 3.

3.5.3 Commercial Development Standards

Within the Gateway Neighborhood, the commercial parcel will provide for a range of retail and neighborhood-serving uses. The development standards for this neighborhood are provided in Table 4.

Table 4: Commercial Development Standards

FLOOR AREA RATIO (FAR)	
Minimum	0.25
Maximum	1.0
SETBACKS	
Front	
Minimum	10’
Maximum	20’
Side	
Interior	5’
Street (minimum/maximum)	0’ / 10’
Rear (minimum)	
General	5’
To Alley	5’
ACCESSORY BUILDING	
Front	30’
Side	
Interior	10’
Street	10’
Rear	5’
HEIGHT	
Minimum	n/a
Maximum	45’
LOT COVERAGE (maximum)	n/a

3.6 SUSTAINABILITY FEATURES

The Ranch has been planned designed to include sustainable amenities and features that encourage walking, biking, and transit use, reduce energy demand and water use. These features reduce greenhouse gas, air pollutant emissions, water use, and vehicle travel. The features are described below and include measures identified the Draft Environmental Impact Report prepared for The Ranch.

Walkable and Bikeable Design

The Ranch is designed with a walkable street pattern, with a ratio of approximately 144.9 intersections per square mile, multiple bicycle/ pedestrian connections, an off-street trail system, and bicycle lanes to encourage walkability. The Ranch’s pedestrian and bicycle network includes pedestrian/bicycle-only links, through push-buttons to provide safe pedestrian and bicycle crossing at major streets, a comprehensive trail system, pedestrian/bicycle-only connections between streets, sidewalks, and bicycle lanes. The Ranch includes traffic-calming street design features, such as narrower streets, limited single-loaded streets, parking on both sides of the street, posted speed limit signs, planter strips with street trees, bulb-outs, and horizontal shifts (lane centerline that curves or shifts), and intersection traffic calming features, including pedestrian push-buttons at three intersections, marked crosswalks, count-down signal timers where appropriate, curb extensions, channelization islands, median islands, and tight corner radii, on a minimum of 50% of streets.

Electric Vehicles

The Ranch supports electric vehicle use, including installation of EV charging stations throughout the site for at least 50% of single-family residences and 5% of parking spaces within the commercial, park and recreation, and multi-family land uses to reduce reliance on gasoline-fueled vehicles.

Vehicle Trip Reduction

All project components, including residential, commercial, and parks and recreation uses will join a Transportation Management Association.

Energy Use

All development will be designed to exceed the 2016 Title 24 energy use and efficiency requirements by 2 percent. All outdoor lighting will be energy-efficient (i.e., LED or better). All appliances will be energy efficient, with an EnergyStar or comparable rating.

The Ranch will focus on renewable energy use, with a minimum of 95% of electricity supplied via renewable energy through either on-site energy generation and/or a contract with SMUD.

Water Conservation

All development will install energy-efficient appliances, including low-flow bathroom and kitchen faucets, shower heads, and toilets.

The landscaping plan shall ensure a minimum of 50% of vegetation on all lots, including residential, commercial, and parks/recreation, consisting of drought-resistant trees, shrubs, grasses, and other vegetation, and shall demonstrate a reduction of outdoor water use of at least 25% compared with water use associated with the conventional landscaping that would be allowed for each lot. In addition, turf for residential uses will be at least 70% less than the maximum allowed turf area.

All landscaping and turf areas shall be irrigated by water-efficient irrigation systems that use a smart irrigation control system with automatic rain shut-off, maximum gallon per minute restriction, and WiFi connectivity to reduce water waste.

Greenhouse Gases

A minimum of 2,240 new trees will be planted throughout The Ranch to sequester greenhouse gas emissions. The majority of trees will be planted on residential lots, with tree planting also occurring on parks and recreation lots, landscaped medians, and along the trails.

The Ranch will purchase carbon offsets to reduce net project operational and amortized construction emissions to less than the Air District's adopted threshold for GHG emissions at the time of purchase.

3.7 NOISE STANDARDS

3.7.1 Construction Noise Standards

The following requirements shall be noted on all the improvements plans prior to approval by the City's Public Works Department and shall be implemented during construction activities.

- Construction activities shall adhere to the requirements of the City of Rancho Cordova Municipal Code, including the specified hours of operation for construction activities.
- Construction staging areas, including equipment staging, equipment and materials storage, and soil stockpiling for grading activities, shall be located centrally within each phase of Project development and shall be setback from residential dwellings to the maximum extent feasible to minimize construction noise impacts to existing residential uses. Construction staging areas shall be shown on grading and improvement plans.
- All construction equipment shall be fitted with factory equipped mufflers and shall be maintained in good working order.
- Any compaction required less than 26 feet from residential structures shall be accomplished by using static drum rollers which use weight instead of vibrations to achieve soil compaction. As an alternative to this requirement, pre-construction crack documentation and construction vibration monitoring could be conducted to ensure that construction vibrations do not cause damage to any adjacent structures.

3.7.2 Operational Noise Standards

T

To ensure that noise levels are reduced to less than significant within the project the follow measures are included and shall be adhered to by all components of the project:

- Residential lots along Rancho Cordova Parkway and Chrysanthy Boulevard:

Residential lots along Rancho Cordova Parkway and Chrysanthy Boulevard shall be shielded from excessive noise through a six-foot masonry wall located along the rear-yard of each residential lot that backs up to Rancho Cordova Parkway or Chrysanthy Boulevard. Along Rancho Cordova Parkway. At the terminus of each segment of the sound wall, in addition to shielding the lot line adjacent Rancho Cordova Parkway, the masonry wall shall wrap around the side yard of each residential lot for a minimum of 15 feet toward the east, with the exception of any portion of the lot that is a driveway or front yard. This requirement shall be waived or modified if the Project applicant conducts a site-specific acoustical analysis for the lots that addresses cumulative roadway noise impacts that takes into account site specific conditions (e.g., site design, location of structures, building characteristics) and noise-attenuating features and demonstrates that noise levels in the exterior activity area of the residential lots will not exceed the City's conditional noise standard shown in General Plan Table N-2.

Villages 24 and 25 (Commercial), Village 23 (Multifamily Lot), and Parks and Recreation Facilities:

Prior to approval of whichever occurs first: approval of improvement plans, site design plans, or issuance of building permits for uses located in Villages 24 and 25 (Commercial), Village 23 (Multifamily Lot), and parks and recreation facilities that include potential noise generating uses (e.g., competitive sports fields and other uses anticipated to involve amplified sound or large crowds), an acoustical analysis shall be prepared addressing the potential noise impacts associated with the specific proposed uses and site design.

The proposed land uses shall be designed so that on-site mechanical equipment (e.g., HVAC units' compressors, generators) and area-source operations (e.g., loading docks, parking lots, and recreational-use areas) are located as far as feasible from or shielded from nearby noise-sensitive land uses.

The acoustical analysis shall evaluate stationary- and mobile-source noise attributable to the proposed use or uses and impacts on nearby noise-sensitive land uses, in accordance with adopted City noise standards. For any noise impacts

identified in the acoustical analysis that would be greater than City noise standards, the Project applicant shall submit a noise reduction plan to reduce any identified impacts above adopted City noise standards to acceptable levels. The noise reduction plan shall be reviewed and approved by the City and its implementation shall be required as a condition on improvement plans and operational measures shall be included in the creeds, covenants, and restrictions (CC&Rs) or similar mechanism to ensure on-going adherence to the requirements. Feasible measures to be included in the noise reduction plan to reduce Project-related noise impacts shall include, but are not limited to, the following:

- To the extent feasible, major noise-generating commercial uses (e.g., loading docks and equipment/vehicle storage repair facilities, etc.) shall be designed and sited to shield residential land uses located or proposed to be located within 500 feet of and within the direct line of sight of these facilities by construction of a noise barrier, earthen berm, or combination of the two. To provide effectiveness, noise barriers shall be continuous or solid, with no gaps, and shall block the line of sight to windows of neighboring dwellings. (Achievable noise reductions from barriers can vary, but typically range from approximately 5 to 10 dBA, depending on construction characteristics, height, and location.) The applicant shall retain the services of a professional acoustician to determine the design and location of noise barriers to be constructed prior to City issuance of building permits or improvement plans.

- Use of "quiet pavement" (e.g., rubberized asphalt) construction methods, where appropriate to reduce vehicle noise.

- Dual-pane, noise-rated windows, mechanical air systems, exterior wall insulation, and other noise reducing building materials shall be used to address existing noise levels as well as projected noise levels associated with nearby noise-generating uses. For example, Village 23 shall be designed and planned to address future commercial uses planned for Villages 24 and 25.

- Routine testing and preventive maintenance of emergency electrical generators shall be conducted during the less sensitive daytime hours (i.e., 7 a.m. to 6 p.m.). All electrical generators shall be equipped with noise control (e.g., muffler, acoustic enclosure, etc.) devices in accordance with manufacturers' specifications.

- On-site landscape maintenance equipment shall be equipped with properly operating exhaust mufflers and engine shrouds, in accordance with manufacturers' specifications.

- For maintenance areas located within 500 feet of noise-sensitive land uses, the operation of on-site landscape maintenance equipment shall be limited to the least noise-sensitive periods of the day, between the hours of 7 a.m. and 7 p.m.

- Outdoor use of amplified sound systems within 500 feet of noise-sensitive land uses shall be permitted only between 7 a.m. and 10 p.m. Sunday through Thursday, and between 7 a.m. and 11 p.m. on Friday and Saturday and shall comply with the noise requirements of the City of Rancho Cordova Municipal Code.

3.8 CIRCULATION DESIGN STANDARDS

The design of The Ranch SPA's circulation system utilizes an efficient system of streets and pathways to serve the Plan Area. The internal street system is designed such that a 'block' or 'grid' system is achieved. Wherever possible, various pedestrian pathways are designed to provide non-vehicular transportation opportunities throughout the project site, especially within the Active Adult portion of the project. The intent of the circulation network is to create a well-

connected system of roadways and pedestrian facilities to encourage biking and walking.

3.8.1 Overall Circulation Plan

Minor arterial streets (4-lane) are the principal streets that serve through traffic in the vicinity of the Plan Area. These streets include Rancho Cordova Parkway on the sites' western boundary and Chrysanthy Boulevard that bisects the Plan Area and provides an east-west connection between Sunrise Boulevard and Grant Line Road, two major arterial streets (6-lane roadways).

Construction of the Plan Area street system, including the internal streets, will occur in a timely and coordinated manner. Street improvements will be phased according to the phasing plan and specifications contained within the TRSPA Development Agreement. The Development Agreement will define the financing and implementation of the projects phased circulation system. A total of 2.5 +/- miles of trails will be added connecting the site in the east -west and north-south direction.

The internal residential streets provide connections into and through, the TRSPA and connect residential neighborhoods with The Gateway Neighborhood, various planned park, open space facilities, and wetland features, thus allowing residents to travel within and throughout the Plan Area without traveling along the arterial roadways. Where necessary, pedestrian push buttons will be installed that will facilitate timely and safe pedestrian crossings.

The Ranch provides for non-vehicular transportation choices. A future transit stop, located at Rancho Cordova Parkway and Chrysanthy Boulevard, will provide public transit opportunities. The design of the TRSPA encourages the use of public transit by locating denser residential development close to the future transit stop, facilitating easy, walkable access.

Traffic-calming street design features, such as narrower streets, limited single-loaded streets, parking on both sides of the street, posted speed limit signs, planter strips with street trees, bulb-outs, and horizontal shifts (lane centerline that curves or shifts), and intersection traffic calming features, including pedestrian push-buttons at three intersections, marked crosswalks, count-down signal timers where appropriate, curb extensions, channelization islands, median islands, and tight corner radii, are provided on a minimum of 50% of streets.

Additionally, The Ranch SPA provides a varied network of both on- and off-street pedestrian pathways and trails allowing for safe and convenient non-vehicular travel throughout the Plan Area. All minor arterial streets have Class II bike lanes striped on the street. Large street trees are provided next to sidewalks, creating a shaded street environment for pedestrians. Pedestrian and bike trail facilities are located within the TRSPA along the Wetland Preserve as well as within the Open Space Parkway (Power Line Corridor) that facilitates a continuous off-street connection from Rancho Cordova Parkway through to eastern project boundary.

Exhibit 19: Overall Circulation Plan (Subject to change)

* General locations shown. Final location will be determined at improvement plan stage.

3.8.2 Street Sections

The Ranch SPA identifies the basic framework and hierarchy of roadways and establishes the primary circulation system that feeds, defines and connects the Plan Area. Streets within the SPA are classified based on their functional requirements and their relative importance in serving the neighborhoods and establishing the character of the project.

Minor Arterial Streets

Minor Arterial streets within the SPA include Rancho Cordova Parkway, Chrysanthy Boulevard and North Campus Road.

Exhibit 20: Rancho Cordova Parkway Minor Arterial Street Section

These streets are design for less than 32,500 average daily trips (ADT) with a speed limit of 35 to 45 mph. These 4-lane facilities are generally comprised the following components:

- 74’ right-of-way
- 14’ landscaped median and 15’ to 25’ landscape corridors
- Two travel lanes (12’ and 11’) in each direction
- 6.5’ striped bike lane (to Face of Curb)
- 3’ vertical curb & gutter with 7’ Sidewalk
- Parking is not permitted
- 10’ Left Turn Lanes (not pictured)
- Attached sidewalk along preserve boundaries

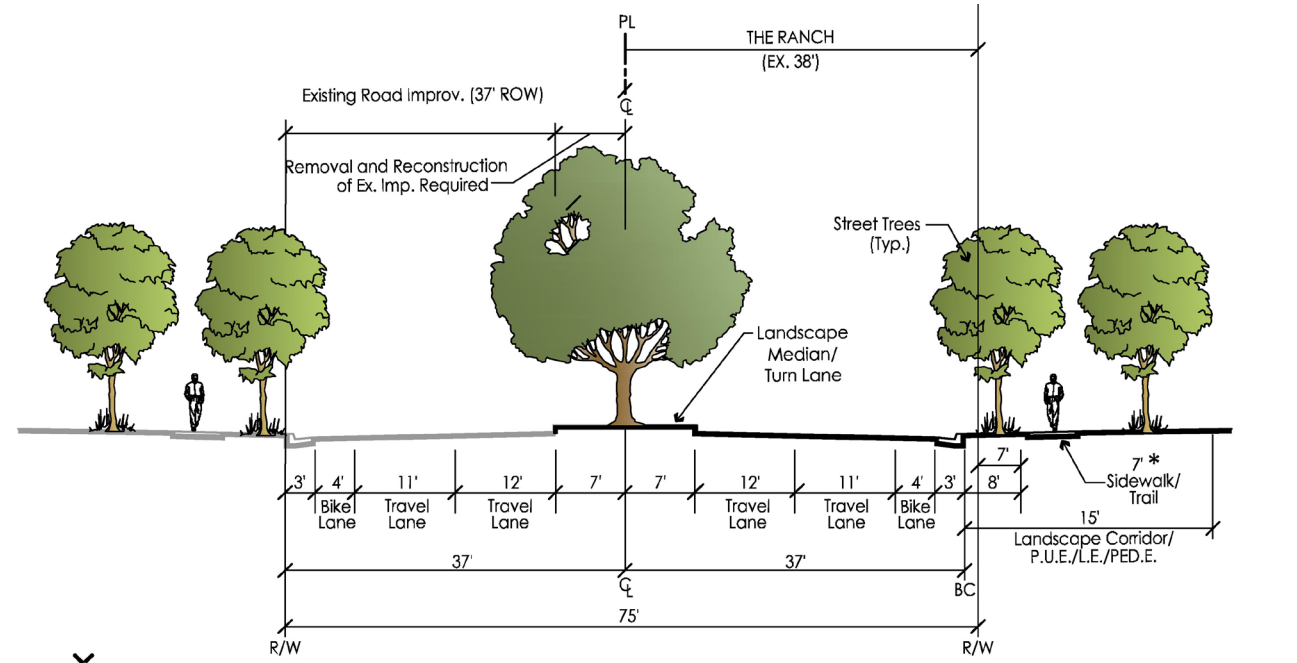
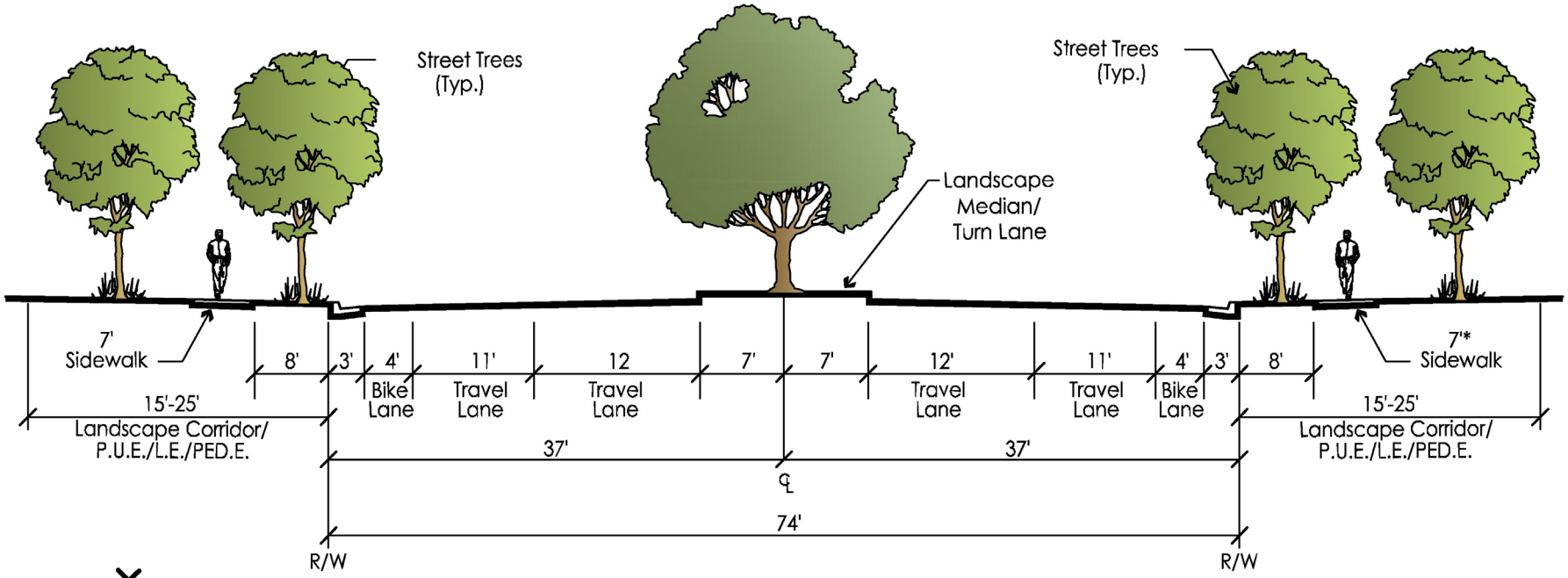


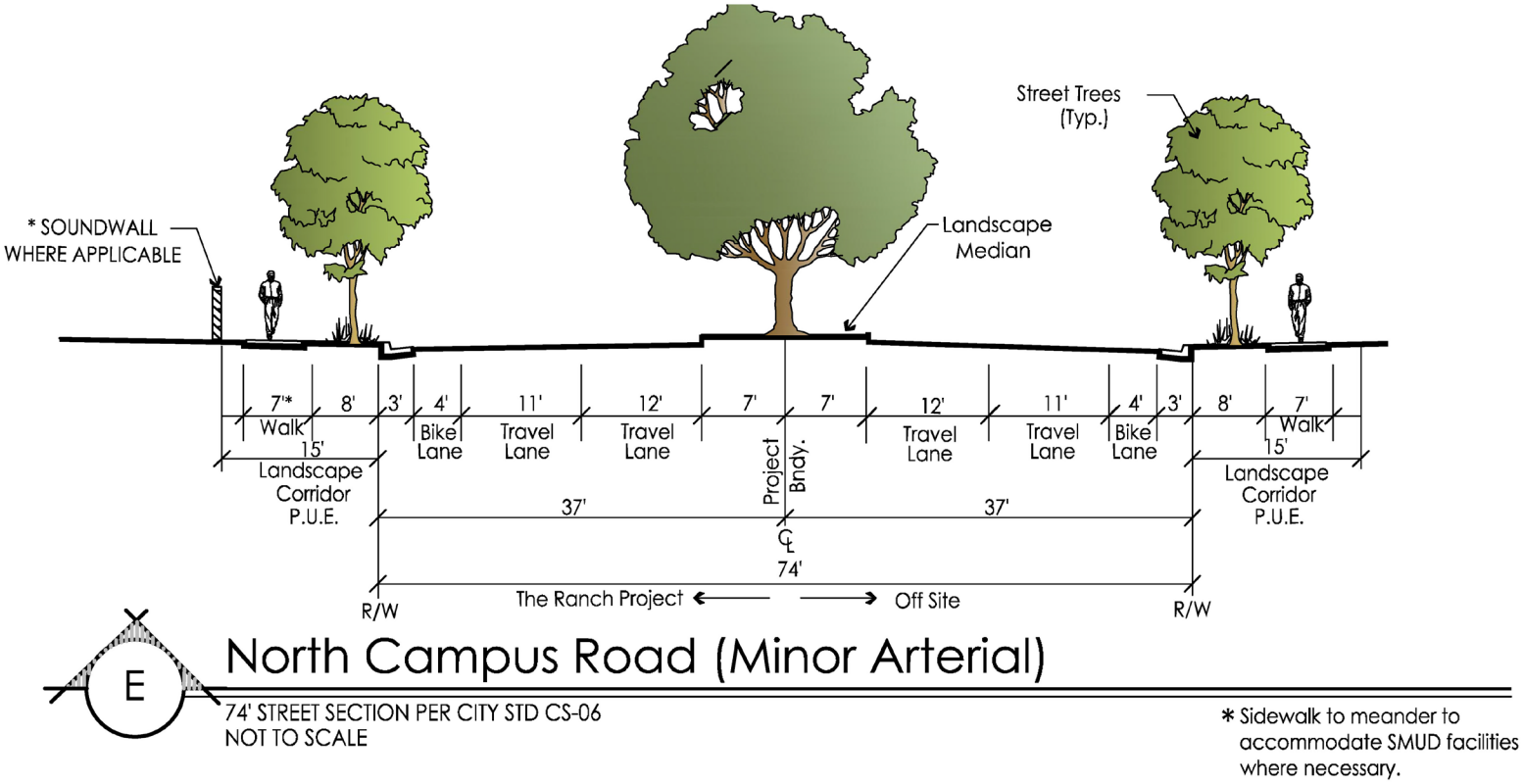
Exhibit 21: Chrysanthy Boulevard Minor Arterial Street Section



North Campus Road – Modified Minor Arterial

North Campus Road is a modified minor arterial street within the SPA which serves as a residential collector on the project's southern boundary.

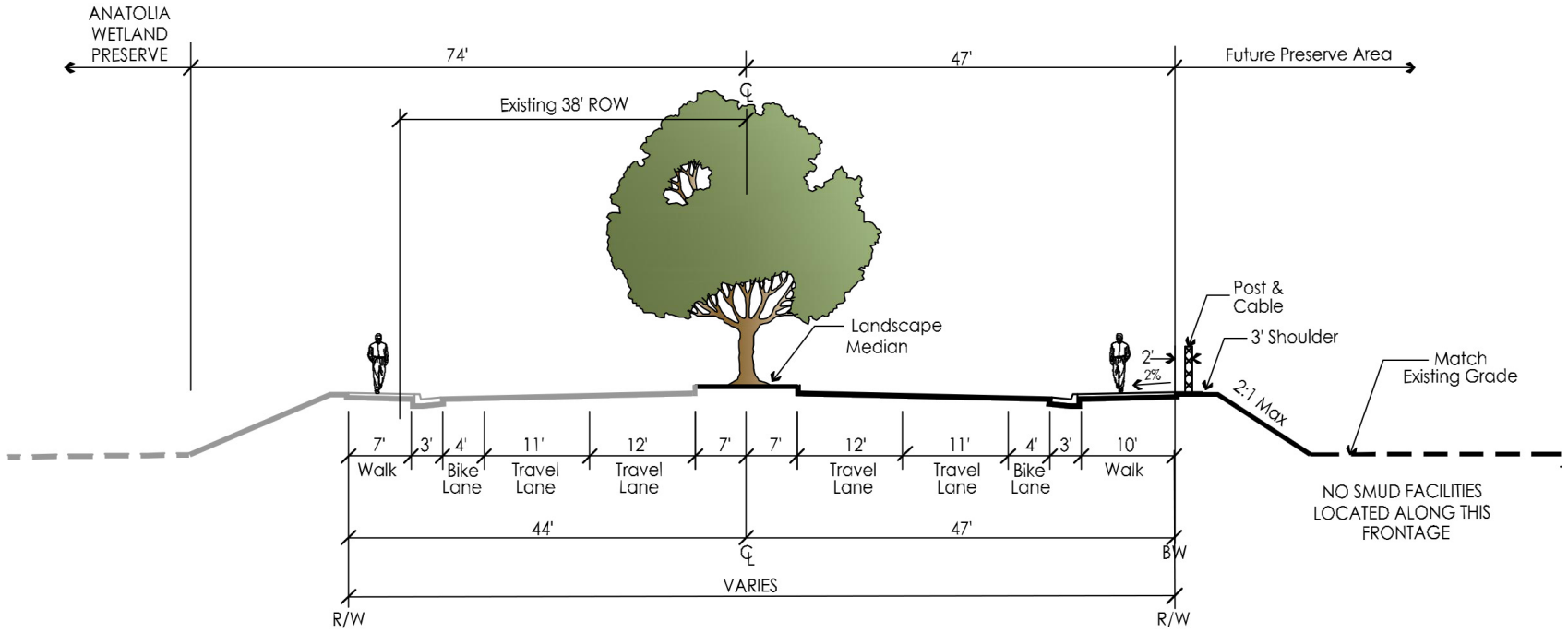
Exhibit 22: North Campus Road



Modified Minor Arterial Street

Modified Minor arterial streets within the TRSPA include Rancho Cordova Parkway adjacent to the Wetland Preserve, and Chrysanthy Boulevard at the crossing of the Wetland Preserve and protected area. These modified arterial sections have been designed to conform to SSHCP standards and to minimize impacts to the preserve area while maintaining bicycle and pedestrian connections at these key locations. In both cases, the 25' landscape corridor is removed and the sidewalk transitions to a 10' attached walk.

Exhibit 23: Rancho Cordova Parkway Modified Minor Arterial Street

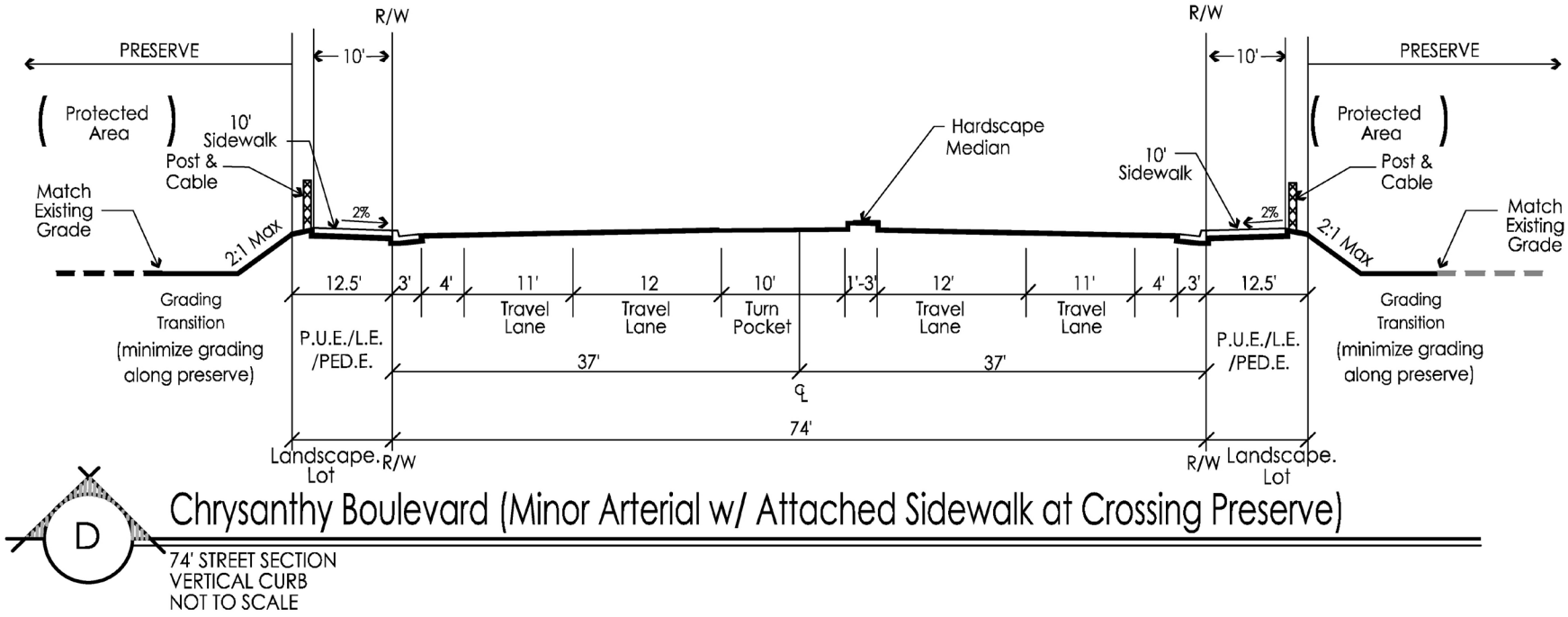


A

Rancho Cordova Parkway (Modified Minor Arterial)

STREET SECTION - WIDTH VARIES
VERTICAL CURB

Exhibit 24: Chrysanthy Boulevard Modified Minor Arterial Street



D

Chrysanthy Boulevard (Minor Arterial w/ Attached Sidewalk at Crossing Preserve)

74' STREET SECTION
VERTICAL CURB
NOT TO SCALE

Standard Residential Streets

Standard residential streets within the SPA serve as primary circulation within a neighborhood. This designation includes a modified residential street section for major entries only in which parking is prohibited and a median is added. These streets are design for less than 7,000 ADT with a speed limit of 25 mph. Generally, these 2-lane facilities are comprised of the following components:

- 43’ right-of-way (typical); 53’ right-of-way at entry
- 9’ travel lane in each direction
- 7’ parking (typical); no parking at entry
- 5’ attached sidewalk
- No striping required
- Vertical curb along community park

Exhibit 25: Standard Residential Street

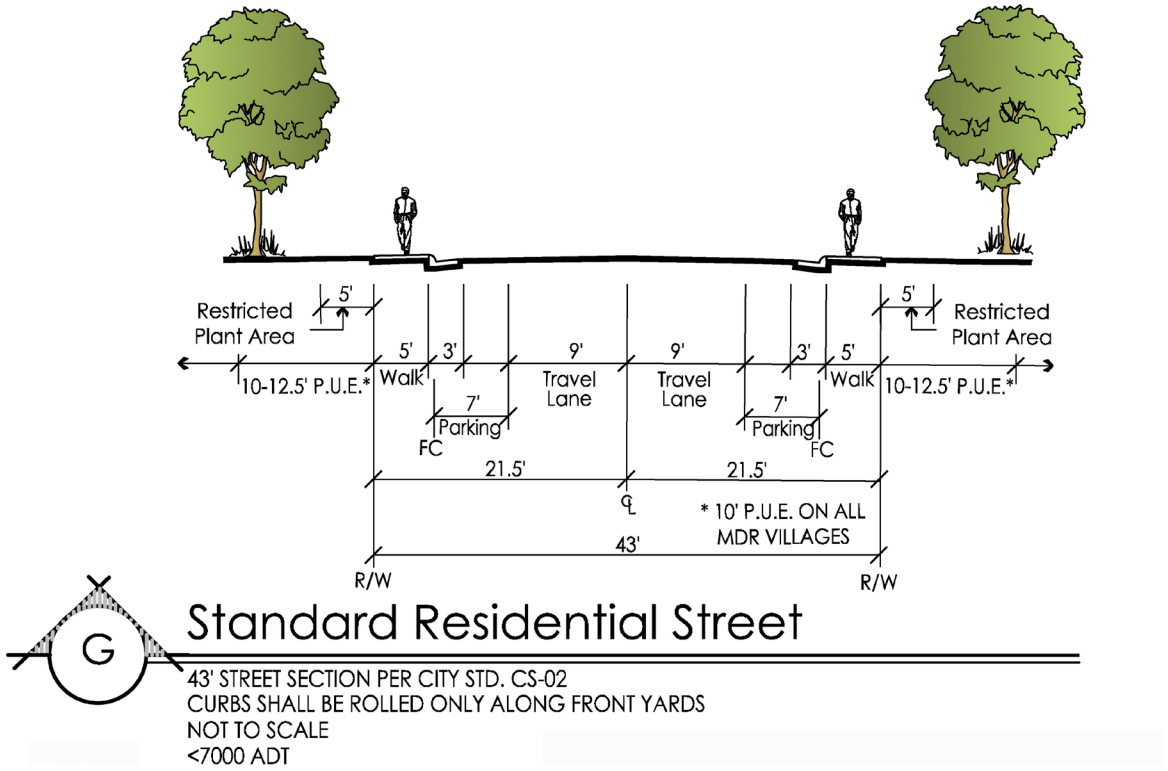
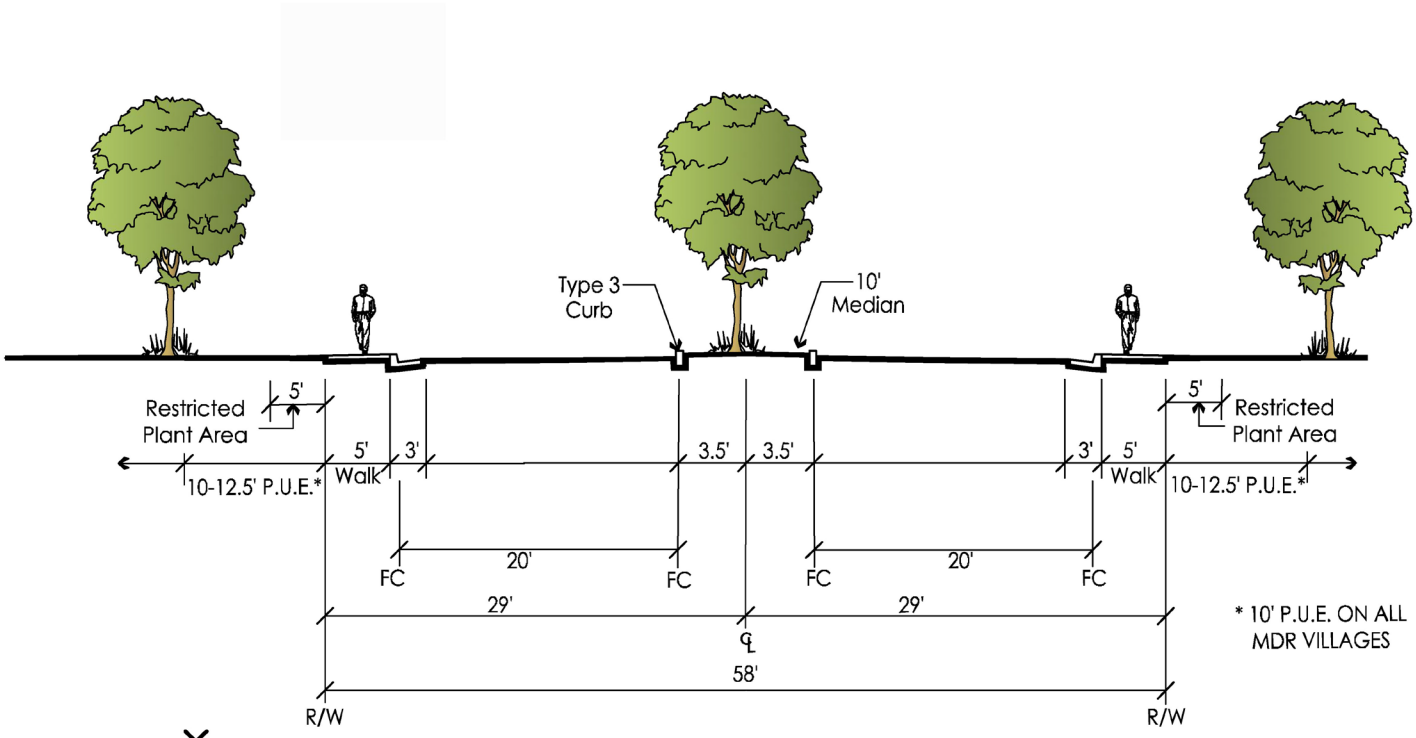


Exhibit 26: Modified Residential Street Section at Entry



H

Standard Residential Street Entry

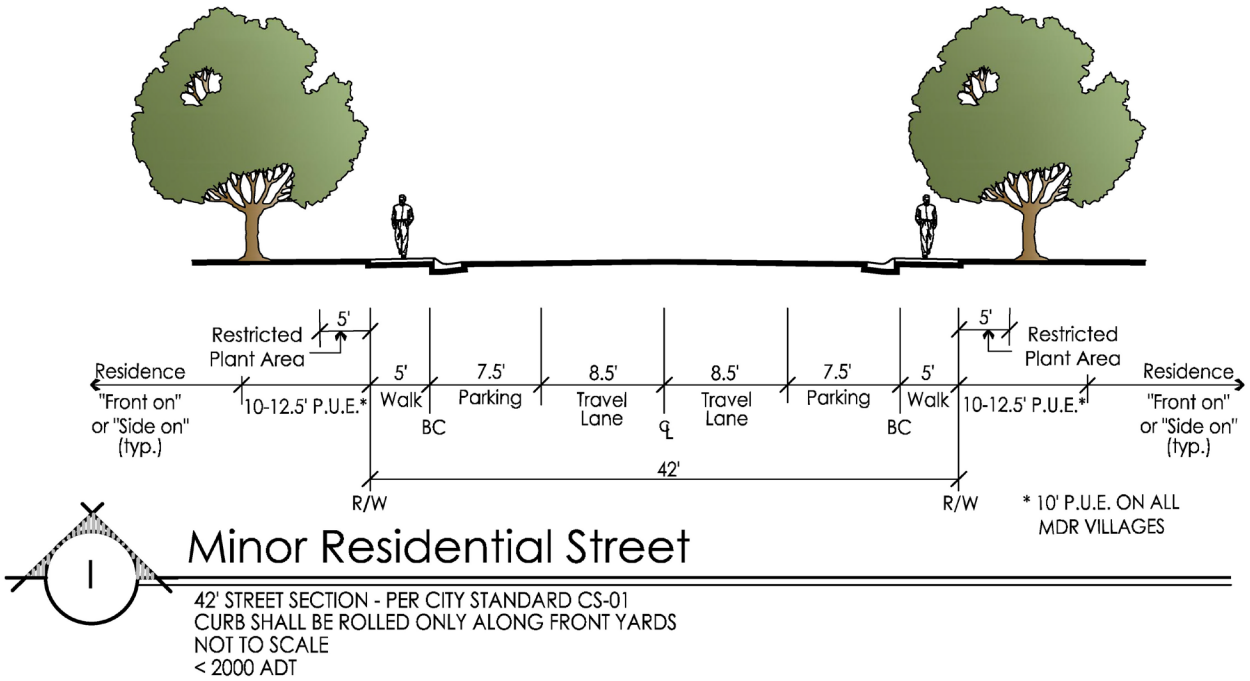
58' STREET SECTION PER CITY STD CS-02
VERTICAL CURB

Minor Residential Streets

Minor residential streets within the TRSPA serve as local connector streets within the individual neighborhoods and are consistent with City Standard (CS-01). These streets are designed to carry low volumes of local traffic (less than 2,000 ADT). These 2-lane facilities comprise the following components:

- 42’ right-of-way
- Two 8.5’ travel lane in each direction
- 7’ parking, including rolled curb & gutter (to Face of Curb)
- 5’ attached sidewalk
- Parking is permitted
- Vertical curbs should be installed along parks and residential frontages for alley loaded homes.

Exhibit 27: Minor Residential Street Sections



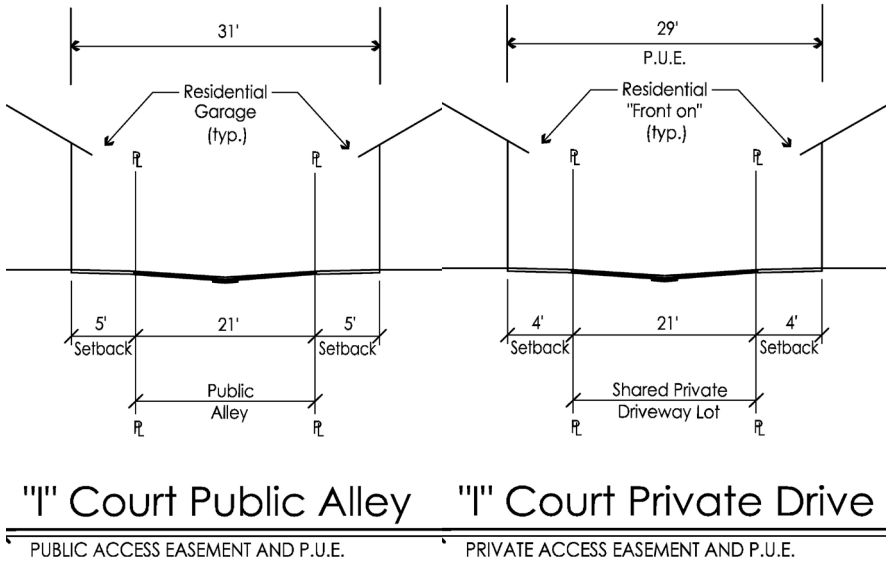
Public and Private Alleys

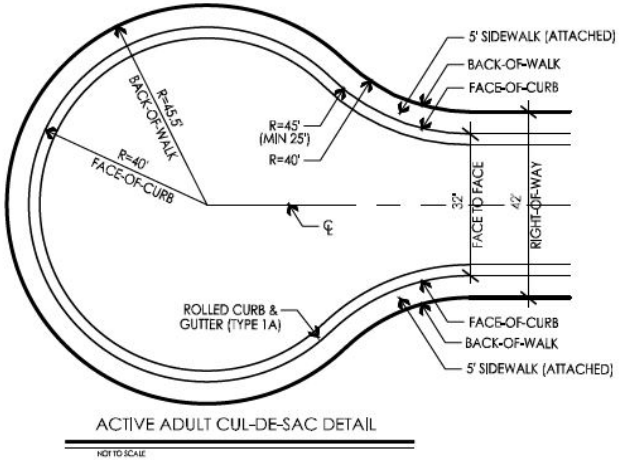
Private drives within the SPA serve residential units as a shared private driveway within the Four Seasons Neighborhood. These private drives provide access to multiple homes off this shared facility. This clustered configuration of homes minimizes garages and driveways in front yards of small lot detached residential units and eliminates 'garage-dominant' architecture. Private drives carry only the traffic from the residences that they serve and will be privately maintained as part of a Home Owners Association (HOA).

These 2-lane facilities comprise the following components:

- 21' wide pavement width
- No sidewalks
- Parking is not permitted

Exhibit 28: Public and Private Alleys





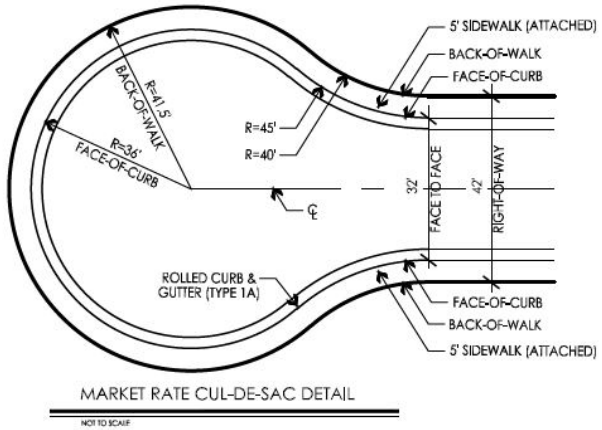


Exhibit 29: Typical Cul-de-Sac Bulbs

3.8.3 Trail Network

The trail network will create a citywide network with regional connections, allowing convenient and safe access to all pathways. The trail network, located throughout The Ranch Plan Area, is a key defining factor of the community. Trails encourage alternate transportation choices, like walking and biking, and limit the need for the conventional automobile. Trailheads orient residents to trail connections within the residential community and provide a unique sense of place integrating the natural and built environment. Proposed Trails provide opportunities for both active nodes and passive outlook areas, including benches, and pet waste stations, at these major trailhead locations. All trail improvements must be consistent with the South Sacramento Habitat Conservation Plan which governs this area. A total of 2.5+/- miles of trails will be added to the proposed site.

Within the SPA, trails are located along the expansive Wetland Preserve and a Class I Bike Trail is located within the Open Space Power Line Corridor. (Exhibit 30: Trail Map)

Nature Trails (Exhibit 31: Nature Trail Section)
Adjacent to the Wetland Preserve, there is a nature trail on the south side of Chrysanthy Boulevard, and on the north side of Chrysanthy Boulevard adjacent to the Four Seasons Neighborhood. These trails will consist of a 10' wide permeable and non-permeable trails with 2' shoulders. Proposed Trails will be located within a 50' buffer zone adjacent to the wetland preserve. The setback area will have natural vegetation and have minimal grading alteration incidental to grading transition from adjacent homes and necessary drainage. A 4' post and cable fence will separate the trail area from the remainder of the setback.

Class I Trail (Exhibit 32: Class I Trail Section)
Within the Open Space Parkway (Power Line Corridor) the trail section itself will be similar: 10' wide asphalt trail with 2' native shoulders on either side. However, it will occur in quite a different setting. A community-wide amenity, the Open Space Parkway will consist of an existing 275' wide power line easement providing access from the northern property boundary down to the Wetland Preserve south of Chrysanthy Boulevard. A 300' wide Community Park is proposed next to the Parkway located centrally within Parkview to create a premier parkland feature. The Open Space Parkway, and adjacent parklands, offer direct pedestrian connectivity throughout the Plan Area to other areas of the Sunrise Douglas Community Plan. The area will have native vegetation and limited landscaping incidental to community park amenities. This Class I trail provides a great opportunity to connect with other Class I trails, both existing and planned, in the area and in the greater City of Rancho Cordova community as identified in the City's Pedestrian Master Plan.

Trail Head (Exhibit 30: Trail map)
Meeting areas, benches, signs, pet waste stations, and landscaping will be located at every trail head. Trail head will be located at major pedestrian access points shown in exhibit 30.

Exhibit 30: Trail Map (Subject to change)

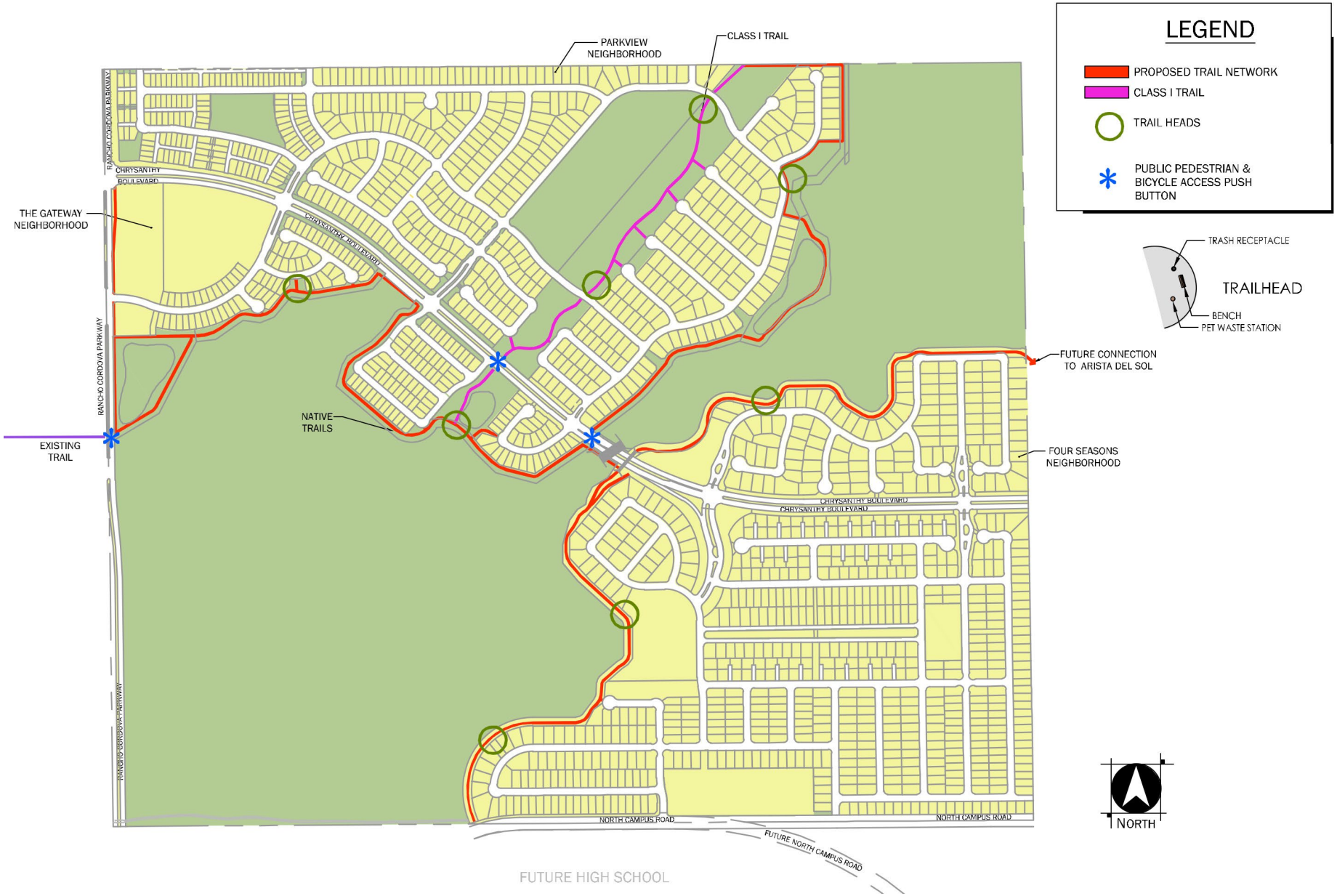


Exhibit 31: Nature Trail Section

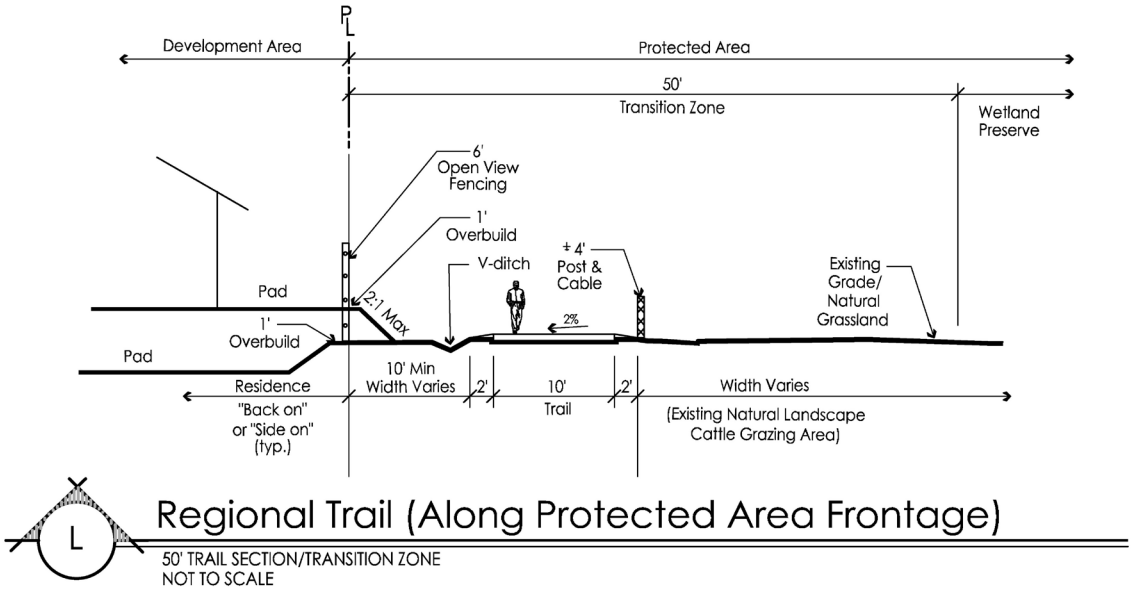
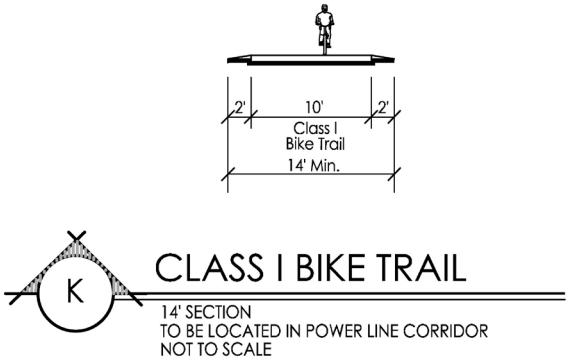


Exhibit 32: Class I Trail Section



3.9 PARKS + OPEN SPACE DESIGN PROGRAM

3.9.1 Overall Park + Open Space Plan

The Ranch Overall Park and Open Space Plan provides a variety of recreation opportunities, including active Community park, Neighborhood Park, passive parks, and open spaces within the Plan Area. The system of parks and open space will create a cohesive outdoor environment that complements the surrounding neighborhood form, playing an integral role in shaping the community as a whole. Proposed parks are located throughout the Plan Area, linked by residential streets, trails, and enhanced open space connections. The parks and open space system will greatly enhance the visual nature, quality of life, housing desirability, and the overall community image.

The Overall Parks and Open Space Plan is divided into two park programs: Public and Private. Within The Gateway and Parkview Neighborhoods a 10.8-acre public park combined with the adjacent Open Space Parkway will accommodate a premier park program, several detention basins as well as off-street Class I bicycle and pedestrian trail. This Corridor trends generally in a northeast-southwest orientation and provides community-wide open space. The community park consists of two regulation size soccer fields to be owned and maintained by Cordova Recreation & Park District. Public open space is generally owned and maintained by the City of Rancho Cordova.

The Four Seasons Neighborhood provides parks and recreation. For residents of this neighborhood this system of private amenities includes a clubhouse, linear park, community garden and off-street paths which create a looped walking network. These Four Seasons amenities will be privately owned and maintained as part of a Home Owners Association (HOA).

The Plan Area also includes a large Wetland Preserve that will be maintained in perpetuity for the preservation of threatened and/or endangered species. A trail around the Wetland Preserve will incorporate interpretive signage regarding the Wetland Preserve's special site characteristics, plant and animal inhabitants and on-going maintenance efforts.

Bicycle Facilities

Bicycle facilities shall be incorporated into each phase of The Ranch. The bicycle facilities and features shall include bicycle parking facilities for the multifamily, parks, recreation, and commercial uses, and may include bicycle lockers, showers for employment-generating uses, or bicycle-related signage.

Parkland Dedication

The Ranch public and private parks within the Plan Area contribute to the required parkland dedication. As outlined in the City's General Plan, 'All new residential development is required by the State to dedicate parkland at a rate determined by the land authority. The City of Rancho Cordova requires a rate of five acres per 1,000 population. In addition, the City of Rancho Cordova requires open space dedication at a rate of one acre per 1,000 population.' Table 5 outlines the required and provided parkland dedication.

Lighting Standards

A lighting plan shall be prepared prior to the approval of any improvement plans or building permits for park facilities. The lighting plan shall demonstrate that the lighting systems have been designed to minimize light spillage onto adjacent properties to the greatest extent feasible. The lighting plan shall include the following:

- Design of site lighting and exterior building light fixtures to reduce the effects of light pollution and glare from glass and metal surfaces;
- Lighting shall be directed downward, and light fixtures shall be shielded to reduce upward and spillover lighting;
- Where it is not feasible to fully shield light fixtures from light pollution, such as the sports field lights, the sports fields shall be located as to minimize the effect of lighting on nearby residential uses and the lighting shall be directed downward, be of the minimum wattage and height suitable for illuminating the playing surfaces and immediately surrounding areas, and shall be shielded and hooded to prevent light trespass outside of the park boundary and any adjacent roadway and to minimize any backscatter to the night sky.
- Lighting for each playfield, parking area, and structure shall have control boxes that allow operation of specific areas of lighting in order to only illuminate the field(s) and parking area(s) in use at any given time.
- Lights shall be turned off when the fields, parking areas, and structures are not in use.
- Parking lot lights added within the powerline easement east of the Community Park shall not be installed until the poles and fixtures have been reviewed and approved by easement holder. (PG&E or SMUD)

These requirements shall be noted on the project improvement plans.

Table 5: Parkland Dedication

QUIMBY DEDICATION					
Designation	**Units**	**PPF**	**Required dedicaton**	**Location**	**Proposed dedication**
Market Rate					
SFR	732	2.95	10.80	Community Park	10.78
				Neigborhood Park	2.19
MFR	215	1.54	1.66	25% Park Parking lots	0.2575
Active Adult					
AA SFR	705	2	7.05	Rec Center	4.62
AA MFR	38	1.04	0.1976	Linear Park	1.4
				Community Garden	1.58
Totals	**1690**		**19.70**		**20.8275**

CITY OPEN SPACE DEDICATION					
Designation	**Units**	**PPF**	**Required dedicaton**	**Location**	**Proposed dedication**
Market Rate					
SFR	732	2.95	2.16	25% Lot R	1.965
MFR	215	1.54	0.33	Lot U	1.21
				25% Lot S	0.7275
				25% Lot I	0.5725
				25% Lot Q	0.5625
Active Adult					
SFR	705	2	1.41		
Senior MFR	38	1.04	0.04		
Totals	**1690**		**3.94**		**5.0375**

The following pages illustrate the overall parks and open space plan including individual conceptual park plans, landscape standards and monumentation.

Exhibit 33: Overall Parks + Open Space System
(Subject to change)

3.9.2 Conceptual Park + Open Space Program

The park designs and programs for uses shown in this section are conceptual in nature and are subject to further design refinements. For purposes of this handbook, the park plans/ and programs are separated and listed by neighborhood, as previously identified in this handbook, and described in detail on the following pages.
Concept only. Layout is subject to change.

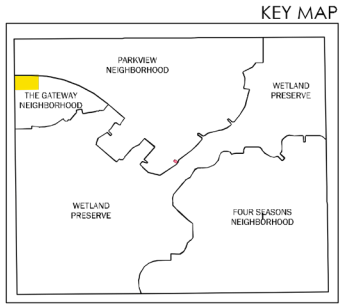
The Gateway Neighborhood

The Gateway Neighborhood represents the public front door to the community and marks one's arrival to The Ranch SPA. As such, prominent community entry feature and plaza are planned for the intersection of Ranch Cordova Parkway and Chrysanthy Boulevard. Refer to Section 3.7.4, Signage + Monumentation, for more detail on the community entries.

In addition, this neighborhood also provides opportunity for residential and retail-service uses to interface by providing a parks or plaza to orient the neighborhood, creating a focal meeting area and community gathering space. The plaza is envisioned to have a formal, urban design yet provide passive-use recreational spaces.

PARKS PROGRAM
Linear connection to town center
Plaza at village end with water fountain
Raised planters with minor turf berms
Linear turf parkway strip
Landscaped transition to higher density homes
Site amenities: benches, trash receptacles, drinking fountains

Exhibit 34: The Gateway Neighborhood Plaza Concept



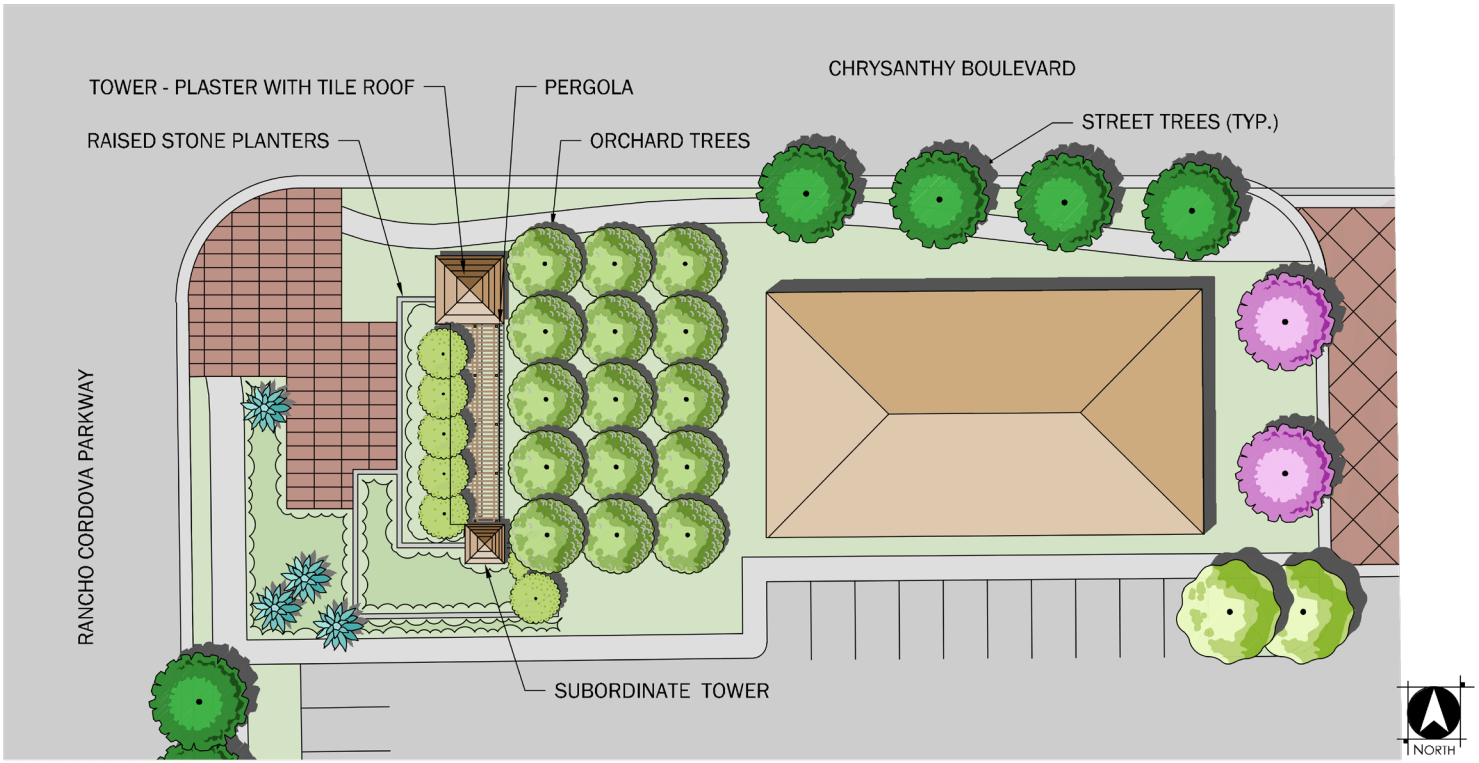
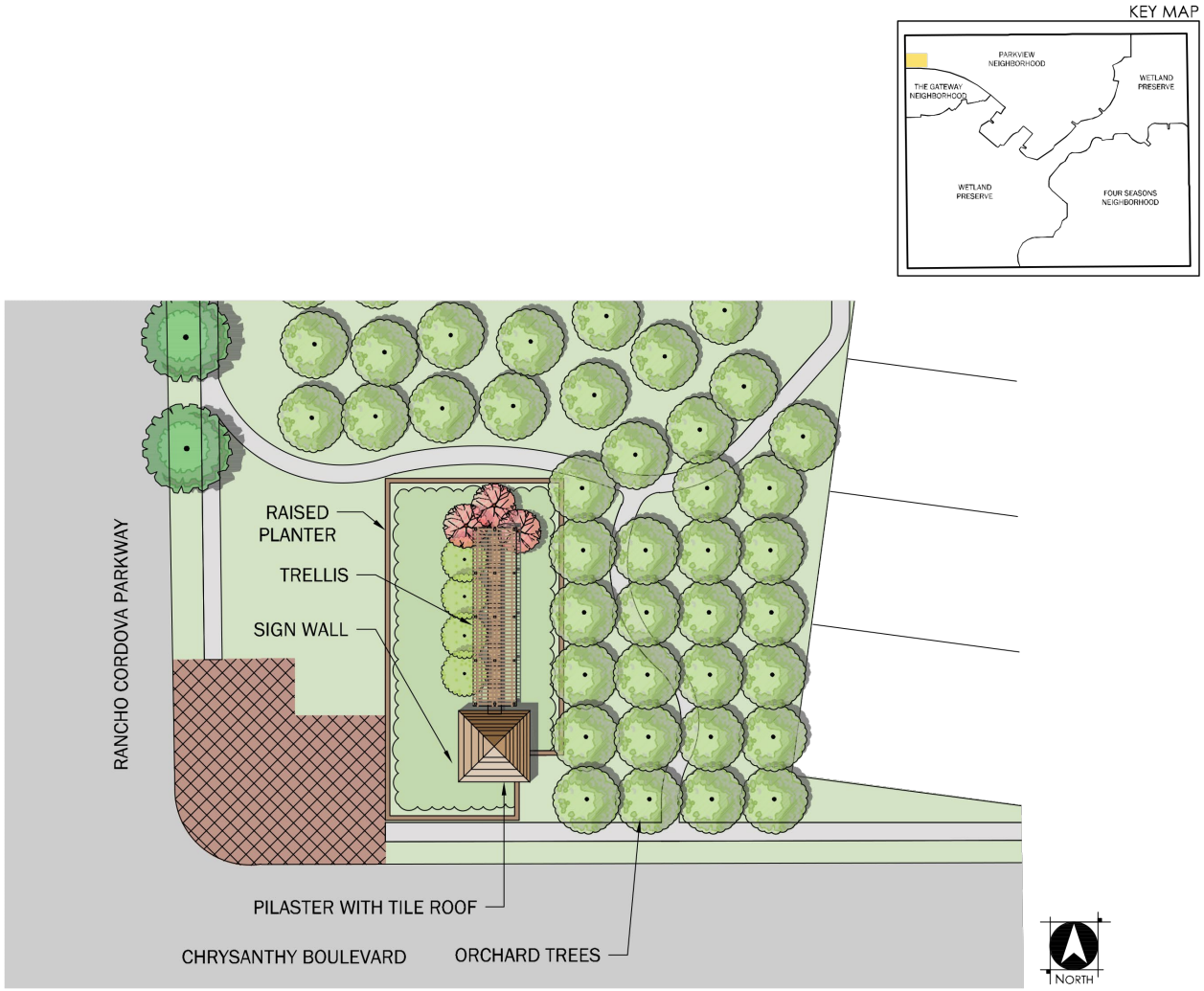


Exhibit 35: The Parkview Neighborhood Community Entry
Concept only. Layout is subject to change.



Parkview Neighborhood

This neighborhood is home to an 11-acre public community park, combined with the adjacent 8-acre open space parkway and a 2.1-acre neighborhood park. The parks serve the neighborhood and the community to provide active and passive recreational uses for the plan area. The community park is envisioned to have active recreation facilities. The open space in the adjacent power line corridor will be a natural, informal design.

The open space parkway consists of an existing 275' wide power line easement that provides Community-wide Open Space and offers direct pedestrian connectivity throughout the Plan Area and to other areas of the Sunrise Douglas Community Plan. Improvements include a Class I trail system consisting of a 10' wide asphalt or concrete trail with 2' gravel shoulders and will provide regional connectivity through the Plan Area.

The neighborhood park is envisioned to serve high density villages. The park will be an ideal location for a tot lot and will feature a basketball court available for all ages. The exact programing will be determined in collaboration with CRPD and local residents.

The park design elements within Parkview Neighborhood will be consistent with the architectural character of the surrounding neighborhood. The community park programing will be adjusted as needed to meet current trends and community needs when the design for the community park commences, consistent with the Cordova Recreation & Park District *Preliminary District-wide Facilities Distribution Plan* (June 2016). Final programming will be determined during the design phase of the community park.

The Programs for Uses and Conceptual designs are as follows.

COMMUNITY PARK PROGRAM

Two regulation-sized soccer fields, public restrooms, and other facilities typical to community parks such as children's play areas, picnic shelters and sports courts.

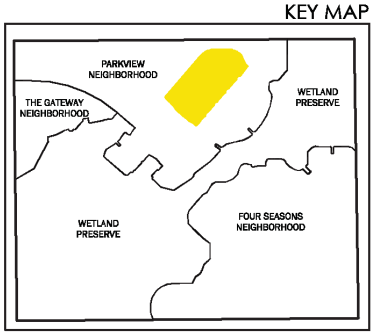
NEIGHBORHOOD PARK PROGRAM

Play structures, sports courts, picnic areas, shade structures, benches, tables, barbeque and trash cans.

PROGRAM FOR OTHER PARKS

Meandering, Class I Bike and Pedestrian Trail
Site amenities: dog stations, trash receptacles, drinking fountains
Surface parking for adjacent community park facility
Detention basin facilities

Exhibit 36: Parkview Conceptual Plan of Community Park



* Kite flying is prohibited in this area. Signs shall be posted to inform the public.

Exhibit 37: Parkview Conceptual Open Space Power Line Corridor
(Improved with drought tolerant plants and very limited turf area)

Four Seasons Neighborhood

This gated Neighborhood is home to a private recreation center, linear park, and community garden. The system of park amenities within this private community are meant to orient the neighborhood and provide focal meeting areas for community gatherings. The parks and open space system are envisioned to have a formal design and provide passive and active use recreational spaces.

The park design elements within the Four Seasons Neighborhood will be consistent with the architectural character of the surrounding neighborhood. The programs for uses and conceptual designs are as follows.

Four Seasons Parking

Parking on private streets within Four Seasons neighborhood on streets are allowed on one side only on streets up to 35 feet wide.

Table 6: Four Seasons Clubhouse & MFR Parking Requirements

Use	Area/Units	Rate	Parking
Clubhouse (approx. 19,000 sf)	19	2	38
AA MFR	38	0.5	19
AA MFR Guest	38	0.1	3.8
Total			**60.8**

ADA per building code

LINEAR PARK PROGRAM
Picnic trellis with enhanced paving and raised planter
Informal turf & grasses
Canopy shade trees
Meandering pathway
Site amenities: benches, trash receptacles & drinking fountains

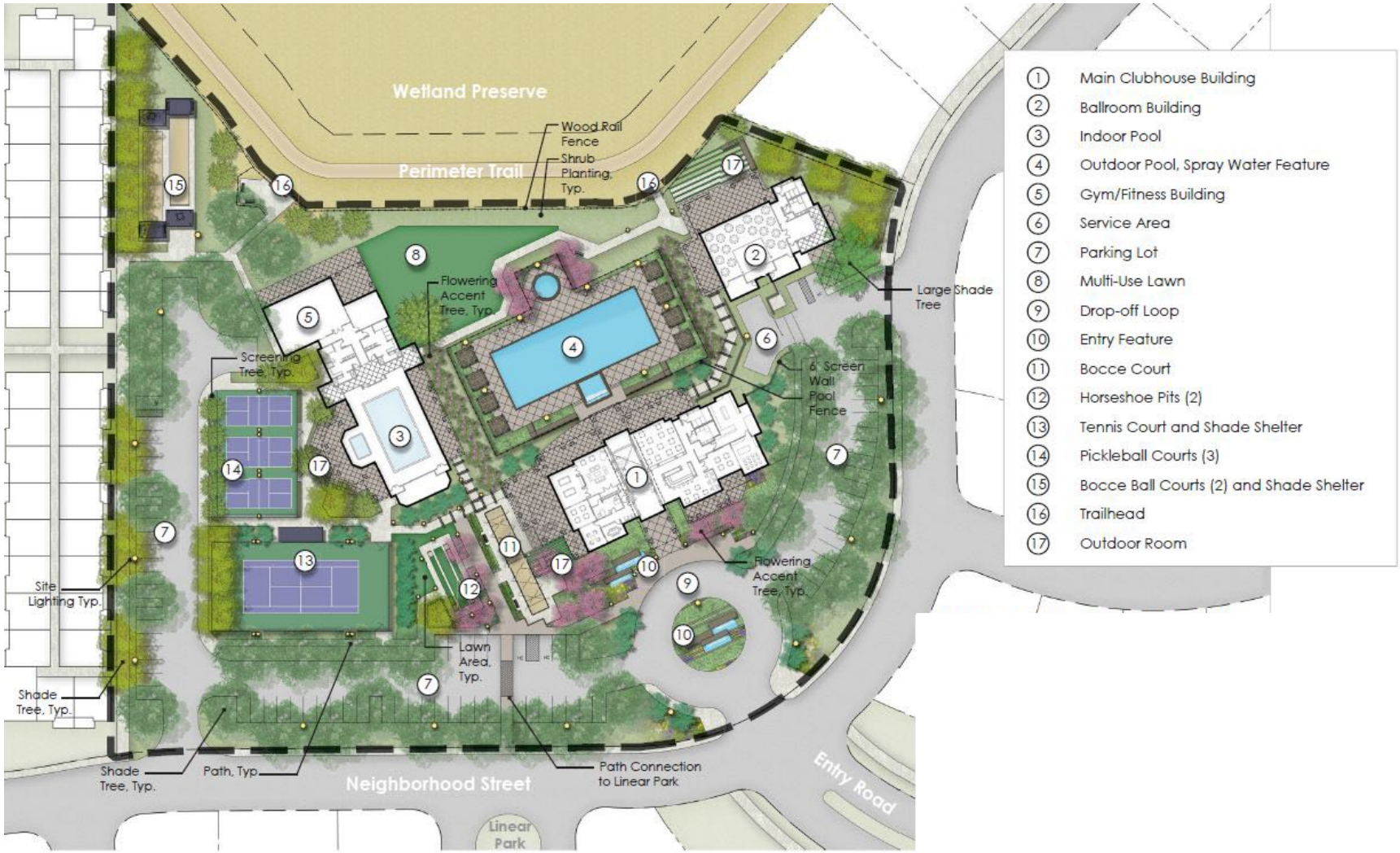
COMMUNITY GARDEN
Community garden plots
Picnic area with trellis
Raised bed planters
Site amenities: picnic tables, trash receptacles & drinking fountains

MAIN COMMUNITY ENTRY
Gates and guard house
Prominent entry monumentation
Landscaped median
Wide landscaped corridors with street trees
Water features
(Secondary entries will have understated gated entries.

RECREATION CENTER PROGRAM
Gym/Fitness/Showers/Lockers
Aerobics/Multipurpose Room
Ballroom/Assembly
Cards/Mojang Room/Billiard tables
Club Room
Bistro (w/Pro Kitchen)
Lounge/Bar
Kitchen Demonstration/Lounge/TV Events
Small Conference Room
HOA Office Suite
Staff Breakroom
IT Room
Fire Room(s)
Storage Room (Maintenance)
Pickleball Courts (At Least 4)
BBQ/Outdoor Kitchen Stations/Tables
Putting Green
Pool (s) and Spas
Shaded Structures
Fire Pits

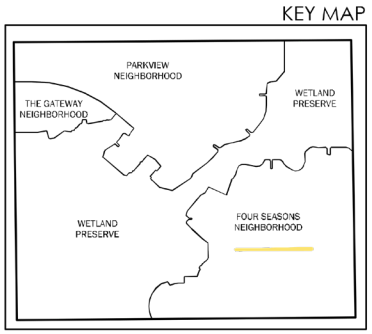
*The above program is subject to change

Exhibit 38: Four Seasons Recreation Center.



Note: Concept only. Site Plan is subject to change.

Exhibit 39: Four Seasons Linear Park Conceptual Plan
(Concept only, subject to change)



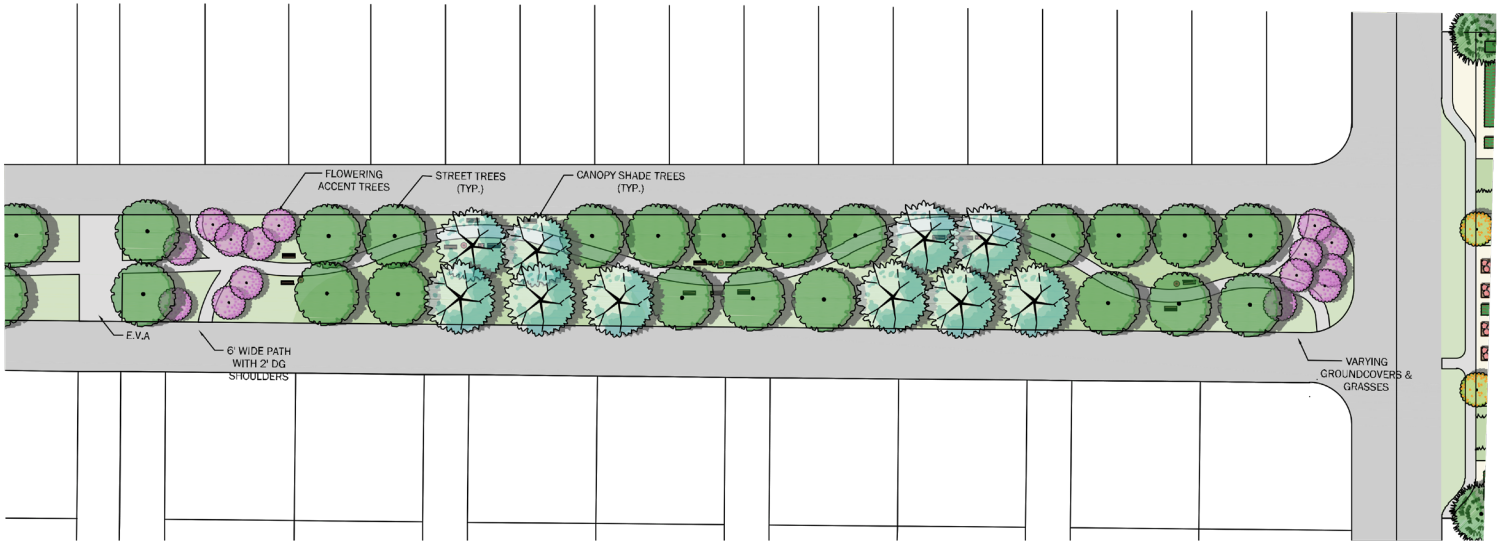
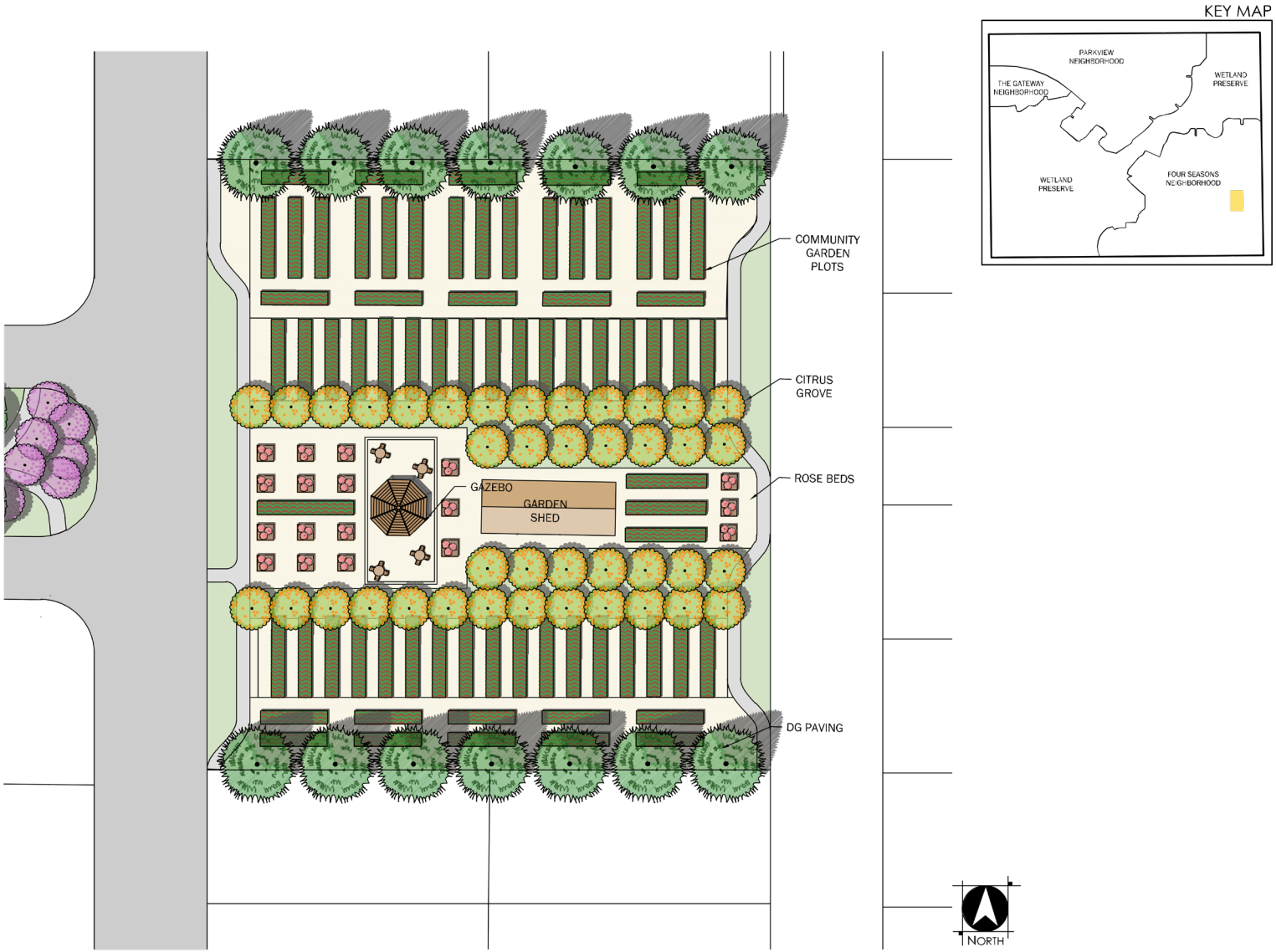


Exhibit 40: Four Seasons Community Garden Conceptual Plan (Concept only, subject to change).



3.9.3 Landscape Standards

The intent of the landscape design within each neighborhood is to provide continuity throughout the community. Landscaping guidelines specify standards for streetscapes and public spaces. Using deciduous and evergreen plant material, year-round interest will be given to the site with an evenly layered plant design. This layered plant design helps to frame views and highlight special features and can also screen or diminish adverse views and utilities.

The streetscape within The Ranch community is unified through a consistent palette of ground cover, shrubs, and street trees. A minimum of 2,240 new trees will be included in the project, as street trees and trees included in the parks and landscaping areas. The street trees create a canopy along all public streets to increase the aesthetics of the neighborhood while providing shade and a walkable environment. All street trees should be a minimum of 15 gallons in size at the time of planting and centered in the parkway strip or behind the sidewalk in a few locations where there is an attached sidewalk. A mix of evergreen and deciduous trees is encouraged as primary and accent tree options.

The landscaping of public spaces should be carefully considered to attract visitors. Trees with a consistent canopy should be used in areas where shade is desirable especially along the walking path along the roadways. In general, the landscaping of public spaces should complement the other features and amenities of the area, becoming a backdrop to pedestrian activities.

The following landscape guidelines and standards apply to the community:

- Landscaping should be used to define outdoor spaces, softening and complementing structures
- Provide landscaping to screen parking, loading, storage and equipment areas
- Provide landscaping to shade and enhance the streetscape, parking areas, and outdoor gathering places
- Detention facilities should be planted to create the appearance of natural vegetation, with careful consideration of plant selection to ensure survival and compatibility of a proper functioning drainage system; and,
- Landscape should be drought tolerant.

Plant Palette

Refer to the Cordova Recreation & Park District *Design & Construction Standard Manual* (June 2015) for preferred trees, shrubs and groundcover. A minimum of 50% of trees and vegetation on each lot shall be drought-resistant. Additional trees and plants may be utilized with administrative review.

Turf Area

Turf for residential uses shall be at least 70% less than the maximum allowed turf area.

Irrigation

All irrigation shall use water-efficient irrigation systems that include automatic rain shut-off, maximum gallon per minute restriction, and WiFi connectivity features.

Public Art

Public art is encouraged and may be incorporated into public community spaces such as urban plazas and parks.

Fencing

Open view fence shall be installed along all lots backing to the preserve and open space lots. The fences will be wrought iron (or similar material), as seen in exhibit 41. Good neighbor fences will be installed on side property lines adjacent to open space lots and paseos. Please see exhibit 42.

3.9.4 Signage, Entry Monumentation, and Walls

Entry features and monumentation create an identity or "sense of place" for a community. Entries provide a rhythm to the streetscape, acting as a defining element that reinforces the overall architectural and landscape design theme. Both Primary and Secondary monumentation and associated signage are envisioned for The Ranch. To follow, are examples of primary and secondary monuments which may be found throughout the community.

The Primary Entry to the community is Located at the intersection of Rancho Cordova Parkway and Chrysanthy Boulevard. The entry feature at this major intersection is a combination of plant material, hardscape elements, decorative structures and paving, and signage (Exhibit 46).

Gates and a guard house are located at the main entrance to the Active Adult neighborhoods at Chrysanthy Boulevard (Exhibit 49). All other Active Adult entries will be scaled down and recessed from Chrysanthy Blvd. Secondary entries are designed to have a similar feel as the rest of The Ranch community, including a combination of plant material, hardscape elements, paving, and signage.

The following guidelines and standards apply to entry features and monumentation:

- Neighborhood identification signage or thematic logos may be incorporated into pilasters or low walls
- Entry street corners may incorporate hardscape elements including enhanced paving, pilasters, walls, raised planters and pedestrian gateways
- Groupings of evergreen or deciduous flowering trees shall be used to highlight each entry
- Thematic landscaping material consistent with Plant Palette, will set the tone for the community
- Must not interfere with vehicular sight lines

Exhibit 41: Open View Fencing

Exhibit 42: Good Neighbor/Privacy Fencing

Walls and fences are intended to provide screening and buffering between different land uses, to define the edges of roadways and public landscape, and to provide privacy and security for private homes. Masonry sound and safety walls are provided along the edges of the primary roadways. (Exhibit 43) These walls also provide for the entry and signage that are described in this section. Enhanced fencing is provided along the main entry drives within the project (along the enhanced landscape pedestrian walks), and lot line fencing between homes.

Exhibit 43: Example of wall detailing (preliminary design, subject to change)

Exhibit 44: Primary Entry (Rendering - Preliminary design, subject to change)

Exhibit 45: Examples of Primary Community Entry Monumentation

Exhibit 46: Community Entry Monumentation.

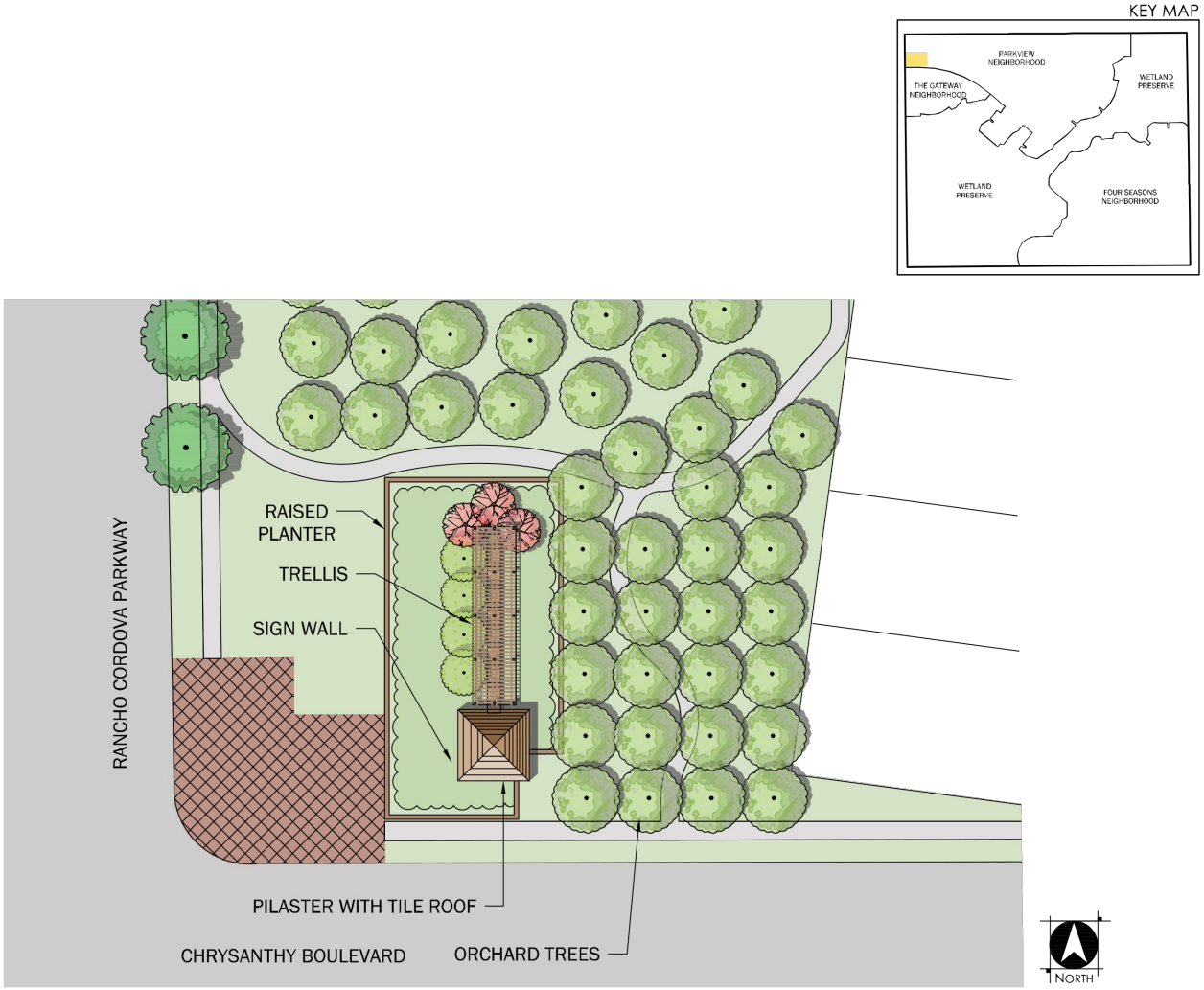


Exhibit 47: Examples of Secondary Community Entry Monumentation

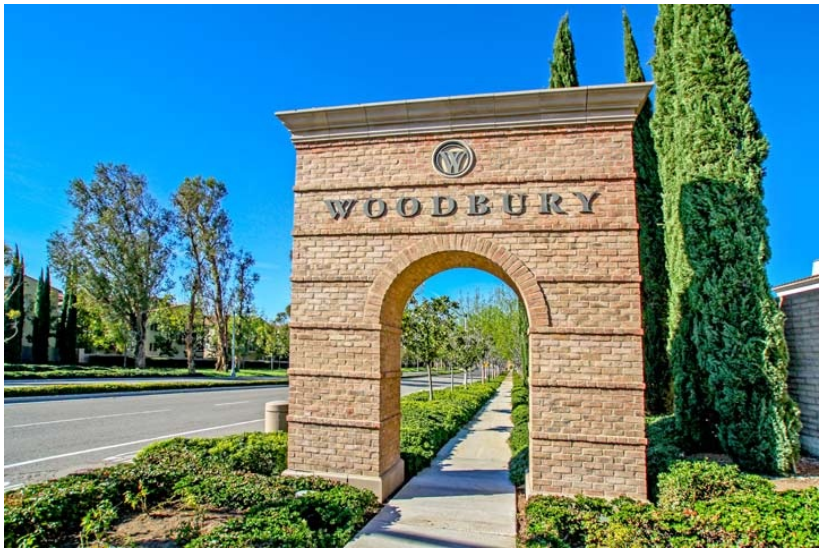
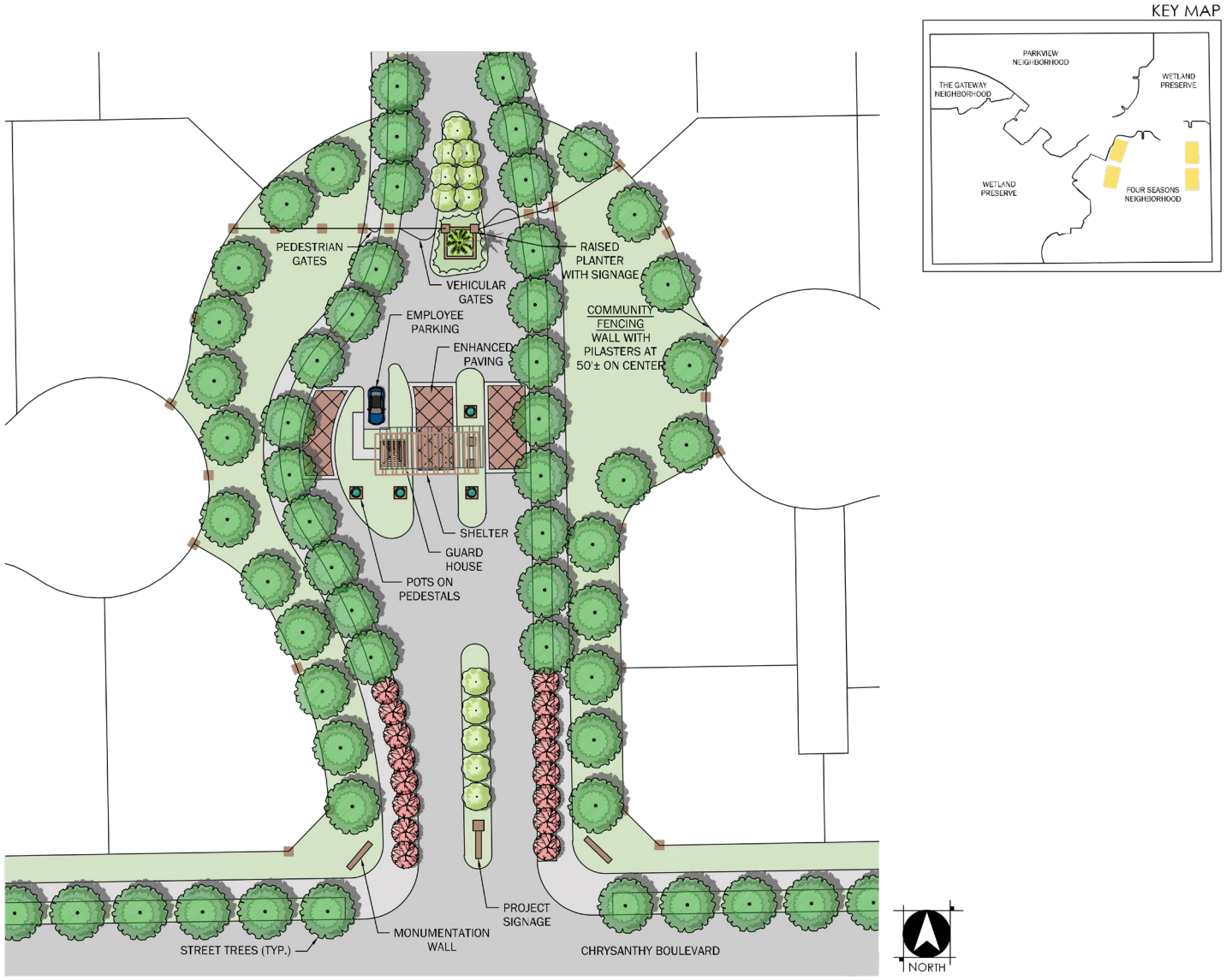


Exhibit 48: Four Seasons Gated Entry
(Preliminary Design, subject to change)

Exhibit 49: Four Seasons Community Primary Entry Plan



3.9 WETLAND PRESERVE

The TRSPA includes a 200+/- acre Wetland Preserve which will be protected through a perpetual conservation easement. The Applicant is working with the South Sacramento Habitat Conservation Plan (SSHCP) to implement the Preserve. The SSHCP is a regional effort that will provide development and infrastructure Project with a streamlined, predictable federal and state permitting process by creating a Preserve System to protect habitat, open space, and agricultural lands.

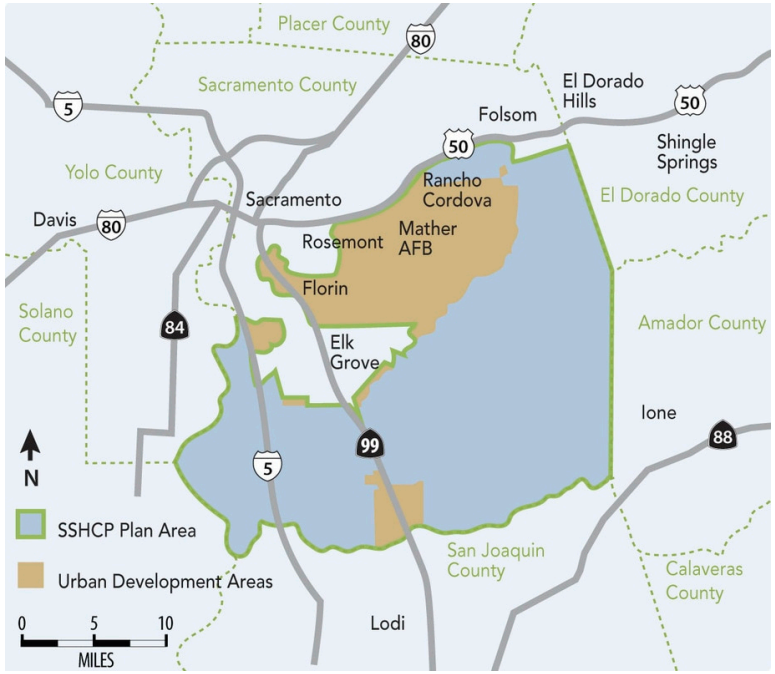
The SSHCP was adopted by the City of Rancho Cordova on October 15, 2018. The SSHCP allows project proponents within the Plan Area to simplify and expedite the state and federal Endangered Species Act (ESA) permitting process. It is anticipated that the SSHCP will receive approval to sell mitigation credits for Incidental Take Permits in late March-Early April of 2019.

Other Related Permitting

In addition to streamlining the ESA permitting processes, a separate but parallel multi-tiered permitting program has been developed to streamline Clean Water Act Section 404 and 401 permitting process (see SSHCP Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) Appendix C) and a Master Streambed Alternation Agreement will be prepared to address Section 1602 of the California Fish and Game Code.

Incidental Take

The SSHCP will allow the Sacramento County (the County), the City of Rancho Cordova, City of Galt, Sacramento County Water Agency, and the Southeast Connector Joint Powers Authority (collectively referred to as the Plan Permittees) to issue an Incidental Take Permit (ITP) for activities and projects they conduct. In addition, the three local Land Use Authority Permittees (the County, Galt, and Rancho Cordova) have the ability to extend incidental take coverage provided by the SSHCP ITPs to activities and projects implemented by Third-Party Project Proponents that are under the jurisdiction of that Land Use Authority Permittee. This will allow Third-Party Project Proponents to avoid the extensive negotiation and processing currently required to obtain individual project permits under the California Endangered Species Act (CESA) from the California Department of Fish and Wildlife (CDFW) and project ESA compliance from the U.S. Fish and Wildlife Service (USFWS).



Ultimately the SSHCP Conservation Strategy will result in an interconnected Preserve System totaling 36,282 acres of which TRSPA will be a part of. All SSHCP Preserves will be preserved in perpetuity and would be acquired either as a fee title or as conservation easements, although most of the Preserve System will be acquired using conservation easements. As the SSHCP is implemented over the 50-Year Permit Term, the new 36,282-acre SSHCP Preserve System will be established in a manner that supplements, complements, and links together many of the existing preserves within the Plan Area.

Monitoring SSHCP

The frameworks for two monitoring programs have been developed. The first framework is the "South Sacramento Habitat Conservation Plan (SSHCP) Compliance and Avoidance and Minimization Measure Monitoring (AMM) Program Framework." This monitoring program framework was developed to monitor compliance with the Plan requirements, the Implementing Agreement, and the permits. A second monitoring program framework, the "SSHCP Preserve System Monitoring and Management Program" was developed to monitor the effectiveness of the Plan in terms of protecting Covered Species, natural communities, and ecosystem processes within the SSHCP Preserve System and to evaluate the effects of preserve management actions.

Land Dedication

The applicant proposes to dedicate the entire area of the wetland preserve to the HCP Authority. Therefore, Land Dedication in lieu of Development Fees implementation strategy outlined in Chapter 9 of the SSHCP is being proposed by the applicant. The SSHCP describes a land dedication process where project proponents can dedicate land towards satisfying their mitigation requirements and thereby reduce their development fees. When the dedication of land (or a re-establishment/establishment site) is accepted into the SSHCP Preserve System, development fees will be adjusted by reducing the appropriate portion(s) of the development fee (e.g., the "land" component of the SSHCP development fee) at a 1:1 ratio. It should be noted that some components of the proposed SSHCP development fees (i.e., "Other" fees shown in Table 12-5) will remain unchanged, as these fee revenues are used to fund SSCHP requirements for management and monitoring, changed circumstances, plan administration, plan development, and endowment). Land dedication in lieu of paying the land purchase component of the SSHCP development fee is only awarded after the Implementing Entity has approved the land dedication and recordation of a conservation easement or transfer of fee title to the Implementing Entity has occurred.

Endowment

The development fees include a contribution to a non-wasting endowment fund designed to generate sufficient interest to cover the ongoing annual costs beyond the 50-year Permit Term. The endowment needs are based on estimates of the long-term average real interest rate.

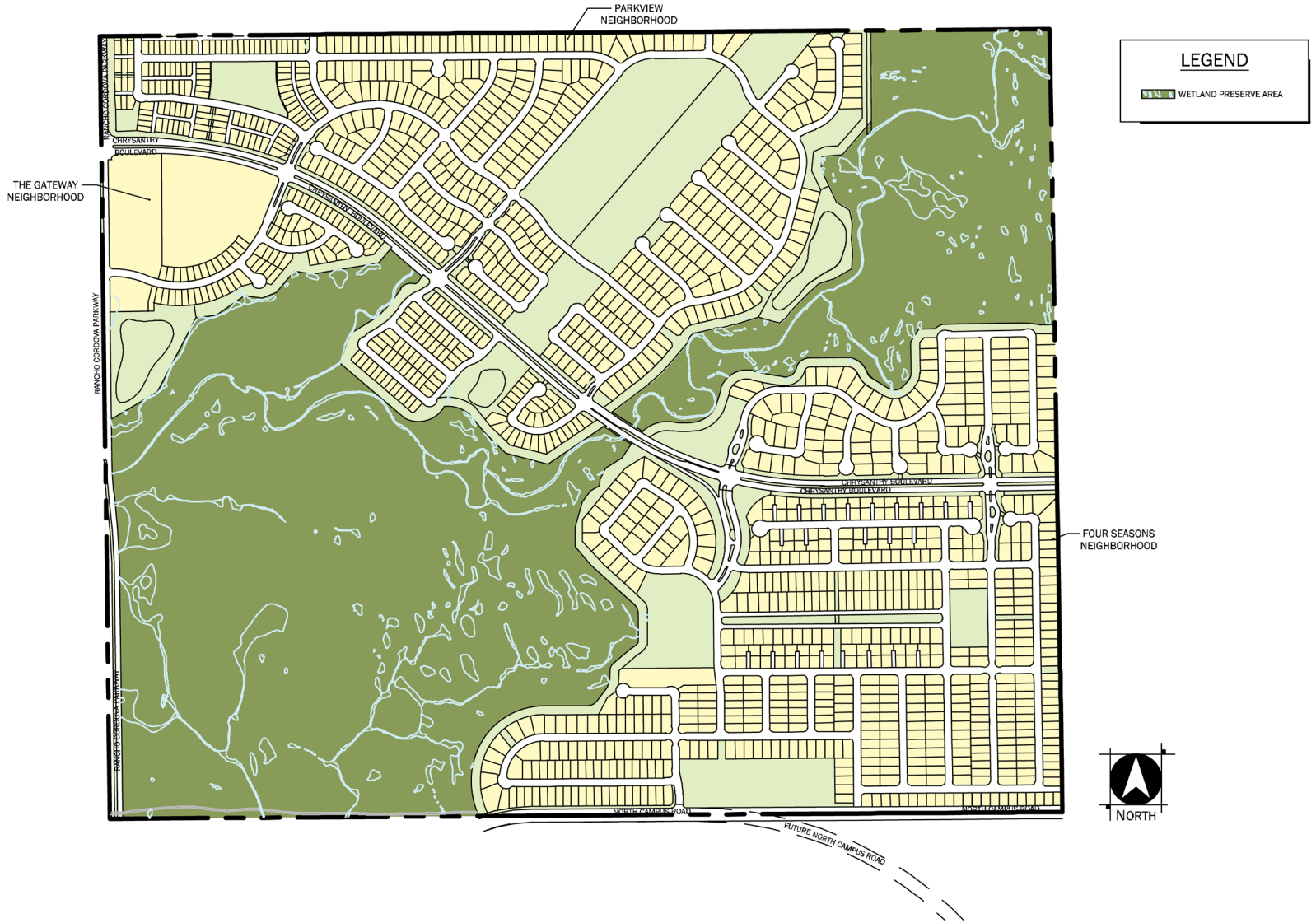
Preserve

The preserve will be fenced, and the conservation easement will specifically prohibit public access to the preserve. The easement will also prohibit vegetation removal, burning and dumping, discing, addition of roads or trails, equipment or fuel storage, alteration of topography, motor vehicle use, application of harmful chemicals, construction activities, or planting vegetation except for the express purpose of habitat monitoring and maintenance. Discing and mowing will only be allowed for fire control purposes and will be conducted in manner to avoid adverse impacts to vernal pool habitat.

Trails

Within the TRSPA, trails are located alongside the extensive Wetland Preserve. The trail will consist of a 10' wide all-weather surface with 2' shoulders on either side. The trail will be set back from the adjacent development a minimum of 10' and 0-5' from the curb and gutter on local streets and adjacent to the curb and gutter along minor arterials. The edge of the trail adjacent to the preserve will be clearly delineated with a low post and cable fence or any other similar delineation; no landscaping is permitted to occur within the wetland preserve boundary. Cattle have historically grazed the site and it is possible that this practice will be continued for weed abatement and fire control, as well as to provide a perpetual view into the site's historic agricultural past.

Exhibit 50: Wetland Preserve (Subject to change)



3.10 INFRASTRUCTURE

3.10.1 Sanitary Sewer

The Ranch SPA is located within Area 2 of the BR East Rancho Expansion Trunk Shed (2015 Amendment) of the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD}. SASD amended the BR East Rancho Trunk Shed in 2015, ahead of the scheduled 2020 System Capacity, to include The Ranch in the buildout expansion facilities. At build-out, The Ranch SPA will be served by a trunk main connecting to the existing Aerojet Interceptor 1B located in Chrysanthy Boulevard (east of Rancho Cordova Parkway), which drains to Location #1 Outfall at S132 Chrysanthy Pump Station.

The following Sewer Service Standards and Guidelines are identified to ensure necessary infrastructure is provided in a timely manner, consistent with the project-phasing plan:

- The City of Rancho Cordova General Plan citywide policy mandates public sewer service for new residential developments of densities greater than one unit per two acres. Consistent with this policy, the SPA will be served by a public sewer collection system.

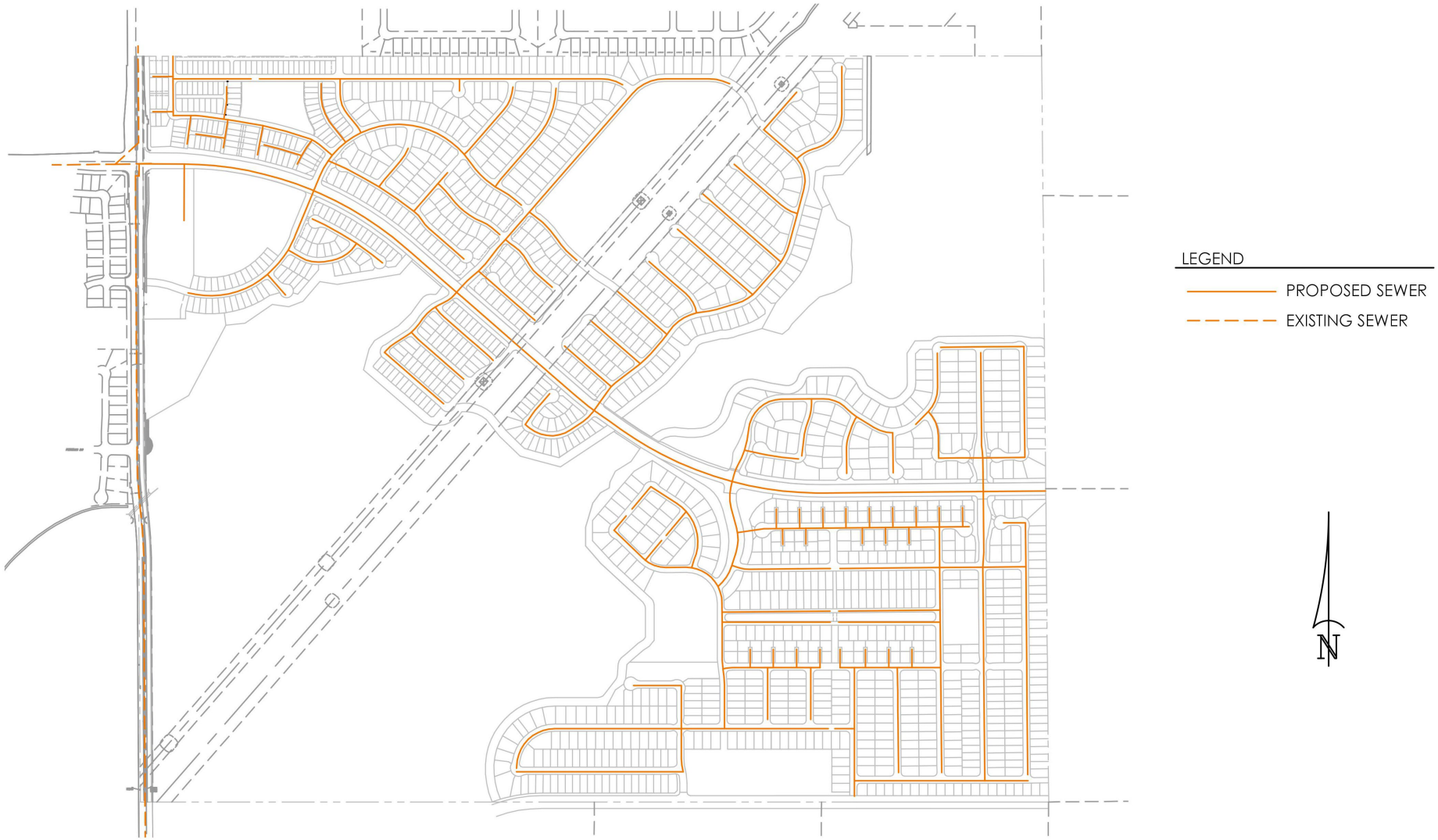
- Design and construction of phased sewer infrastructure into and through the Plan Area will be done with the approval and to the satisfaction of the City of Rancho Cordova and SASD staff, per SASD Sewer Ordinance (Effective 2/9/2018).

- Building permits for proposed projects shall not be approved until an approved Sewer Study for the Plan Area is approved by SASD.

- Interim sewer facilities, if required for phased development of the Plan Area, shall be designed in consultation with SASD and SRCSD.

The proposed on-site sewer collection system is illustrated in Exhibit 51.

Exhibit 51: Sanitary Sewer (Subject to change)



3.10.2 Water Service

The Ranch SPA is within service area Zone 40 of the Sacramento County Water Agency (SCWA). SCWA will provide water service to each developable parcel and building of The Ranch SPA. The SCWC has an adequate source of water to meet the needs of The Ranch SPA as outlined in their letter provided to the City of Rancho Cordova. A water distribution system, constructed in phases, in and through The Ranch SPA will consist of a 24-inch, 12-inch and 8-inch diameter pipes, providing water to each of the proposed land uses in the quantity and pressure necessary for the intended development. Development of the project's water system will be consistent with the Regional Water Forum Agreement. Each project development phase will convey water in the appropriate quantity and pressure to support the proposed level of development without impacting the surrounding area.

Water demands were projected for The Ranch SPA based on the land uses identified and the standard methodology implemented by the SCWA. The projected demands are similar to the existing water uses within the SCWA service area. The proposed water distribution system has been designed and sized to service this demand.

The following Water Service Standards and Guidelines are identified to ensure necessary infrastructure is provided in a timely manner, consistent with the project phasing plan:

- The City of Rancho Cordova General Plan Citywide policy mandates public water service for new residential developments of densities greater than one unit per two acres. Consistent with this policy, The Ranch SPA will be served by a public water distribution system.

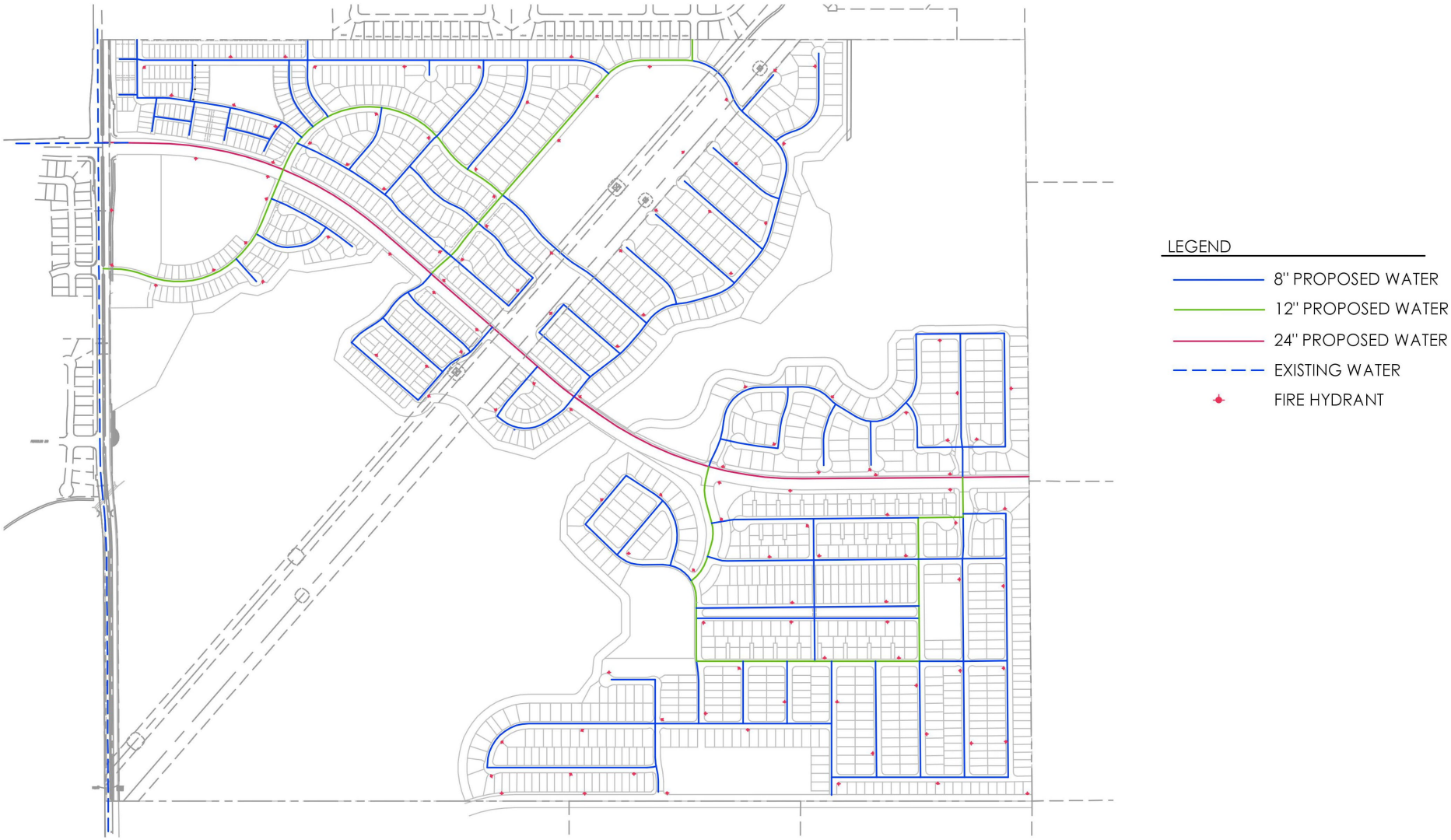
- Design and construction of phased water infrastructure into and through The Ranch SPA will be done with the approval and to the satisfaction of the City of Rancho Cordova and SCWA staff.

- The Ranch SPA is required to connect to the existing SCWA system at a minimum of two locations. Interim water facilities, if required for phased development of the Plan Area, shall be designed in consultation with the City of Rancho Cordova, SCWA staff, and coordination with adjacent projects.

- Building permits for proposed projects shall not be approved until SCWA staff approves a Water Distribution Plan for The Ranch SPA. In addition, Building Permits for the proposed project shall conform to the specific provisions of the City of Rancho Cordova Landscaping Ordinance (Municipal Code Title 23, Chapter 23.716).

The proposed on-site water distribution system is illustrated in Exhibit 52.

Exhibit 52: Water Service (Subject to change)



3.10.3 Drainage

The Ranch SPA topography is characterized by gently rolling terraces, numerous hills, and depressions. Current land use is cattle grazing. The unnamed tributary to the lower Morrison Creek South meanders down the middle, generally from the northeast to southwest.

The project consists of two development areas at the northwest and southeast quadrants, with the remaining area left as open space and an environmental corridor for the Lower Morrison Creek South. The northwest quadrant will drain to the Lower Morrison Creek South, and the southeast quadrant will drain to both the Lower Morrison Creek South and Kite Creek.

The open spaces will also include detention basins that will provide water quality and stormwater management. The management includes capture and treatment of summer irrigation flows, hydromodification of storm runoff, and attenuation of very large storms so that post-project flow rates are equal to or less than existing conditions. There will be three basins to manage runoff from the northwest quadrant development and two basins to manage the southeast quadrant stormwater runoff. Adequate overland release paths to convey runoff in excess of storm drainage collection pipe capacities shall be provided.

With the exception of a major road crossing (Chrysanthy Boulevard) and four outflows from the respective detention basins, the unnamed tributary to LMCS will remain as a meandering channel within an open space corridor. The outfall for the southern portion of the Southeast quadrant into Kite Creek is tentatively planned to be part of a larger outfall that will serve the proposed Sun Creek Specific Plan.

The following Drainage Service Standards and Guidelines are identified to ensure necessary infrastructure is provided in a timely manner, consistent with the project-phasing plan:

- Design and construction of phased drainage infrastructure into and through The Ranch SPA will be done with the approval and to the satisfaction of the City of Rancho Cordova.

- Building permits for proposed projects shall not be approved until the City of Rancho Cordova approves a Drainage Study of The Ranch SPA.

- Interim drainage facilities, if required for phased development of The Ranch SPA, shall be designed in consultation with City of Rancho Cordova staff.

The proposed on-site drainage system is illustrated in Exhibit 53.

Exhibit 53: Drainage Map (Subject to change)

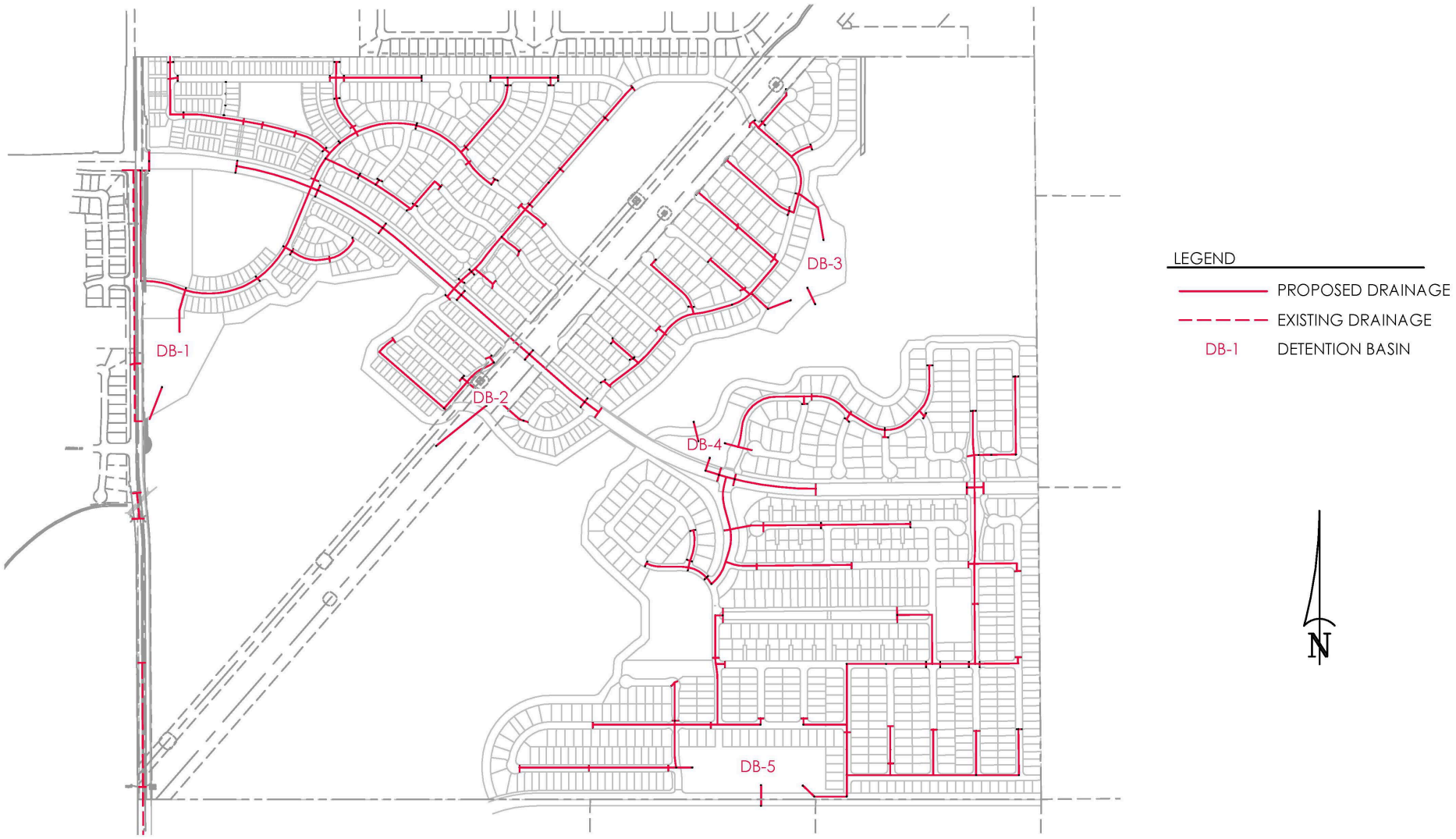
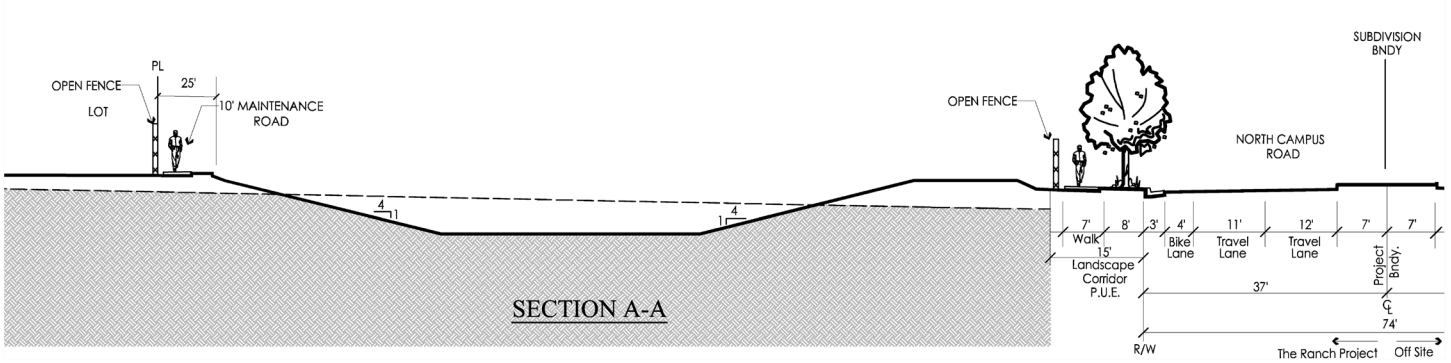
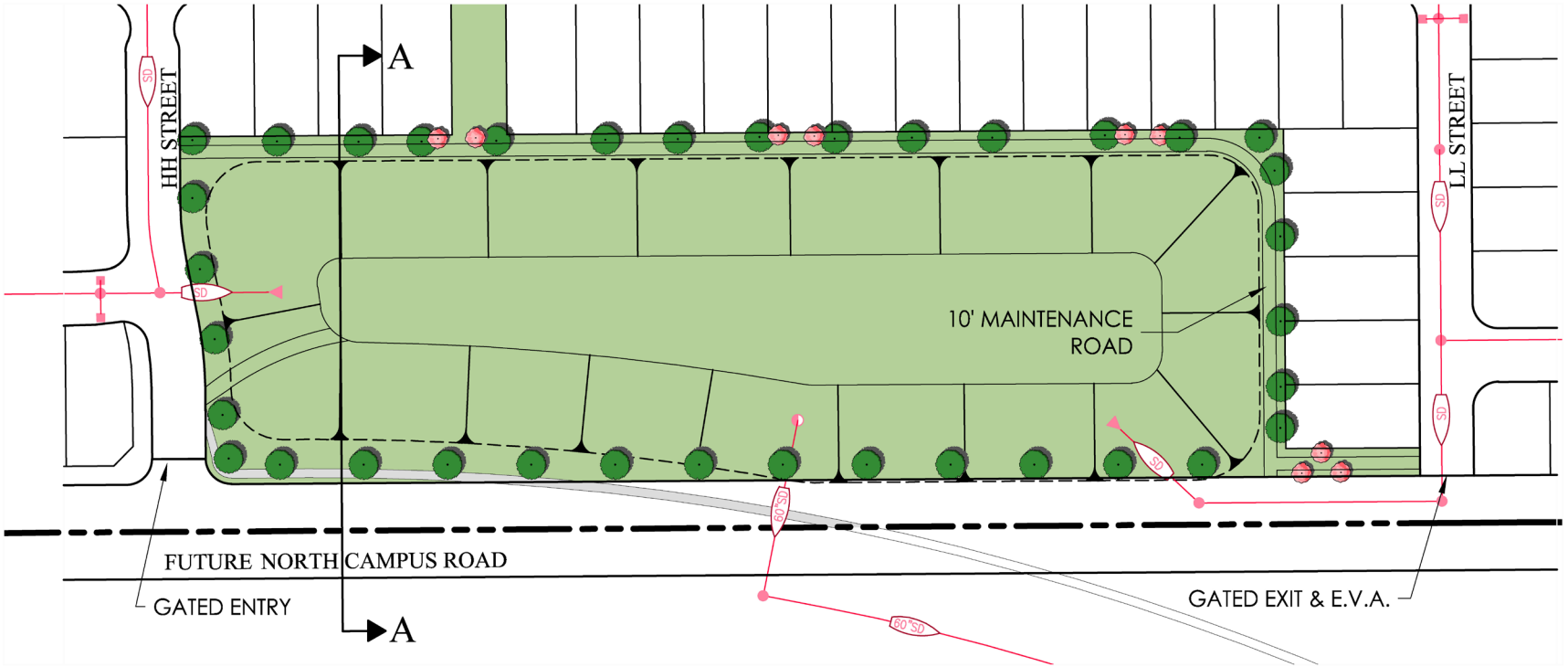


Exhibit 54: Section A-A Drainage Basin Illustration (Subject to change)

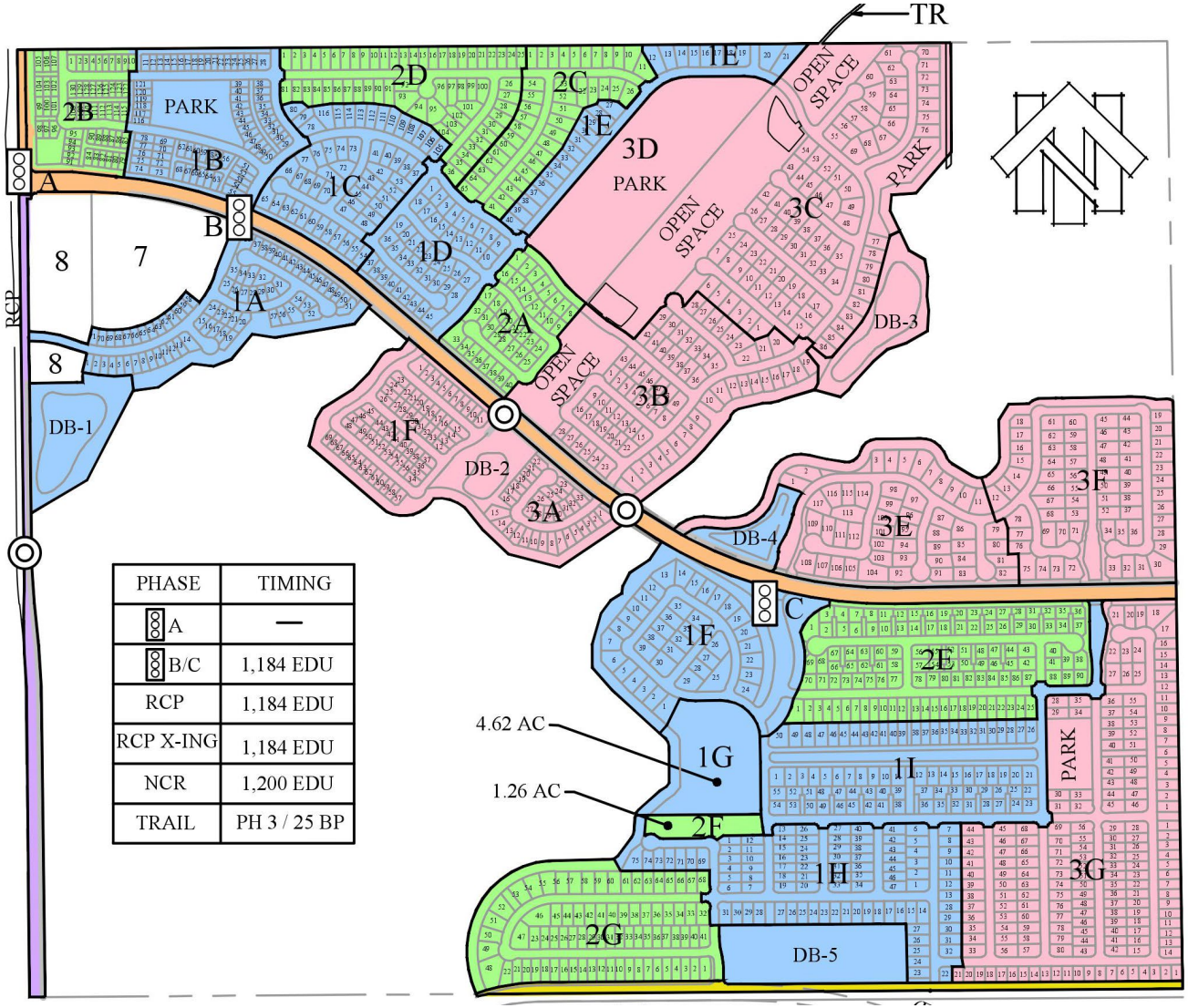




3.10.4 Phasing

A phasing plan has been prepared and included to demonstrate the logical, timely and appropriate completion of the infrastructure and roadway facilities, required to serve the phased build-out of the Plan Area. Refer to Exhibit 55 on the following page for the Phasing Map.

Exhibit 55: Phasing Plan (Subject to change)



PHASE	TIMING
A	—
B/C	1,184 EDU
RCP	1,184 EDU
RCP X-ING	1,184 EDU
NCR	1,200 EDU
TRAIL	PH 3 / 25 BP

LEGEND

PHASE BOUNDARY

(P) TRAFFIC SIGNAL

(P) PEDESTRIAN PUSH BUTTON

DB = DETENTION BASIN

BP = BUILDING PERMIT

A	B
BASIN LOCATION	PHASES DEPENDENT ON BASIN COMPLETION
DB-1	1A, 1B, 1C, 1D, 1E, 2A, 2B, 2C, 2D, 3D, 7 & 8
DB-2	3A
DB-3	3B & 3C
DB-4	1F & 2E /3E, 3F (PARTIAL)
DB-5	1G, 1H, 1I, 2F, 2G & 3G 3F (PARTIAL)

CITY OF RANCHO CORDOVA

ORDINANCE NO. XX-2020

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF RANCHO CORDOVA APPROVING DEVELOPMENT AGREEMENT FOR THE RANCH PROJECT

THE CITY COUNCIL OF THE CITY OF RANCHO CORDOVA DOES ORDAIN AS FOLLOWS:

Section 1. Recitals

A. In order to strengthen the public planning process, encourage private participation in comprehensive planning and reduce the economic risk of development, the Legislature of the State of California adopted Section 65864, et seq., of the Government Code (the "Development Agreement Statute"), authorizing the City, and any person having a legal or equitable interest in the real property, to enter into a development agreement and establish certain development rights in the property, which is the subject of the development project application. Pursuant to Government Code section 65868, Development Agreements may be amended by mutual assent of the parties.

B. The Ranch Special Planning Area Project ("Project" or "Special Planning Area") is a plan for a mixed-use development with a broad range of residential uses, commercial, parks/open space, natural resources, and associated infrastructure and roads on an approximately 530-acre site in the City. The Project includes 1,690 residential units at various densities; of that number of residential uses, 743 residential units are active adult, 5.73 acres of commercial, 14.36 acres of community and neighborhood parks, 8.99 acres of private parks; stormwater detention basins; open-space areas, trails, major roads with landscaping; and a 200 acre wetland natural resource/preserve; and

D. The Special Planning Area's purpose is to create a cluster of walkable residential neighborhoods and a commercial area with park/open space and a 200 plus acre natural resource area. The residential neighborhoods will create a distinctive district for the City and house a work force to enhance the City's jobs/housing balance.

E. In compliance with the requirements of the California Environmental Quality Act ("CEQA"), the City prepared an Environmental Impact Report for the Special Planning Area ("EIR").

F. The property within the Specific Plan area is owned by K. Hovnanian at Jaeger Ranch, LLC (referred to as "Landowner").

G. The Landowner has agreed to enter into a development agreement for The Ranch Special Planning Area. The attached development agreement, attached hereto as Exhibit A ("Development Agreement"), and cover the Special Planning Area.

H. On ____, 2020, the City Council, pursuant to Resolution No. **-2020, certified the EIR, adopted mitigation findings pursuant to CEQA guidelines Section 15091, adopted a statement of overriding considerations, and adopted a mitigation monitoring plan for the Special Planning Area, which covered the attached Development Agreement.

I. On____, 2020, the City Council, as the legislative body for purposes of Development Agreement approval, held a properly noticed public hearing pursuant to Government Code section 65867, and considered all comments received, in writing, and all testimony received at the public hearing.

Section 2: Findings

On the basis of (a) the foregoing Recitals, which are incorporated herein, (b) The Ranch Special Planning Area, (c) the City of Rancho Cordova's General Plan, (d) the Environmental Impact Report for The Ranch Special Planning Area, and (e) on the basis of the specific conclusions set forth below, the City Council finds and determines that:

A. Finding: *The development agreement is consistent with the General Plan objectives, policies, land uses, and implementation programs and any other applicable Specific Plans.*
Evidence: The Development Agreement is consistent with the objectives, policies, general land uses and programs specified and contained in the City's General Plan. In accordance with Government Code section 65867.5(b), the Development Agreement vest the Landowners' right to proceed with development of the property in accordance with the Special Planning Area. The Development Agreement does not amend or revise the development standards in the Special Planning Area. Therefore, the Development Agreement will be consistent with the General Plan if development under the Special Planning Area is consistent with the City's General Plan. The findings and evidence to support this General Plan consistency determination are set forth in the Special Planning Area, 2.2 "General Plan Consistency," Furthermore, (a) the land use designation for The Ranch site allows for residential, commercial, parks/open space, and natural resources, (b) the project is consistent with the fiscal policies of the General Plan and the proposed TRSPA with respect to provision of infrastructure and public services, and (c) the Development Agreement includes provisions relating to financing, construction and maintenance of public facilities, park development fees and similar provisions set forth in The Ranch Special Planning Area.

B. Finding**:** *The development agreement is in conformance with the public convenience and general welfare of persons residing in the immediate area and will not be detrimental or injurious to property or persons in the general neighborhood or to the general welfare of the residents of the city as a whole.*
Evidence: As described above, the development agreement and the project it allows for, are consistent with the proposed General Plan Amendment and Special Planning Area for this site and therefore the development agreement promotes the orderly development of property as well as the preservation of property values, as area properties and their values would be, in part, based on this exact use occurring on this site in the future.

C. Finding: *The development agreement will promote the orderly development of property or the preservation of property values*.
Evidence**:** As described above, the development agreement and the project it allows for, are consistent with the proposed General Plan Amendment and Special Planning Area for this site and therefore the development agreement promotes the orderly development of

property as well as the preservation of property values, as area properties and their values would be, in part, based on this exact use occurring on this site in the future.

D. Finding: The development agreement does not pertain to any property in the protected 200-year floodplain, unless the development agreement contains conditions that will provide an urban level of protection to the property consistent with California Government Code Section 65865.5.

Evidence: The Development Agreement does not pertain to any property in the protected 200-year floodplain.

C. **CEQA Compliance.** In compliance with the requirements of CEQA, the City prepared an EIR for The Ranch project. On_____, 2020, the City Council adopted Resolution No. **-2020 certifying the EIR and adopting environmental findings, a statement of overriding consideration and a mitigation monitoring and reporting program for the Ranch Special Planning Area Project approvals. Resolution No. **-2020 is incorporated herein by reference.

Section 3: Approval of Development Agreement.

The City Council hereby approves the Development Agreement, attached hereto as Exhibit A, in a form approved by the City Attorney, and authorizes the City Manager to execute the Development Agreement. The attached Development Agreement is as follows:

A. Development Agreement by and between the CITY OF RANCHO CORDOVA and K. HOVNANIAN AT JAEGER RANCH, LLC;

Section 4: Recordation.

Within ten (10) days after the Development Agreement is executed by the City Manager, the City Clerk shall submit the Development Agreement to the County Recorder for recordation.

Section 5: Severability.

If any section, subsection, clause or phrase of this Ordinance is for any reason held to be invalid or unconstitutional by the decision of a court of competent jurisdiction, it shall not affect the remaining portions of this Ordinance that can be given effect without the invalid provision and, to this end, the provisions of this Ordinance are severable. This City Council hereby declares that it would have adopted this Ordinance irrespective of the invalidity of any particular portion thereof and intends that the invalid portions should be severed, and the balance of the Ordinance enforced.

Section 6: Publication and Effective Date.

Within fifteen (15) days after adoption, a summary of this Ordinance shall be published once in the Grapevine Independent or the Sacramento Bee, a newspaper of general circulation printed and published in Sacramento County and circulated in the City of Rancho Cordova, in accordance with Government Code section 36933. This Ordinance shall take effect and be enforced thirty (30) days after its adoption.

PASSED AND ADOPTED by the City Council of the City of Rancho Cordova this _____ day of _____, 2020, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

_____
Dave M. Sander, Mayor

ATTEST:

_____
Stacy Leitner, CMC
City Clerk

OFFICIAL BUSINESS
Document entitled to free recording
Government Code Section 6103

RECORDING REQUESTED BY
AND WHEN RECORDED MAIL TO:

City of Rancho Cordova
2729 Prospect Park Drive
Rancho Cordova, CA 95670
Attn: City Clerk

(SPACE ABOVE THIS LINE RESERVED FOR RECORDER'S USE)

DEVELOPMENT AGREEMENT

BY AND BETWEEN

THE CITY OF RANCHO CORDOVA

AND

K. HOVNANIAN AT JAEGER RANCH, LLC

"THE RANCH"

DEVELOPMENT AGREEMENT
"THE RANCH"

This Development Agreement ("Agreement" or "Development Agreement") is entered into as of this ___ day of _____, 2020 by and between the CITY OF RANCHO CORDOVA, a municipal corporation ("City"), and K. HOVNANIAN AT JAEGER RANCH, LLC, a California Limited Liability Company ("Developer"), pursuant to the authority of Government Code section 65864 et. seq., relating to Development Agreements. City and Developer are hereinafter collectively referred to as the "Parties" and singularly as "Party."

RECITALS

A. **Authorization**. To strengthen the public planning process, encourage private participation in comprehensive planning and reduce the economic risk of development, California Government Code section 65864, *et seq.* (the "Development Agreement Statute") and Rancho Cordova Municipal Code chapter 23.158, authorize City and any person having a legal or equitable interest in the real property to enter into a Development Agreement, establishing certain development rights in the Property which is the subject of the development project application.

B. **Definitions**. All capitalized terms as used herein are defined in Section 3 of this Agreement or otherwise herein.

C. **Property**. Developer owns in fee title that certain 530-acre parcel located in the City of Rancho Cordova, County of Sacramento, more particularly described in **Exhibit A** and **Exhibit B**, attached hereto (the "Property"). The marketing name for the Project is "The Ranch."

D. **Public Hearing and Approval of this Agreement**. On _____, 20__, the City Council, serving as City's planning agency for purposes of Development Agreement review pursuant to Government Code section 65867 and Rancho Cordova Municipal Code chapter 23.158, held a public hearing to consider this Development Agreement. Following the hearing, the City Council introduced City of Rancho Cordova Ordinance No. __-20__ approving this Agreement. City Council approved Ordinance __- 20__ on _____, 20__.

E. **Environmental Review**. In compliance with the California Environmental Quality Act ("CEQA"), on _____, 201__, by Resolution No. __- 20___, City certified the Ranch Project Environmental Impact Report ("EIR").

F. **Development Agreement Ordinance**. City and Developer have taken all actions mandated by, and fulfilled all requirements set forth in, Rancho Cordova Municipal Code chapter 23.158, the Development Agreement Ordinance of the City of Rancho Cordova.

G. **Consistency with General Plan**. Having duly examined and considered this Development Agreement and having held properly noticed public hearings hereon, in City Ordinance No. XX-201X, City found that this Development Agreement satisfies Government Code section 65867.5, and this Agreement is consistent with the requirements of the General Plan.

H. **Negotiations**. The Parties have, in good faith, negotiated terms set forth in this Development Agreement, which terms are intended to carry out the legislative purposes of the Development Agreement Statute and Municipal Code chapter 23.158, and which provide for the mutually desirable development of the Property.

AGREEMENT

1. **Incorporation of Recitals**. The Preamble, the Recitals, all defined terms set forth herein, and all exhibits attached hereto, are hereby incorporated into this Development Agreement as if set forth herein in full.

2. **Relationship of City and Developer**. This Development Agreement is a contract that has been negotiated and voluntarily entered into by City and Developer. Neither Party is an agent of the other Party. City and Developer renounce the existence of any form of joint venture or partnership between them. Nothing contained in this Agreement, or in any document executed in connection with this Agreement, may be construed as making City and Developer joint venturers or partners.

3. **Definitions**.

"Age-Restricted Community" means a subdivision which is developed, occupied, and maintained as a "senior citizen housing development" as currently defined in California Civil Code Sections 51.3 and 51.11.

"Affordable Housing Plan" means the plan attached hereto as **Exhibit I**, prepared for the Project in compliance with the City of Rancho Cordova General Plan Housing Element, and in particular with Policy H.1.5, and approved by City on _____, 201_, by Resolution No. __-201__, and implemented pursuant to the Affordable Housing Plan between City and Developer. The Affordable Housing Plan identifies the plans to provide adequate affordable housing in the Project.

"Approved Tentative Map" means the Small Lot Subdivision Map for The Ranch dated June, 2018, with last revision dated November 2019 prepared by Wood Rodgers civil engineers which approval by City Council, if at all, is anticipated to be concurrent with this Development Agreement.

"Backbone Infrastructure" means the infrastructure improvements generally described and listed as Backbone Infrastructure on **Exhibit G**, Guiding Principles for Funding Backbone Infrastructure.

"CC&R Enforcement" means enforcement by Developer and/or a Homeowners Association and/or City of covenants, conditions and restrictions that are recorded against the single family portions of the Property to protect, preserve and maintain the appearance, condition, function and operation of such single family development.

"City CCI Index" means the construction cost index applied by City in documents authorizing the subject fee, assessment or tax to adjust fees to account for changes to the costs of constructionas published by the Engineering News Record, and as may be revised by the City for such Fee Programs.

"City CPI Index" means the Consumer Price Index for San Francisco-Oakland-Hayward (includes 4 Northern California counties) compiled by the US Bureau of Labor Statistics, which is applied by City to adjust the fees, assessments or taxes for changes in the costs of performing and/or providing municipal services.

"City Council" means the City Council of the City of Rancho Cordova.

"Core Backbone Road Infrastructure" means infrastructure roadway improvements to major roadways planned by City, as further described, identified, and listed on **Exhibit G**.

"CRPD" means the Cordova Recreation and Park District.

"Developer's Property" or "Property" means that certain portion of the Project Area located in the City of Rancho Cordova, County of Sacramento, more particularly described in **Exhibit A** and **Exhibit B**, and attached hereto, which is subject to this Development Agreement.

"EDU" means the single-family residential equivalent dwelling unit, as applicable within the context of the applicable improvement, facility or service. All other land uses are assigned EDUs based on their relative impact compared to a single family unit with respect to the applicable improvement, facility or service.

"Entitlements" means

(a) that certain General Plan Amendment approved by Resolution No. __-20__ on _____;

(b) that certain Tentative Large Lot Subdivision Map approved by Resolution No. __-20__ on _____;

(c) that certain Tentative Small Lot Subdivision Map approved by Resolution No. __-20__ on _____;

(d) that certain Special Plan, approved by City on _____, 20__, by Ordinance No. __-20__;

(e) the "Environmental Impact Report" or "EIR" certified by Resolution No. __-20__ on _____;

(f) this Development Agreement, approved by City on _____, 20__, by Ordinance No. __-20__ (the "Adopting Ordinance");

(g) the Affordable Housing Plan approved by City on _____, 20__, by Resolution No. __-20__; and

(h) zoning of the Property approved by City on _____, 20__, by Ordinance No. __-20__.

"General Plan" means the City of Rancho Cordova General Plan, including all appendices thereto, approved by City as of the date of this Agreement.

"Homeowners Association" means an association of owners within the portions of the Property zoned for single family use that is formed and operated, in part, to provide CCR Enforcement.

"Neighborhood Green" means open space to be dedicated pursuant to the Special Planning Area to supplement the park amenities provided by the Parks dedications.

"Parks" means the community and neighborhood parks to be dedicated pursuant to the Special Planning Area.

"Phasing Plan" – means the Infrastructure Phasing Plan that the Developer has prepared pursuant to Section 7.3, and attached to this Development Agreement as shown on **Exhibit C**.

"Private Facilities" means the private facilities generally described and listed as Private Facilities in **Exhibit F**.

"Project" means the planned development of the Property pursuant to the Entitlements.

"Public Facilities" means the public facilities owned by the City, CRPD, or other public agency.

"Regional Trail Network" refers to a system of trails, both existing and planned, that crisscross through the Special Planning Area, as identified in Section 3.8.3 of the Special Planning Area Handbook.

"Small Lot Subdivision Map" means a subdivision map processed and approved pursuant to the Subdivision Map Act that, upon recordation thereof, will create either individual lots or parcels upon which permits for the construction of single-family residential units are intended and may be issued, or for the construction and sale of individual condominium units within a parcel for multifamily residential use.

"Special Plan" means the Special Planning Area Handbook, dated _____ prepared by Developer, including all appendices thereto adopted by City on _____, 2019, by Ordinance XX-2019.

"Special Planning Area" means the entire 530.1 acre area which is the subject of The Ranch Special Planning Area Handbook.

"Subsequent Entitlements" mean those additional permits, plans and approvals that may be approved following approval of the Entitlements, and which will allow for implementation of the Entitlements by subdivision, development and construction within the Project Area. Subsequent Entitlements may include, without limitation, small lot final subdivision maps, parcel maps for non-residential areas, lot line adjustments, conditional use permits, and design review permits.

"TDIF" means City's Transportation Development Impact Fee, as adopted and as revised by City from time to time.

"Turnkey Construction" means the developer is responsible to the agency of jurisdiction ("Agency") for the management and funding of the development, design and construction of the improvements on the parcel(s) that will be deeded to the agency or for parcels the developer will be granted credit for public purpose. The developer must comply with the requirements of the agency's requirements for turnkey process that specifies the agency's oversight and ultimate approval of the end product.

4. Effective Date, Term and Termination.

4.1. Effective Date. The effective date of this Development Agreement ("Effective Date") is _____, 20__ which is the effective date of City Ordinance No. __-20__, adopting this Development Agreement.

4.2. Term. The term of this Development Agreement commences on the Effective Date and extends for a period of twenty (20) years from the Effective Date, unless said term is terminated, modified or extended consistent with the terms of this Development Agreement. This Development Agreement automatically terminates upon expiration of the 20-year term and shall then be of no further force and effect, unless otherwise extended by the Parties. If and when this Development Agreement expires, Developer shall thereafter retain no vested rights under the Entitlements of this Development Agreement, and City shall have the right to modify or repeal the Entitlements and apply new laws, regulations and fees to the development of the Property.

4.3. Tolling and Extension During Legal Challenge or Moratoria. Developer may, at its discretion, extend the term of this Development Agreement for a maximum period of three years pursuant to Gov. Code 66452.6(b-c):

4.3.1. a third-party lawsuit is filed challenging any of the Entitlements or challenging the EIR related to this Project;

4.3.2. the Developer is unable to proceed, or elects not to proceed, with the Project because of litigation described in Section 4.3.1 above; and

4.3.3. the Developer submits to City written notice that this Agreement is tolled.

During any such period that the Agreement and development of the Project are being tolled by Developer, Developer may, at its sole expense and risk, submit applications to process Subsequent Entitlements, including tentative subdivision maps and improvement plans for the Property, provided City shall not be obligated to approve and may defer approval of any final subdivision maps, improvement plans or building permits for the Property during any such tolling period.

4.4. Length of Extension. The tolling period will begin when City receives written notice from the Developer. The tolling period may only extend the term of this Agreement until a final order of judgment is issued upholding the challenged Entitlements or the EIS, as applicable, the case is dismissed, or the three-year

maximum tolling period is reached, whichever is shorter. The Developer may also elect to end the tolling period at any time and proceed with the Project, effective upon delivery of a written notice to City.

5. Vested Rights. Developer shall have the vested right to proceed with development of the Property in accordance with the Entitlements and to have Subsequent Entitlements considered for approval or denial, based upon the terms, standards and requirements set forth in the Entitlements, including without limitation, the Special Plan and Small Lot Subdivision Maps. Except as provided in this Section 5 below, this Agreement does not vest Developer's rights to pay development impact fees, exactions, processing fees, inspection fees, plan check fees, or other permit processing fees or charges.

5.1. Permitted Uses, Density and Intensity, Maximum Height and Size of Structures, and Reservation or Dedication of Land Vested. The permitted uses of the Property, the density and intensity of use, the maximum height and size of proposed buildings, provisions for reservation or dedication of land or payment of fees in lieu of dedication for public purposes, the location and maintenance of on-site and off-site improvements, the location of public utilities, and other terms and conditions of development shall be those set forth in the Entitlements, including the approved Small Lot Subdivision Map shows acreages of the proposed land uses. The Ranch Special Planning Area include the land uses and approximate acreages for the Project as shown and described in Section 1.5 of the Special Plan.

5.2. Vested Against Moratorium, Quotas, Restrictions or Other Growth Limitations. Subject to applicable law relating to the vesting provisions of Development Agreements, City agrees that, except as otherwise provided in or limited by the provisions of this Agreement, this Development Agreement vests the Entitlements against subsequent City ordinances, resolutions, rules, regulations, initiatives, and official policies that directly or indirectly limit the rate, timing, or sequencing of development, or prevent or conflict with the permitted uses, or the density or intensity of uses, or the terms, provisions, standards or requirements for development, as set forth in the Entitlements. To the extent allowed by the laws pertaining to development agreements, however, Developer will be subject to any growth limitation ordinance, resolution, rule, regulation, or policy which is adopted on a uniformly applied, Citywide or area-wide basis, and directly concerns an imminent public health or safety issue, in which case City shall treat in a uniform, equitable and proportionate manner all properties, public and private, which are impacted by that public health or safety issue.

5.3. Vested Rights Exclude Design and Construction. All ordinances, resolutions, rules, regulations, initiatives, and official policies governing design, improvement and construction standards and specifications applicable to the Project, and to public improvements to be constructed by the Developer shall be those in force and effect at the time the applicable permit approval is granted, unless such ordinances, resolutions, rules, regulations, initiatives or official policies are inconsistent with the Entitlements, or the specific terms of this Agreement, in which case the Entitlements, and the terms of this Agreement shall prevail.

5.4. Vested Rights Exclude Changes in State or Federal Law. This Agreement shall not preclude the application to development of the Property of changes in City laws, regulations, plans or policies, the terms of which are specifically mandated and required by changes in state or federal law or regulation. In the event that state or federal laws or regulations enacted after the Effective Date of this Development Agreement prevent or preclude compliance with one or more provisions of this Agreement or any Entitlements, the Parties shall meet and confer in good faith in a reasonable attempt to modify this Agreement and such Entitlements to comply with such federal or state law or regulation. Any such amendment or suspension of this Agreement or Entitlements shall be approved by the City Council in accordance with the Municipal Code and this Agreement.

5.5. Vested Rights Exclude Building and Fire Codes. The Project shall be constructed in accordance with the provisions of the Uniform Building, Mechanical, Plumbing, Electrical and Fire Codes, City standard construction specifications, and Title 24 of the California Code of Regulations, related to Building Standards (collectively "Building Code"), in effect at the time the applicable building, grading, encroachment or other construction permit is granted for the Project. If no permits are required for infrastructure improvements, such improvements will be constructed in accordance with the provisions of the Uniform Building, Mechanical,

Plumbing, Electrical and Fire Codes, City standard construction specifications, and Title 24 of the California Code of Regulations, related to Building Standards, in effect at the time of approval by City of the improvement plans for such infrastructure. If a permit that has been granted expires, the Project shall be required to be constructed in accordance with the provisions of the Uniform Building, Mechanical, Plumbing, Electrical and Fire Codes, City standard construction specifications, and Title 24 of the California Code of Regulations, related to Building Standards, in effect at the time the applicable replacement permit to the expired building, grading, encroachment or other construction permit is granted for the Project.

5.6. Vested Rights Exclude Processing Fees and Charges. Developer shall pay those processing, inspection, and plan check fees and charges required by City under ordinances, resolutions, rules, regulations, initiatives, and official policies which are in effect when such fees or charges are due under then-existing code or policy.

5.7. Vested Rights Limited for Development Impact Fees, Exactions and Dedications. Developer shall pay all development impact fees, connection or mitigation fees, and exactions required by City to support the construction of any public facilities and improvements or the provision of public services in relation to development of the Property (together "Exactions") authorized by City after the Effective Date, as long as said Exactions otherwise comply with applicable law, and are either (i) required on a Citywide basis, (ii) apply uniformly to all properties within City that are zoned with density and uses similar to those of the subject properties in the Entitlements, or (iii) apply on a fair share basis to all properties that are similarly situated within the portion of the City located south of Highway 50 and east of Sunrise Boulevard.

Except as otherwise provided in this Agreement and/or contemplated by the Special Plan Area, exactions required by City to be paid by Developer that do not meet one of the preceding criteria shall only be the Exactions that were authorized on the Effective Date. Furthermore, notwithstanding anything to the contrary in this Section 5.7, in consideration of Developer's obligations under Section 8 hereof to comply with the Affordable Housing Plan applicable to the Property, development of the Property shall not be subject to any other impact fee, mitigation fee or exaction related to the provision of affordable housing or inclusionary housing, or other such fee or exaction related to the provision of affordable housing or inclusionary housing that may be subsequently adopted by City during the period that this Section 5.7 is vested by this Agreement.

5.8. Subsequent Entitlements. Subject to Section 14.1.1 hereof, City shall accept for processing, review and action any and all applications submitted by Developer for Subsequent Entitlements, necessary or convenient for the exercise of Developer's rights under the Entitlements for the use and development of the Property.

5.9. Term of Tentative Maps. Consistent with the authority provided in Government Code section 66452.6(a)(1), the term of any tentative subdivision map approved for all or any portion of the Property shall be the later of the date this Agreement expires or the date the tentative map expires pursuant to City approval of the tentative map pursuant to the City of Rancho Cordova Municipal Code, including without limitation Section 22.20.060 ("Expiration of Tentative Map Approval"), as it may be modified from time to time by state law.

5.10. CC&R Enforcement and Property Maintenance Code. Developer agrees to establish, with input from City, and record covenants, conditions and restrictions ("CC&Rs") against the individual parcels within the Project prior to their sale that will protect, preserve, and maintain the appearance, condition, function and operation of the single family home development in a similar manner to the City's Property Maintenance Code within Sections 16.18.1700 through 16.18.1709 of the City's Municipal Code, as may be amended from time to time. City may impose a condition, as part of subsequent approvals, for the Developer to include a copy of the Property Maintenance Code as part of individual home sale documents. City may impose a condition, as part of subsequent approvals for single family development, for the Developer to establish a mechanism acceptable to City to provide for CC&R Enforcement within the single family portions of the Property by Developer and/or a Homeowners Association.

If City elects to develop a City program for providing CC&R Enforcement that includes the Project Area and to form a financing mechanism to fund the costs of such program, Developer shall retain the option, at its sole discretion, to elect to either include the Property for participation in City's CC&R Enforcement Program or to provide such CC&R Enforcement for the Property through a Homeowners Association, separate and apart from City's program. If Developer elects to provide its own CC&R Enforcement through a Homeowners Association, so long as the Homeowners Association provides adequate CC&R Enforcement within the Property comparable to City's CC&R Enforcement program, as confirmed by City in its reasonable discretion, City will exempt the Property from any special taxes or assessments otherwise levied by City to fund the costs of City's CC&R Enforcement program.

6. Park Development and Community Places Fee Obligations.

6.1. Park Development Fee and Community Places Fee.

i) Dedication of Parkland. Developer's obligation to dedicate 19.00 acres of park land to the Cordova Recreation and Park District (the "Park District") pursuant to California Government Code Section 66477 (the "Quimby Act") shall be satisfied by Developer's dedication of Lots T, D, and R to the Park District and by the creation of private park amenities in the Special Plan Area identified as Lots A, B, and C as set forth more specifically in **Exhibit E** (the "Dedicated Lands"). Developer's obligation to dedicate 3.80 acres of open space land to the City shall be satisfied by Developer's dedication of Neighborhood Greens to the City, identified as Lots C, S, Q, and U as set forth more specificially in **Exhibit E.** City agrees and acknowledges that Developer's dedication of the Dedicated Lands will satisfy the Developer's dedication requirements of Resolution No. 28-2005. Specific population factors of 2.95 persons per household ("pph") for market rate single family residential, 1.54 pph for multifamily residential, 2.0 pph for age-restricted single family residential, and 1.04 pph for the age-restricted multifamily residential products have been established and agreed upon for this Project.

ii) Park Development Fee and Community Places Fee – Market Rate Housing.

The Developer will pay a Park Development Fee in the amount of $9,931.37 per Market Rate Single Family EDU and a Community Places Fee in the amount of $1,421.19 per Market Rate Single Family EDU (excluding fee credits, as applicable) when each building permit for residential development is issued within market rate housing portion of the Project. Pursuant to the terms of a future Park Development Agreement between the Park District and Developer, the Park Development Fee shall be so reduced to reflect Developer construction of the neighborhood park on Lot T and the community park on Lot D and parking facilities on Lot R as agreed upon by the Park District. The Park Impact fee credits will be specified in the Park Development Agreement between the Park District and Developer. Pursuant to the terms of a future Credit/Reimbursement Agreement with the City, the Community Places Fee payable to the City shall be reduced to reflect Developer Turnkey Construction of the Neighborhood Green or other community places amenities as agreed upon by the City on Lots S, Q, U and a portion of Lot R.

iii) Park Development Fee and Community Places Fee – Age-Restricted.

The Developer shall Turnkey Construct all park and recreational facilities identified in the Special Plan on the parcels identified as Lots A, B, and C in **Exhibit E** in the Age-Restricted Community portion of the Project Pursuant to the terms of a future Park Development Agreement between the Park District and Developer, the Park Development Fee shall be so reduced to reflect Developer Turnkey Construction of the neighborhood park on Lot T and the community park on Lot D as agreed upon by the Park District. Pursuant to the terms of a future Credit/Reimbursement Agreement with the City, the Community Places Fee payable to the City shall be reduced to reflect Developer Turnkey Construction of the Neighborhood Green or other community places amenities as agreed upon by the City on Lots S, Q, U and a portion of Lot R.

iv) The Park Development Fees and the Community Places Fees shall be adjusted on January 1, 2020 and annually thereafter, no later than January 15th by the method provided in City CCI Index as follows:

(a) A "mean" index will be computed by averaging the index for 20 U.S. cities with the index for San Francisco by resort to the most recent October issue of the Engineering News Record Magazine Construction Cost Index.

(b) An adjustment factor shall be computed by dividing the "mean" index as calculated in subsection (a) of this Section by the "mean" index for the previous October.

(c) The adjusted Park Development Impact Fee and Community Places Fee shall be calculated by multiplying the adjustment factor, as calculated in subsection (b) of this Section, by the Park Development Impact Fee and the Community Places Fee in place prior to the annual adjustment.

6.2. Timing of Dedications of Parks. Prior to the recordation of any residential Small Lot Subdivision Map in the Project which contains a portion of the Dedicated Lands, Developer shall, at the sole discretion of City, to the extent permitted by law: (i) irrevocably offer for dedication to City or the CRPD that portion of the Dedicated Land that is encompassed within such residential Small Lot Subdivision Map and which is identified in the Specific Plan as a Park, (ii) irrevocably offer for dedication to City or the CRPD that portion of the Dedicated Land that is encompassed within such residential Small Lot Subdivision Map and which is identified in the Specific Plan as a Neighborhood Green, and (iii) enter into park development agreements with the CRPD or City, as applicable, for the improvement of the lands that CRPD or City will be dedicated within such residential Small Lot Subdivision Map. If and to the extent a park development agreement provides for the design and construction of any improvements included within the Park Development Fee or Community Places Fee, then the park development agreement shall include provisions for fee credits and/or reimbursements from the applicable Park Development Fee and/or Community Places Fee. The amount of any such Park Development Fee and/or Commnity Places Fee credits and reimbursements shall be based on the amount budgeted by the applicable Park Development Fee and/or Commnity Places Fee program for the cost of the creditable improvements, including soft costs and contingencies related thereto, and shall not be subject to adjustment based on the actual costs incurred by Developer to design and construct such creditable Park and/or Neighborhood Green improvements. In particular recognition of the importance of the timing of Park and Neighborhood Green construction in relation to the build out of adjacent subdivisions, Developer agrees that for all park development agreements, whether between the City and the Developer or between the Developer and CRPD, Developer must obtain the City's agreement to the terms regarding the timing of development of turnkey Parks and Neighborhood Greens in the Project prior to the approval of the tentative map for each phase, which agreement shall not be unreasonably withheld.

6.3. Community Renovation Fee. Developer agrees that it shall pay City the total sum of $1,193.17 for each single family dwelling unit and $932.16 for each multifamily dwelling unit (the "Community Renovation Fee"); provided that the Community Renovation Fee shall not be paid for any unit constructed on any parcel dedicated to the City pursuant to the Affordable Housing Plan. Beginning January 1, 2020, the Community Renovation Fee shall be adjusted annually on each January 1 based upon City CPI Index. The Community Renovation Fee shall be paid to City upon issuance of a building permit for each residential unit within the Property. It shall be used by City, at its sole discretion, to acquire, renovate, repair, improve or maintain community facilities, parks, Neighborhood Greens or other open space in the City. This payment is made voluntarily by Developer. It is paid in addition to all other existing park fees, and construction and dedication obligations, including without limitation any fees paid pursuant to California Government Code Section 66477 (the "Quimby Act"), and the Community Places Fee described in Section 6.1 above. Developer agrees that it shall not claim any credit against or right to reimbursement from any other existing park fees, and construction and dedication obligations, including Quimby Act fees, or the Community Places Fee as a result of paying the Community Renovation Fee required under this Section 6.3.

Developer voluntarily agrees to construct an off-tract segment of the Regional Trail Network that connects the Developer's northerly trail terminus to an existing trail terminus at Canyonlands Drive. City shall award Developer

fee credits towards the Community Renovation Fee in an amount equal to a City approved engineer's estimate of construction costs.

7. **Infrastructure and Maintenance Finance.**

7.1. Infrastructure Finance. Prior to approval of a Small Lot Subdivision Map, or for residential properties that do not require subdivision, prior to issuance of building permits, City and Developer will cooperate to establish one or more Mello-Roos Community Facilities Districts, pursuant to and as authorized by Government Code sections 53311 et seq., to fund necessary Backbone Infrastructure and Public Facilities.

7.2. Maintenance Finance. Prior to approval of a Small Lot Subdivision Map, or for residential properties that do not require subdivision, prior to issuance of building permits, City and Developer will complete all actions needed to form, annex into, and/or implement the funding mechanism(s), including financing districts and special taxes, to pay to maintain existing and new public improvements associated with or needed to serve the Project. Developer shall participate in, vote in favor of, and pay all costs incurred by City associated with such actions consistent with this Agreement, the SPA, or the conditions of approval on the Entitlement. The amount of special taxes or assessments to be included in each new maintenance or services district referred to herein and identified for formation shall not exceed the amounts reasonably determined by City during the formation of such finance district to fund the operations, maintenance and/or services to be financed thereby.

The funding mechanisms for such maintenance may include, but are not limited to the following:

7.2.1. Street, Lighting and Landscape Maintenance. Developer and City agree that the Developer will participate in or provide a funding mechanism for maintenance services for the fair share of existing and all new public improvements associated with the project including, but not limited to, streets, bridges/culverts, traffic signals, traffic signs, striping and legends, intelligent transportation systems (ITS), operations, streetlights and safety lights, and public frontage and median landscape improvements. This may be accomplished through annexation to the City's Communities Facilities District No. 2014-2 (Street, Lighting and Landscaping Maintenance), or other financial mechanism as may be proposed and provided by the Developer for the same purpose of providing a financial mechanism to fund the operation and maintenance of the Project's public improvements. If the Developer does not provide another financial mechanism, the Developer will support the annexation of the Project into CFD 2014-2, and cover the Developer's fair share costs of the CFD annexation not to exceed Five Thousand dollars ($5,000) per annexation. The Age-Restricted Community portion of the project will participate in this CFD at a reduced rate to reflect HOA maintenance of the private streets in the gated community and fair share City maintenance of public streets and soundwalls on public property. The reduced rate at FY 19/20 amounts are estimated to be $301.58 per single family unit and $171.91 per multifamily unit, such rates to inflate annually per the method described in the CFD.

7.2.2. Park Maintenance. Developer and City agree that the Developer will participate in or provide a funding mechanism for maintenance services for the Project's associated financial impacts to the operation, maintenance and capital replacement of existing and proposed public parks that are maintained by the Cordova Recreation and Park District. This may be accomplished through annexation to CRPD's Communities Facilities District No. 2018-1 (Park Facilities and Services), or other financial mechanism as may be proposed and provided by the Developer for the same purpose of providing a financial mechanism to fund the operation and maintenance of the Project's public park improvements. If the Developer does not provide another financial mechanism, the Developer will support the annexation of the Project into CFD 2018-1 (Park Facilities and Services), and cover the Developer's fair share costs of the CFD annexation not to exceed Seven Thousand dollars ($7,000) per annexation. The Age-Restricted Community portion of the Project will participate in this CFD at a reduced rate commensurate with the reduced benefit to this portion.

7.2.3. Community Places and Neighborhood Greens Maintenance. Developer and City agree that the Developer will participate in or provide a funding mechanism for maintenance services for the Project's associated community places and Neighborhood Greens. This may be accomplished through annexation to the City's Communities Facilities District No. 2018-2 (Community Places and Neighborhood

Greens), or other financial mechanism as may be proposed and provided by the Developer for the same purpose of providing a financial mechanism to fund the operation and maintenance of the Project's public community places and Neighborhood Green improvements. If the Developer does not provide another financial mechanism, the Developer will support the annexation of the Project into CFD 2018-2 (Community Places and Neighborhood Greens), and cover the Developer's fair share costs of the CFD annexation not to exceed Five Thousand dollars ($5,000) per annexation. The Age-Restricted Community portion of the project will participate in this CFD at a reduced rate to reflect HOA maintenance of the neighborhood greens in the gated community and fair share City maintenance of public community places, regional trails and neighborhood greens. The reduced rate at the FY 18/19 amount shall not exceed $48.83 per single family unit and $25.55 per multifamily unit, such rates to inflate annually commencing FY 19/20 per the method described in the CFD.

7.2.4. Support for a Special Tax for Transit-Related Services. The Property will be subject to a special tax on the Property to pay for transit related-services for the Project. The base year FY 2019/2020 Transit-Related Services Tax shall be $114.75 per low density residential unit, $91.80 per medium density residential unit, $68.65 per high density residential unit, $2,942.45 per acre for retail and service commercial, and $2,429.15 per acre for commercial mixed use. This special tax will be adjusted annually commencing with the FY 2020/2021 annual levy, in accordance with the City CPI Index.

7.2.5. Stormwater Utility Fee. Developer and City agree that the Developer will participate in or provide a funding mechanism for maintenance services for the Project's public stormwater drainage and flood protection system. This may be accomplished through annexation to the City's Stormwater Utility Fee District, or other financial mechanism as may be proposed and provided by the Developer for the same purpose of providing a financial mechanism to fund the operation and maintenance of the Project's public stormwater and flood protection system. If the Developer does not provide another financial mechanism for the public system, the Developer will support the annexation of the Project into the City's Stormwater Utility Fee District, and cover Developer's fair share costs of the annexation not to exceed Seven Thousand dollars ($7,000) per annexation. The Age-Restricted Community portion of the project will participate in this District at a reduced rate to reflect HOA maintenance of the detention basin in the gated community and fair share City maintenance of public drainage improvements. The reduced rate at FY 19/20 amounts are estimated to be $30.61 per single family unit and $287.19 per acre for the multifamily parcel, such rates to inflate annually per the method described in the CFD.

7.2.6. Annexation into CFD No. 2013-2 (Police Services). Prior to recordation of the first Small Lot Subdivision Map or for residential properties that do not require subdivision, prior to issuance of building permits, the Developer shall support the annexation of the Project into CFD 2013-2 (Police Services) and cover Developer's fair-share costs of the CFD annexation, not to exceed $5,000 for the Participating Developer's Properties. City agrees that the CFD will provide that on lands designated for all residential land use categories, the base year FY 2018/2019 Police Maximum Services Special Tax shall be Five Hundred Forty-four Dollars and Seventy-Six ($544.76) annually per residential dwelling unit, including multi-family units, or Three Hundred Sixty Three Dollars and Seventeen cents ($363.17) annually per Age-Restricted Community dwelling unit. The special tax imposed by the CFD will be payable on a parcel within the Property only after a building permit has been issued by City for the construction of a building on that particular parcel, and there will be no undeveloped land tax imposed by the CFD. The CFD shall further provide that on each July 1 commencing July 1, 2019, the base year Police Special Tax shall be escalated by the increase, if any, in the City CPI Index. However, in no event shall the tax per parcel for any fiscal year be less than the amount established for the prior fiscal year. The CFD shall specify that the Police Special Tax shall commence being payable annually following the issuance of a building permit for each parcel subject to the Police Special Tax.

The Developer acknowledges that no Small Lot Subdivision Map, or for residential properties that do not require subdivision, prior to issuance of building permits, shall be submitted to City for approval prior to annexation of the Property to the Police Services CFD; provided Developer may, at its own risk, process and obtain approvals of any tentative subdivision maps for the Property and submit applications for and process, but not obtain final approval of, any final subdivision maps and improvement plans related thereto.

7.2.7. Special Taxes. Developer agrees that it will not vote to repeal or amend any of the special taxes being imposed in the amounts or as set forth in Sections 7.2.1 through 7.2.6, inclusive, and that any such vote by Developer would constitute an event of default under this Agreement. In the event of such a default by Developer, then in addition to all other remedies available to City, Developer shall be obligated to annually pay under this Agreement the difference between the amount of the special taxes identified in Sections 7.2.1 through 7.2,6 after the Developer's vote to repeal or amend the tax, and the amount of the proposed Police Special Tax set forth above.

7.2.8. Homeowner Associations.

7.2.8.1. Age-Restricted Community. Developer hereby agrees to form a Homeowner Association to maintain certain infrastructure components in the Age-Restricted Community portion of the Project: residential streets, street lights, sidewalks, drainage facilities, private parks, frontage landscaping at the entrances, entrance gates, clubhouse recreation facility, and common areas and other amenities as appropriate, and similar portions of the Property as a common interest development under the Davis-Stirling Common Interest Development Act. A map of the facilities that shall be owned and maintained by the Homeowner Association is shown in **Exhibit F**.

7.2.8.2. Market Rate Portion. Developer shall form a separate Homeowner's Associaton for the Market Rate portion of the Project for the exclusive purpose of enforcing the CC&Rs that are recorded against the properties to protect, preserve, and maintain the appearance, condition, function, and operation of the entire Project.

7.2.8.3. CC&R Enforcement. The purpose of the Homeowner Associations will be to enforce the rules and regulations for both Market Rate and Age-Restricted Community portions of the Project as adopted from time to time by its board of directors, enhance and protect the value, desirability, and attractiveness of the community, and discharge such other lawful duties and responsibilities as may be required pursuant to its bylaws and the declaration of CC&Rs to be recorded in the Office of the Recorder of Sacramento County, State of California, with respect to the residential planned development. The City shall be identified on the CC&Rs as a third-party beneficiary for purposes of exercising the duties and covenants imposed therein and shall be entitled to, without obligation, take appropriate legal action to enforce those duties and covenants. If an action is commenced, the City shall be entitled to recover costs including attorneys' fees.

7.2.8.4. Discretionary Maintenance. Subject to City approval, Developer using Declarant powers has the option to specify other additional maintenance obligations as the responsibility of the Homeowner Association including public facilities, if Developer determines that the Homeowner Association can perform such obligations cost effectively. If Developer desires to exercise this option and City agrees, then the City funding mechanism for maintainence, such as a CFD, shall be modified so that the assessment applied to homeowner property tax bills is reduced to reflect the cost savings for item(s) to be maintained by the Homeowner Association.

7.2.9. Amounts and Effect of Alternative HOA Maintenance. As provided above pursuant to Sections 7.2.1, 7.2.2, 7.2.3, and 7.2.5, the fees, special taxes or assessments to be established for these additional financing districts shall not exceed the amounts reasonably determined by City to fund the operations, maintenance and/or services to be financed thereby, subject to annual adjustments thereto based on the City CPI Index. The final amounts of the fees, special taxes or assessments for these additional districts shall be established during the formation of such finance districts as part of the implementation of the Special Plan Area. Furthermore, if and to the extent a Homeowners Association elects to perform any of the maintenance obligations that would otherwise be performed by the districts described in Sections 7.2.1, 7.2.2, 7.2.3 or 7.2.5 above, subject to City's satisfaction, in its reasonable discretion, with the adequacy of the performance thereof by the Homeowners Association, the applicable maintenance financing districts shall include a mechanism whereby the amount of the special taxes or assessments to be levied thereby shall be credited by the savings

to be realized by the districts from the performance of such maintenance obligations by the Homeowners Association and the relieving of the districts from having to perform such maintenance obligations.

7.3. Infrastructure Phasing Plan. Prior to approval of any large lot tentative map, Developer shall provide a large lot phasing plan addressing sequencing and full build-out of major public onsite and offsite infrastructure necessary to support the project. The large lot phasing plan shall show all public facilities including but not limited to, major roadways, signals, trails, pedestrian over/under crossings, sewer, water, drainage facilities, parks and Neighborhood Greens, and other utilities, and shall be prepared to the satisfaction of the City Public Works Department. The large lot phasing plan may be amended from time-to-time upon written approval by the Public Works Director. The large lot phasing plan shall be in substantial compliance with the infrastructure phasing plan included as a part of this DA and to the satisfaction of the Public Works Director (**Exhibit C**).

Prior to approval of any Small Lot Subdivision Map for an individual phase, the Developer shall prepare and submit to City a small lot phasing plan that addresses full build-out of all onsite and offsite infrastructure necessary to support the project, including all secondary streets and utility infrastructure. The small lot phasing plan will show the blocks of the small lot tentative map to be constructed and all roads, signals, trails and other infrastructure required to serve the use of the proposed units within each block to the satisfaction of the City's Public Works Department.

Prior to issuance of building permits (except permits for model homes and clubhouse) within an individual map phase, all streets and improvements shown on the large lot and small lot phasing plans, all streets necessary for access to the proposed homes, associated improvements included in the approved improvement plans and other infrastructure as necessary for adequate public access and use shall be substantially complete to the satisfaction of the Public Works Director. These improvements including sound walls and landscaping shall be fully constructed to the satisfaction of the City's Public Works Department prior to the first occupancy. The Phasing Plan may be amended from time-to-time upon written approval by the Public Works Director.

7.4. County Reciprocal Funding Agreement. City has concluded good faith negotiations with the County of Sacramento ("County") to enter into a reciprocal funding agreement between City and County to address impacts of developing the SPA on Sacramento County roadways, as well as other cross-jurisdictional roadway impacts related to planned development in the City and County. Through Developer required roadway and signal improvements as negotiated between the Developer and City, the City has determined that Developer has fully satisfied its obligations with regard to the requirement for the County Reciprocal Funding Agreement.

7.5. Transportation Set-Aside. As more particularly described in **Exhibit G**, City and Developer agree that a TDIF Set-Aside will be used to establish a dedicated revenue source to help fund certain Core Backbone Road Infrastructure. The TDIF Set-Aside shall not apply to non-residential uses. **Exhibit G** details the requirements and administration of the TDIF Set-Aside. Developer and City acknowledge and agree that the availability of credits or reimbursements for roadway constructed by Developer within or off-site of the Special Planning Area shall be subject to and administered in accordance with the TDIF Set-Aside provisions in **Exhibit G**. City further acknowledges that the administration and maintenance of the TDIF Set-Aside will automatically sunset and terminate when City has secured full funding for the Rancho Cordova Parkway interchange project, alternative funding approved by City therefor has been secured.

7.6. Off-Site Intersection Improvements. The traffic mitigation measures for the Project, as set forth in Sections 3.13-3, 3.13-4, and 3.13-5 of the Project EIR, include signal and/or striping improvements at the intersections of Douglas Road at Sunrise Boulevard, Sunrise Boulevard at White Rock Road, and Sunrise Boulevard at Zinfandel Drive. City has relieved Developer of the obligation to construct those improvements and City shall assume the responsibility to fund and construct the improvements. Subject to applicable laws and regulations, the timing of the construction of the improvements is at the discretion of the Public Works Director.

8. **Affordable Housing.** Developer shall comply with all terms, conditions and requirements under the Affordable Housing Plan applicable to the Property. Any failure by Developer to perform any material term, condition or requirement of the Affordable Housing Plan applicable to the Property is a violation of this Agreement, subject to default under Sections 13 and 14 herein. Dedication and/or transfer of Village 23 to City will generate fee credits applicable to City's affordable housing in-lieu fee, as further identified and described in the Affordable Housing Plan, attached as **Exhibit I**. City acknowledges that Developer's compliance with all the terms, conditions and requirements of the Affordable Housing Plan applicable to the Property shall fully satisfy Developer's obligations to provide affordable housing or inclusionary housing or other such fee or exaction related thereto associated with development of the Property.

9. **Dedication of Public Rights of Way and Other Public Lands.** Within thirty (30) days of receipt of a written dedication request from City, including without limitation any such request by City to accommodate a requirement for another developer to build any SPA Backbone Infrastructure within any portion of the Property in connection with the development of the other developer's property, Developer shall grant irrevocable dedications of rights of way and easements to City, in a form acceptable to City, for those portions of the Property required to construct such Backbone Improvements, which may include water, sewer, and storm drain facilities not within a right-of-way. The cost of preparing the dedication documents, including the engineering and surveying costs related thereto, shall be paid by the developer initiating or necessitating the request for the dedication. In addition to granting such irrevocable offers of dedication, Developer shall also grant temporary construction easements for reasonable access onto the Property to construct such Backbone Improvements, which shall be assignable to any developer who intends to construct such Backbone Infrastructure. Developer shall obtain the consent of any and all beneficiaries under any deeds of trust or mortgages or other such holders of monetary claims or liens against the Property to subordinate their interests therein to such dedicated rights of way and easements. The alignment of said rights of way and/or easements shall substantially conform to the alignment shown on the Approved Tentative Map.

9.1. Off-site Improvements (Acquisition). Developer may be required to perform off-site improvements. If Developer is unable to secure sufficient title or interest for lands despite Developer's best faith effort, nothing shall prohibit Developer from exercising any and all rights available to it pursuant to Government Code section 66462.5 prior to the filing of any final or parcel map for which such off-site improvement was conditioned.

10. **Participation in the South Sacramento Habitat Conservation Plan.** City and Developer recognize that mitigating impacts on protected natural resources through a coordinated regional approach may provide a variety of biological and economic benefits. City has adopted the South Sacramento Habitat Conservation Plan ("SSHCP") in order to mitigate such impacts for public improvement projects and private development within the City. Developer shall pay City a per-acre fee based upon the methodology established by City to defray the costs of City to participate in the development of the SSHCP, to the extent such costs are not otherwise included in the SSHCP. The Project is within the boundaries of the SSHCP, and therefore, prior to issuance of the SSHCP Permit, Developer shall obtain and have all necessary permits (federal, state, regional, and/or local) to ensure compliance with the adopted SSHCP.

11. **Amendment or Cancellation.**

11.1 Amendment by Mutual Consent. This Agreement may be amended in writing from time to time by mutual consent of the Parties hereto, and in accordance with the procedures of state law and the Municipal Code. Any amendment of the Entitlements that does not constitute a Minor Revision as defined in the Specific Plan shall require amendment of this Agreement. Any such amendment may be requested and made only as to a portion of the Property, in which case only the owner(s) of such portion of the Property subject thereto shall be required to apply for and sign such partial amendment of this Agreement.

11.2 Cancellation by Mutual Consent. Except as otherwise permitted herein, this Agreement may be canceled in whole or in part only by the mutual consent of the Parties or their successors in interest, in

accordance with Municipal Code. Any fees paid pursuant to this Agreement and spent by City prior to the date of cancellation shall be retained by City.

11.3 Automatic Termination Upon Completion and Sale of Residential Unit. This Agreement shall automatically be terminated, without any further action by either party or need to record any additional document, with respect to any single-family residential lot designated by the Special Planning Area for residential use, upon completion of construction and issuance by City of a final inspection for a dwelling unit upon such residential lot and conveyance of such improved residential lot by Developer to a bona-fide good faith purchaser thereof. In connection with its issuance of a final inspection for such improved lot, City shall confirm that: (i) all improvements which are required to serve the lot, as determined by City, have been accepted by City; and (ii) the lot is included within any financing districts or mechanisms required by Section 7 or other financing mechanism acceptable to City, to the extent required hereby. Termination of this Agreement for any such residential lot as provided for in this Section 11.3 shall not in any way be construed to terminate or modify any assessment district or Mello-Roos Community Facilities District lien affecting such lot at the time of termination.

11.4 Termination Upon Developer Request. This Agreement may also be terminated, at the election of the then property owner, with respect to any legally subdivided parcel designated by the Specific Plan for residential or nonresidential use (other than parcels designated for public use), when recording a final subdivision map for such parcel, or receiving a certificate of occupancy or final inspection, whichever is applicable, for a multifamily or nonresidential building within such parcel, by giving written notice to City of its election to terminate the Agreement for such parcel, provided that: (i) all improvements which are required to serve the parcel, as determined by City, have been accepted by City; (ii) the parcel is included within any financing districts or mechanisms required by Section 7, or other financing mechanisms acceptable to City, to the extent required hereby; (iii) all other financial obligations to City under this Agreement that are outstanding or may become outstanding upon subsequent development of the Property, or portion thereof subject to such termination, have been satisfied, including without limitation satisfaction of all obligations under Sections 6 and 7.3 hereinabove to pay any Park Development Fee, Community Renovation Fees, Community Places Fees, planning reimbursements, and/or roadway frontage reimbursements that are then outstanding or may become payable upon further development of the Property or portion thereof subject to such termination; and (iv) the Developer of such portion of the Property is not in Default of this Agreement and no notice of Default has then been issued by City with respect to such portion of the Property. City shall cause any written notice of termination approved pursuant to this Section to be recorded with the Sacramento County Recorder against the applicable parcel at Developer's expense. Termination of this Agreement for any such residential or nonresidential parcel as provided for in this Section 11.4 shall not in any way be construed to terminate or modify any assessment district or Mello-Roos Community Facilities District lien affecting such parcel at the time of termination.

12. Annual Review.

12.1. Annual Review. City reserves the right to annually monitor and review Developer's good faith compliance with the terms of this Agreement and the Entitlements.

12.2. Monitoring. City has discretion to monitor the continuing compliance of the terms of this Agreement and the Entitlements by updating decision-makers, conducting field inspections, implementing and interpreting requirements, monitoring any litigation relating to the Property, and taking any other actions City may find appropriate.

12.3. Annual Review Date. City intends to conduct an annual review each year during the term of this Agreement in September of each year after the Effective Date.

12.4. Initiation of Review. City's Planning Director initiates the annual review by giving Developer written notice that City will conduct the annual review. The Planning Director's written notice will include an estimate of the total costs City expects to incur in connection with the review. Within thirty (30) days of City's notice, Developer must provide evidence to the Planning Director to demonstrate good faith compliance with this Development Agreement. The burden of proof, by substantial evidence of compliance, is upon the

Developer. City's failure to timely initiate the annual review is not a waiver of the right to conduct a review at a later date or otherwise enforce the provisions of this Development Agreement. Developer is not in default under this Agreement by virtue of a failure by City to timely initiate review.

12.5. Staff Reports. City shall deposit in the mail to Developer a copy of all staff reports and related exhibits concerning contract performance at least twenty (20) days prior to any annual review. City shall also, to the extent practicable, make reasonable efforts to provide simultaneous notice to Developer by e-mail or other then-available means of electronic technology.

12.6. Costs. Costs reasonably and directly incurred by City in connection with the annual review and monitoring shall be paid by Developer in accordance with the City's schedule of fees and billing rates in effect at the time of review.

12.7. Non-compliance with Agreement; Hearing. Subject to Section 14 below, if the Planning Director determines, on the basis of substantial evidence, that Developer has not complied in good faith with the terms and conditions of this Development Agreement during the period under review, the City Council may initiate proceedings to modify or terminate the Agreement, at which time an administrative hearing shall be conducted in accordance with the procedures of state law. As part of that final determination, the City Council may impose conditions on the Project that it considers necessary and appropriate to protect the interests of City. Developer may, at the same hearing, raise any and all issues of non-compliance by City with the terms of this Development Agreement, and the City Council shall review and make findings concerning the compliance of all Parties to the Agreement.

12.8. Appeal of Determination. The decision of the City Council as to Developer's compliance shall be final. Any court action or proceeding to challenge, review, set aside, void, or annul any compliance determination by the Council must be commenced within thirty (30) days of the final decision of the City Council, or the Developer forfeits the right to seek judicial review.

13. Violation of Entitlements. In addition to complying with all terms of this Agreement, Developer agrees to perform all terms, conditions and requirements of all other Entitlements. Any failure by Developer to perform any material term, condition or requirement of any of the other Entitlements or Subsequent Entitlements is a violation of this Agreement, subject to default under Section 14. City acknowledges that the timing and implementation of any development of the Property shall be at the discretion of Developer, and that unless and until the Developer elects to develop any portion of the Property, the only obligations of the Developer hereunder shall be to dedicate public rights or way and lands and grant temporary construction easements as, if and when required pursuant to Section 9 above.

14. Default and Opportunity to Cure. Subject to any applicable extension of time agreed to by the Parties in writing, failure by any Party to perform any term or provision of this Agreement required to be performed by such Party, including without limitation any violation of Section 13, constitutes an event of default ("Event of Default"). For purposes of this Agreement, a Party claiming another Party is in default shall be referred to as the "Complaining Party," and the Party alleged to be in default shall be referred to as the "Party in Default." Except as provided in Section 12, a Complaining Party shall not exercise any of its remedies as the result of such Event of Default unless such Complaining Party first gives notice to the Party in Default as provided in Section 24, and the Party in Default fails to cure such Event of Default within the applicable cure period.

14.1. Procedure Regarding Defaults.

14.1.1. Notice of Default. If an Event of Default occurs, prior to exercising any remedies, the Complaining Party shall give the Party in Default written notice of such default. After City as the Complaining Party provides notice of an Event of Default by Developer, if such Event of Default is not cured within sixty (60) days after the Developer's receipt of such notice, City may thereafter cease to issue any permit or approve any entitlement for which an application has been filed for any portion of the Property then owned or controlled by the Party in Default until the Default is cured pursuant to the procedures in this Section 14.

14.1.2. Cure. The Party in Default must cure the default within sixty (60) days from the Notice of Default. The Complaining Party may pursue all available remedies if the Party in Default fails to cure the default within the 60-day time period. If the nature of the alleged default is such that it cannot reasonably be cured within sixty (60) days, the 60-day time period will be tolled if: (a) the cure is commenced at the earliest practicable date following receipt of the notice; (b) the cure is diligently prosecuted to completion at all times thereafter; (c) at the earliest practicable date (in no event later than sixty (60) days after the Party in Default's receipt of the notice), the Party in Default provides written notice to the Complaining Party that the cure cannot practicably be completed within such sixty- (60) day period; and (d) the cure is completed at the earliest practicable date. In no event shall Complaining Party be precluded from exercising remedies if a default is not cured within one-hundred twenty (120) days after the first notice of default is given. If the Event of Default is discovered or determined in the course of the Annual Compliance Review, in addition to other remedies and potential cures, City shall have the statutory authority pursuant to Government Code section 65865.1 to decide to terminate or modify the Development Agreement following the opportunity to cure as provided in this Section 14.1.2.

14.1.3. Failure to Assert. Any failures or delays by a Complaining Party in asserting any of its rights and remedies as to any default shall not operate as a waiver of any default or of any such rights or remedies. Delays by a Complaining Party in asserting any of its rights and remedies shall not deprive the Complaining Party of its right to institute and maintain any actions or proceedings which it may deem necessary to protect, assert, or enforce any such rights or remedies.

14.1.4. Legal Proceedings. If the Party in Default fails to cure a default in accordance with the provisions of Section 14.1.2, the Complaining Party, at its option, may institute legal proceedings pursuant to this Development Agreement or terminate this Development Agreement. Upon the occurrence of an Event of Default, the Parties may pursue all other remedies at law or in equity, which are not otherwise provided for or prohibited by this Agreement or City's regulations governing development agreements, expressly including the remedy of specific performance of this Development Agreement. In no event, except as provided in Sections 18, 21 and 22 of this Agreement, will either Party be liable to the other Party for any monetary damage for claims arising out of this Agreement, and both Parties hereby expressly waive any such monetary damages. Notwithstanding the foregoing, City may immediately institute any legal proceedings relating to this Development Agreement without the notice and opportunity to cure required in the case of an emergency or immediate danger to public health, safety or welfare.

15. Estoppel Certificate. Either Party may, at any time, and from time to time, deliver written notice to the other Party requesting that the other Party certify in writing that, to the knowledge of the certifying Party: (i) this Development Agreement is in full force and effect and a binding obligation of the Parties; (ii) this Development Agreement has not been amended or modified either orally or in writing, or if so amended, identifying the amendments; and, (iii) the requesting Party is not in default in the performance of its obligations under this Development Agreement, or if in default, describing therein the nature and amount of any such defaults. A Party receiving a request hereunder shall execute and return such estoppel certificate, or give a written detailed response explaining why it will not do so, within thirty (30) days following the receipt of each such request. Each Party acknowledges that such an estoppel certificate may be relied upon by third parties acting in good faith. A certificate provided by City establishing the status of this Development Agreement with respect

to the Property or any portion thereof shall be in recordable form and may be recorded at the expense of the recording Party.

16. Severability. If any part of this Agreement is for any reason held to be unenforceable, the rest of the Agreement remains fully enforceable. If, however, a provision of this Agreement is determined to be invalid or unenforceable and the effect is to deprive a Party of an essential benefit of this Agreement, then the Party so deprived will have the option to terminate this entire Agreement upon written notice to the other Party.

17. Applicable Law. California law applies to this Agreement without regard for any choice-of-law rules that might direct the application of the laws of any other jurisdiction.

18. Attorneys' Fees and Costs in Legal Actions by Parties to the Agreement. Should any legal action be brought by either Party for breach of this Development Agreement or to enforce any provisions herein, the prevailing party in the action is entitled to attorneys' fees, court costs, and any other costs as may be fixed by the Court.

19. Agreement Runs with the Land. Except as otherwise provided for in this Development Agreement, all of the provisions, rights, terms, covenants, and obligations contained in this Agreement are binding upon the Parties and their respective heirs, successors and assignees, representatives, lessees, and all other persons acquiring the Property, or any portion thereof, or any interest therein, whether by operation of law or in any manner whatsoever. All of the provisions of this Development Agreement are enforceable as equitable servitudes and constitute covenants running with the land pursuant to applicable laws, including but not limited to Section 1468 of the California Civil Code. Each covenant to do, or refrain from doing, some act on the Property, or with respect to any owned property: (i) is for the benefit of such properties and is a burden upon such properties; (ii) runs with such properties; and (iii) is binding upon each party and each successive owner during its ownership of such properties or any portion thereof, and shall be a benefit to and a burden upon each Party and its property hereunder and each other person succeeding to an interest in such properties.

20. Bankruptcy. The obligations of this Development Agreement are not dischargeable in bankruptcy.

21. Indemnification from Construction, Improvement, Operation and Maintenance Claims. Developer agrees to indemnify, defend with counsel selected by City, and hold harmless City, and its elected and appointed councils, boards, commissions, officers, officials, agents, employees, and representatives, from any and all claims, costs (including legal fees and costs incurred by City or awarded to plaintiffs) and liability for any personal injury or property damage which may arise directly or indirectly as a result of any actions or inactions by Developer, or any actions or inactions of Developer's contractors, subcontractors, agents, or employees in connection with the construction, improvement, operation, or maintenance of the Property or the Project. Developer has no indemnification obligation with respect to the gross negligence or willful misconduct of City, or its elected and appointed councils, boards, commissions, officers, officials, agents, employees, and representatives or with respect to the maintenance, use, or condition of any improvement after the time it has been dedicated to and accepted by City or another public entity (except as provided in an improvement agreement or maintenance bond). The provisions of this Section 21 shall survive the termination of this Agreement.

22. Cooperation and Indemnification of City in Event of Legal Challenge to This Agreement or Entitlements. In the event of any legal or equitable action or other proceeding instituted by any third party challenging the validity of any provisions of this Development Agreement or the Entitlements, or seeking to overturn or invalidate any approval granted pursuant to this Agreement:

22.1. The Parties agree to cooperate in defending against the action or proceeding;

22.2. The Developer is solely responsible for its own costs and any reasonable legal fees and costs incurred by City for such defense;

22.3. Developer will indemnify, defend with counsel selected by City and hold harmless City, and its elected and appointed councils, boards, commissions, officers, officials, agents, employees, and representatives from any and all claims, costs (including legal fees and costs incurred by City or awarded to plaintiffs) and liability;

22.4. Neither Developer nor City shall settle any action or proceeding on grounds that include non-monetary relief or admissions of liability without written consent of the other Party. City agrees to not settle any action based upon monetary relief without the written consent of Developer, unless City is solely liable and agrees to pay such monetary relief.

22.5. The provisions of this Section 22 shall survive the termination of this Development Agreement.

23. **Third Party Beneficiaries**. This Development Agreement is made and entered into for the sole protection and benefit of Developer and City and their successors and assigns. No other person shall have any right of action based upon any provision in this Agreement.

24. **Notices**. All notices and other communications required or permitted under this Agreement, the enabling legislation, or the procedure adopted pursuant to Government Code section 65865, must be in writing and must be delivered in person or sent by certified mail, postage prepaid, or by facsimile or electronic mail (provided that such email shall be promptly followed by delivery of such notice by another method as provided herein).

Notice required to be given to City shall be addressed as follows:

CITY OF RANCHO CORDOVA
Community Development Director
2729 Prospect Park Drive
Rancho Cordova, CA 95670
Fax: (916) 851-8714
E-mail: esparkman@cityofranchocordova.org

Notice required to be given to Developer shall be addressed as follows:

K. Hovnanian at Jaeger Ranch, LLC.
Attn: Mike Wyatt, Division President
3721 Douglas Boulevard, Suite 150
Roseville, CA 95661
Phone: 916-945-5500
Fax: 916-923-3467
E-mail: MWyatt@KHov.com

With a copy to:

K. Hovnanian Homes
Attn: Chad Fuller, Chief Legal Counsel
20830 N. Tatum Blvd., Suite 250
Phoenix, AZ 85050
Phone: 480-824-4200
Fax: 480-824-4201
E-mail: CFuller@KHov.com

Either Party may change the address stated herein by giving notice in writing to the other Party, and thereafter notices shall be addressed and transmitted to the new address.

25. Assignment and Release. From and after recordation of this Agreement against the Property, Developer shall have the full right to assign this Agreement as to the Property, or any portion thereof, in connection with any sale, transfer or conveyance thereof, provided that (i) Developer has paid City any and all fees or amounts due and payable to City arising out of this Agreement, the processing of the Entitlements, or the development of the portion of the Property to be assigned, and (ii) upon the receipt by City Planning Director of the express written assignment by Developer and assumption by the assignee of such assignment in the form attached hereto as **Exhibit H**. Upon the payment of such fees or amounts due (which shall be acknowledged on the assignment by City Planning Director upon the request of Developer) and City's receipt of the express written assignment by Developer, the assumption by the assignee of such assignment in the form attached hereto as **Exhibit H**, and the conveyance of Developer's interest in the Property related thereto, Developer shall be released from further liability or obligation related to the portion of the Property so conveyed and the assignee will be considered the "Developer," with all rights and obligations related thereto, with respect to such conveyed property (the "Assigned Property").

26. Mortgagee Protection. The parties hereto agree that this Agreement shall not prevent or limit Developer, in any manner, at Developer's sole discretion, from encumbering the Property or any portion thereof by any mortgage, deed of trust or other security device securing financing with respect to the Property. City acknowledges that lenders providing any such financing may require certain Agreement interpretations and modifications, and agrees upon request, from time to time, to meet with Developer and representatives of such lenders to negotiate in good faith any such request for interpretation or modification. City will not unreasonably withhold its consent to any such requested interpretation or modification, provided such interpretation or modification is consistent with the intent and purposes of this Agreement. Any lender or other such entity (a "Mortgagee") that obtains a mortgage or deed of trust against the Property shall be entitled to the following rights and privileges:

(a) Neither entering into this Agreement nor a breach of this Agreement shall defeat, render invalid, diminish or impair the lien of any mortgage on the Property made in good faith and for value, unless otherwise required by law.

(b) The Mortgagee of any mortgage or deed of trust encumbering the Property, or any part thereof, for which Mortgagee has submitted a request in writing to City in the manner specified herein for giving notices, may request to receive written notification from City of any Event of Default by Developer in the performance of Developer's obligations under this Agreement.

(c) If City receives a timely request from a Mortgagee requesting a copy of any notice of an Event of Default given to Developer under the terms of this Agreement, City shall provide a copy of that notice to the Mortgagee within ten (10) days of sending the notice of Event of Default to Developer. The Mortgagee shall have the right, but not the obligation, to cure the Event of Default during the remaining cure period allowed to Developer under this Agreement.

(d) Any Mortgagee who comes into possession of the Property, or any part thereof, by any means, whether pursuant to foreclosure of the mortgage, deed of trust, or deed in lieu of such foreclosure or otherwise, shall take the Property, or part thereof, subject to the terms of this Agreement; provided, however, notwithstanding anything to the contrary above, any Mortgagee, or successor or assign of such Mortgagee, who becomes an owner of the Property through foreclosure shall not be obligated to pay any fees or construct or complete the construction of any improvements, unless such owner desires to continue development of the Property consistent with this Agreement and the Entitlements, in which case the owner by foreclosure shall assume the obligations of Developer hereunder in a form acceptable to City.

(e) The foregoing limitation on Mortgagees and owners by foreclosure shall not restrict City's ability pursuant to Section 9 of this Agreement to specifically enforce against such Mortgagees or owners any dedication requirements under this Agreement or under any conditions of any other Entitlements.

27. **Priority of Enactment.** In the event of conflict between this Development Agreement and the Entitlements, this Development Agreement is controlling and the Parties will meet and confer in good faith to amend the Entitlements accordingly.

28. **Form of Agreement; Recordation; Exhibits.** City will record this Agreement and any subsequent amendment to this Agreement, with the County Recorder within ten (10) days of the effective date. City will also record any termination of any parts or provisions of this Agreement, except as otherwise provided in this Development Agreement, including the automatic termination of this Development Agreement due to the expiration of the Term. Any amendment or termination of this Development Agreement that affects less than all of the Property must describe the portion of the property that is the subject of the amendment or termination. This Agreement is executed in three duplicate originals, each of which is deemed to be an original. This Agreement consists of 20 pages and 9 exhibits, which constitute the entire understanding and agreement of the Parties.

29. **City Manager Authorization.** The City of Rancho Cordova, a municipal corporation, has authorized this Development Agreement to be executed in duplicate by its City Manager and attested to by its City Clerk under the authority of Ordinance No. _____ adopted by the Council of the City on the __ day of December, 2019, and has caused this Agreement to be executed.

"CITY"

CITY OF RANCHO CORDOVA,
a municipal corporation

By: _____

Name: Cyrus Abhar
Its: City Manager

Date: _____

"DEVELOPER"

K. HOVNANIAN AT JAEGER RANCH, LLC
a California Limited Liability Company

By: _____
Name: Michael P. Wyatt
Its: Region President

Date: _____

ATTEST:

_____
Stacy Leitner, City Clerk

APPROVED AS TO FORM:

_____
Adam U. Lindgren
City Attorney

Date: _____

EXHIBIT LIST

Exhibit A:	Legal Description of the Property
Exhibit B:	Map of the Property
Exhibit C:	Infrastructure Phasing Plan
Exhibit D:	The Ranch Special Plan Area
Exhibit E:	Map of Park and Neighborhood Greens Land Dedications within Property
Exhibit F:	Map of Privately Maintained Facilities
Exhibit G:	Guiding Principles for Core Backbone Infrastructure
Exhibit H:	Form of Assignment
Exhibit I:	Affordable Housing Plan

EXHIBIT A

Legal Description of the Property

The land referred to herein is situated in the State of California, County of Sacramento, City of Rancho Cordova, and is described as follows:

ALL THAT PORTION OF SECTION 16, TOWNSHIP 8 NORTH, RANGE 7 EAST, M.D.B. & M., DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID SECTION 16; THENCE, ALONG THE WEST LINE OF SAID SECTION, NORTH 0°19'30" WEST 4,358.66 FEET; THENCE NORTH 89°56'50" EAST 5,290.23 FEET TO A POINT ON THE EAST LINE OF SAID SECTION AND IN AN OLD FENCE; THENCE, ALONG SAID SECTION LINE AND SAID OLD FENCE SOUTH 0°30' EAST 4,358.74 FEET TO THE SOUTHEAST CORNER OF SAID SECTION 16, AND AN OLD FENCE CORNER; THENCE ALONG THE SOUTH LINE OF SAID SECTION, SOUTH 89°56'50" WEST 5,303.44 FEET TO THE POINT OF BEGINNING.

This description has been prepared by me from record information contained in that certain Grant Deed to K. Hovnanian at Jaeger Ranch, LLC, dated September 2, 2009 and recorded in Book 20090903, Page 0247, Official Records of Sacramento County.

Kevin A. Heeney, PLS 5914

11/14/2019
Date

EXHIBIT B

Map of the Property

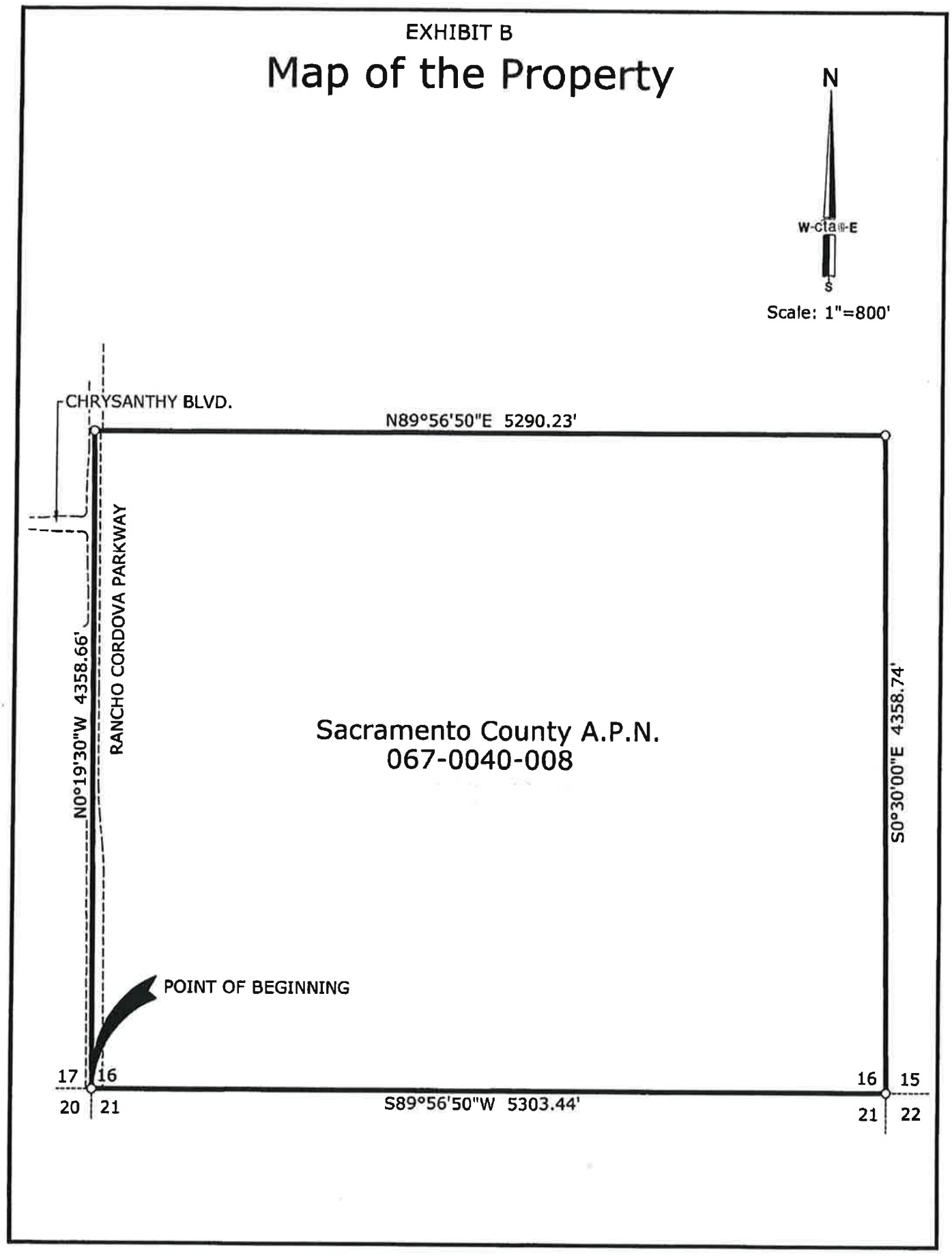
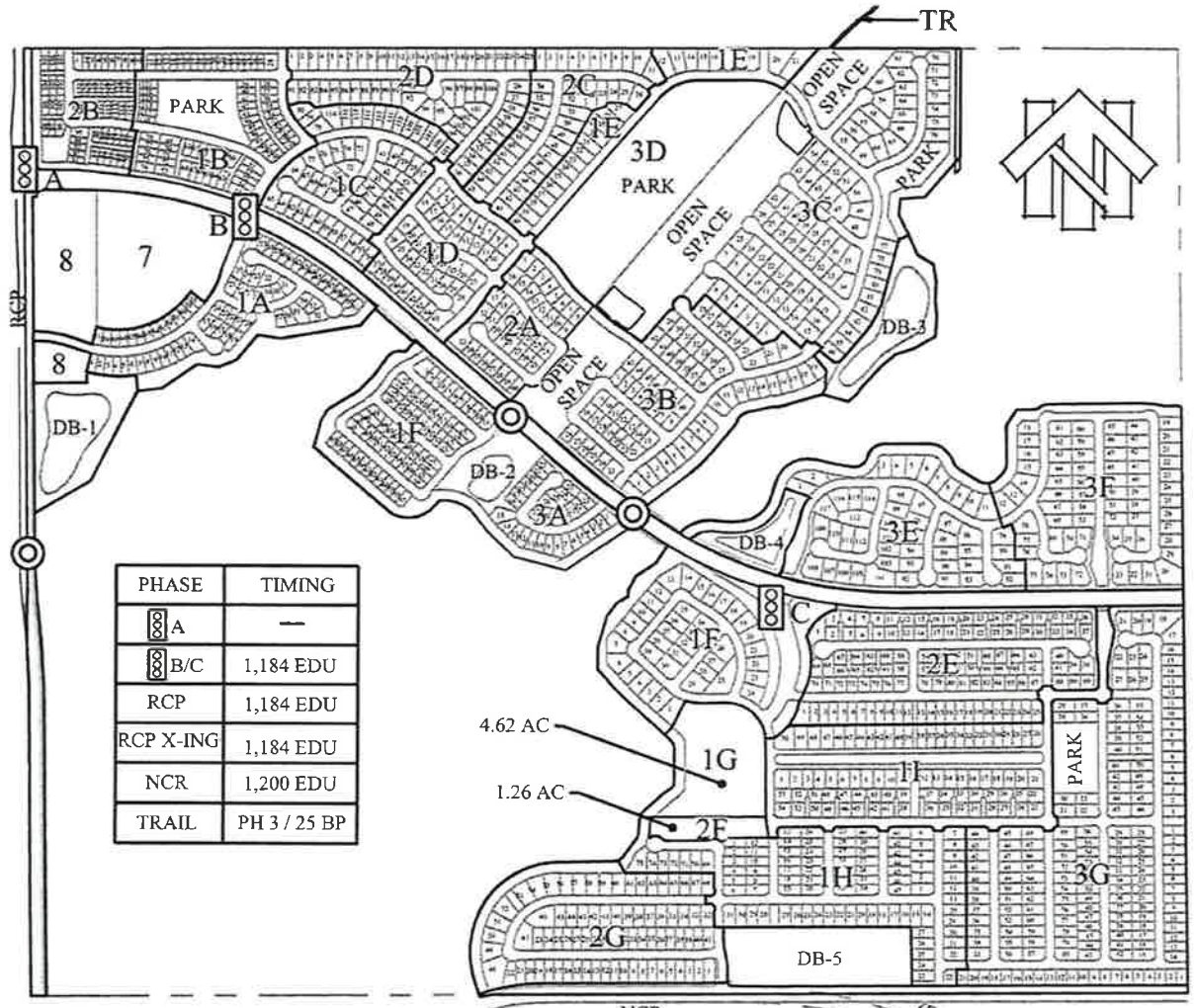


EXHIBIT C



PHASE	TIMING
A	—
B/C	1,184 EDU
RCP	1,184 EDU
RCP X-ING	1,184 EDU
NCR	1,200 EDU
TRAIL	PH 3 / 25 BP

LEGEND

PHASE BOUNDARY

(P) TRAFFIC SIGNAL

(P) PEDESTRIAN PUSH BUTTON

DB = DETENTION BASIN

BP = BUILDING PERMIT

A	B
BASIN LOCATION	PHASES DEPENDENT ON BASIN COMPLETION
DB-1	1A, 1B, 1C, 1D, 1E, 2A, 2B, 2C, 2D, 3D, 7 & 8
DB-2	3A
DB-3	3B & 3C
DB-4	1F & 2E/3E, 3F (PARTIAL)
DB-5	1G, 1H, 1I, 2F, 2G & 3G 3F (PARTIAL)

NOTES:

1. Chrysanthy Boulevard (generally from Rancho Cordova Parkway to the eastern Special Planning Area boundary) and Rancho Cordova Parkway (generally north of Chrysanthy), including but not limited to sidewalks, landscaping, mid-block ped push buttons, and signal at the intersection of Rancho Cordova Parkway and Chrysanthy Boulevard shall be substantially complete within the limits shown on the phasing plan prior to issuance of the first building permit within the Special Planning Area (SPA) excluding model homes and clubhouse complex, and complete to the satisfaction of the Public Works Department prior to the first occupancy within the SPA.

2. Rancho Cordova Parkway including but not limited to sidewalks, landscaping, signals and ped push buttons, shall be substantially complete to the satisfaction of the Public Works Department within the limits shown on the phasing plan (generally from Chrysanthy Boulevard to the southern SPA boundary) prior to issuance of more than 1,184 (EDU) building permits within the SPA excluding model homes and clubhouse.

3. Signal B (located on Chrysanthy Boulevard approximately 1000-feet east of Rancho Cordova Parkway) and Signal C (located on Chrysanthy Boulevard at the main entrance to the active adult community) shall be substantially complete to the satisfaction of the Public Works Department prior to issuance of more than 1,184 (EDU) building permits within the SPA excluding model homes.

4. City open space areas shall be completed to the satisfaction of the Public Works Department prior to the first occupancy within the phase they are contained in. Trails shall not be constructed without a logical terminus. Trails shall be constructed to connect to the overall bicycle network, generally connecting to Chrysanthy or Rancho Cordova Parkway.

5. A continuous class 1 bicycle/pedestrian Trail Connection from Chrysanthy to Canyonlands Drive through powerline corridor shall be complete to the satisfaction of the Public Works Department prior to the first occupancy permit within phases 3D, or 3C.

6. Project frontage of the North Campus Road shall be substantially complete to the satisfaction of the City prior to issuance of more than 1,200 EDU building permits excluding model homes and clubhouse within the SPA. If construction of the road would not provide public benefit of a connected road to Americanos Blvd or Rancho Cordova Parkway at the required time of construction, and with prior approval from the Public Works Department, developer may elect to make a cash payment to the City for its frontage obligations in-lieu of construction in an amount of engineer's estimate for said frontage including reasonable design and administrative costs.

7. If the commercial parcel is developed prior to Rancho Cordova Parkway widening, the commercial parcel developer shall improve its Rancho Cordova Parkway frontage along its boundaries, prior to occupancy.

8. Reference Development Agreement Exhibit G for additional information regarding creditable items per the transportation development impact fee program or Park Renovation program.

9. The basins identified in column A below, plus amenities shall be substantially complete prior to issuance of the first SFR building permit within phases identified in column B, or other area that drains to the basin and necessitates construction. The basin and associated amenities shall be complete to the satisfaction of the Public Works Department prior to the first occupancy within these phases.

ATTACHMENT 14
Exhibit A to the Ordinance

EXHIBIT D

The Ranch Special Planning Area

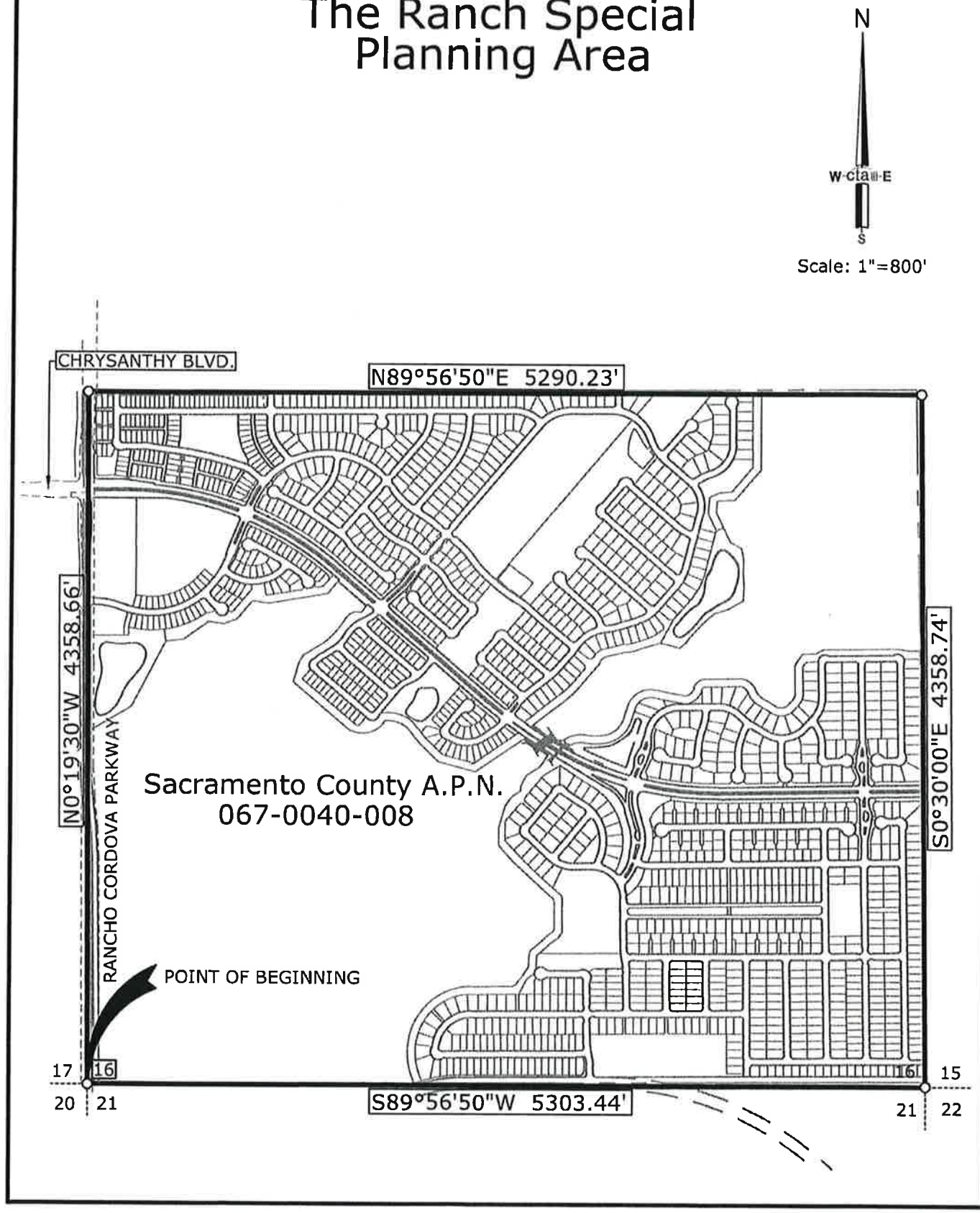


EXHIBIT E
PARK AND NEIGHBORHOOD GREENS
LAND DEDICATION

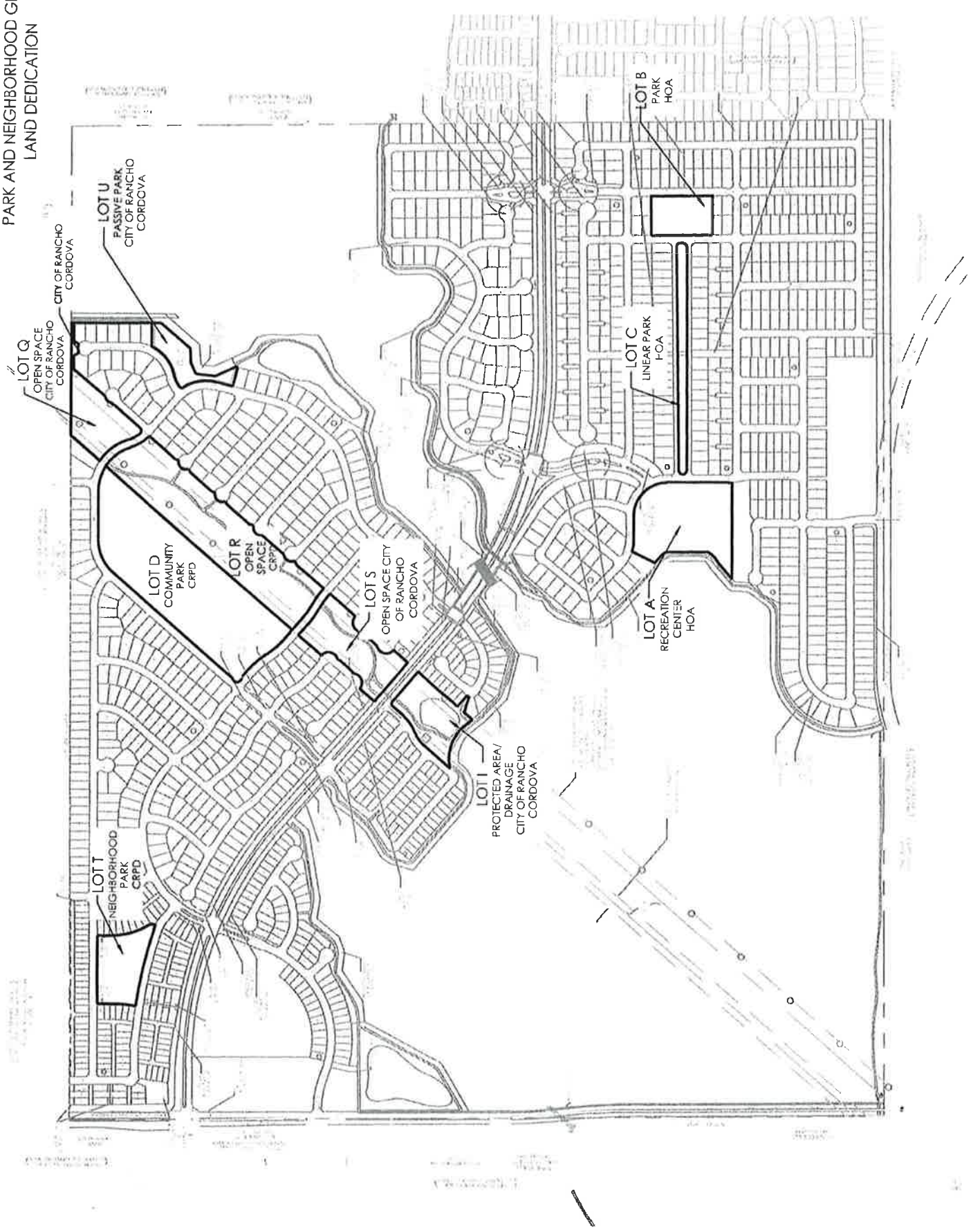


EXHIBIT F
PRIVATELY MAINTAINED FACILITIES

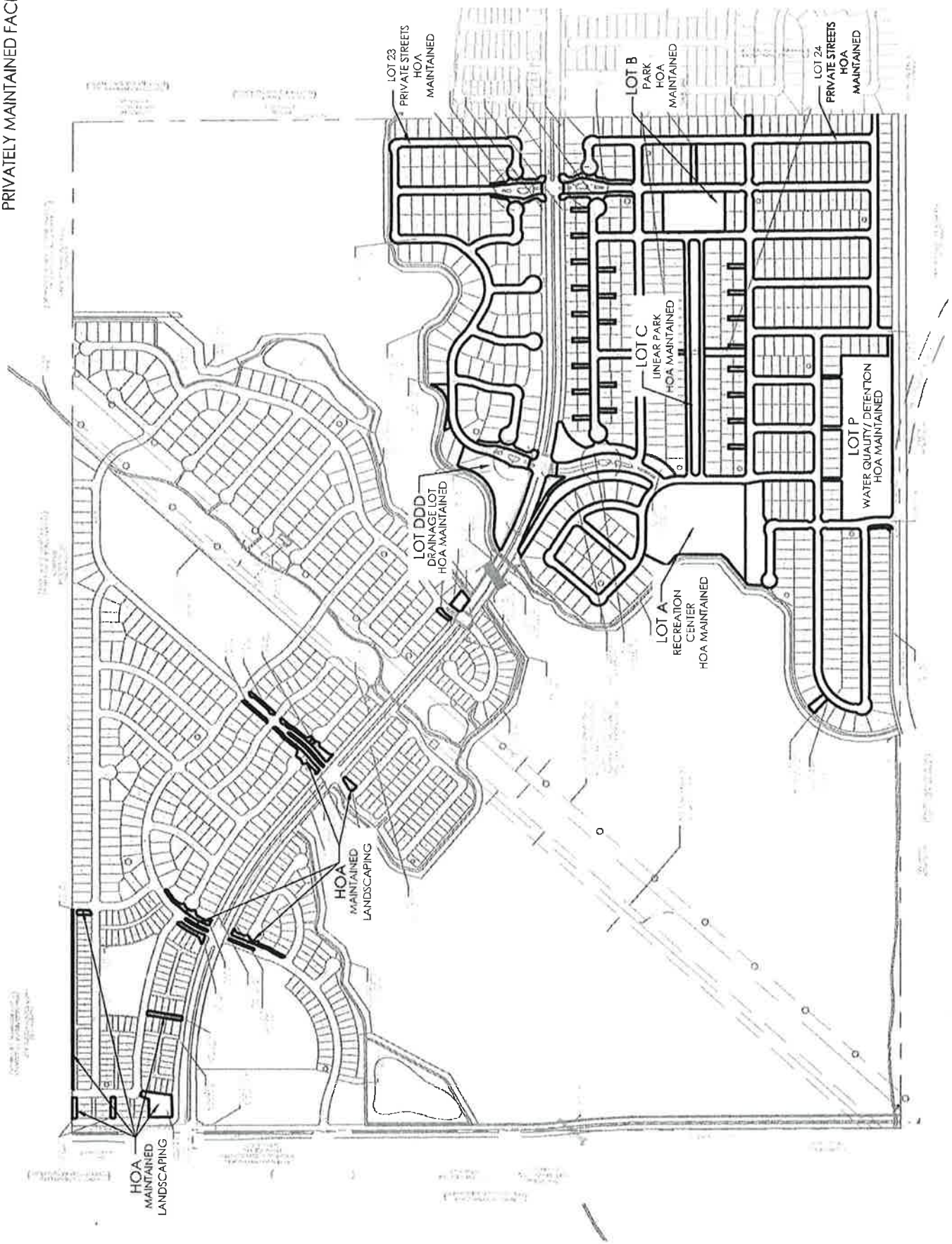


EXHIBIT G
The Ranch Special Planning Area
Guiding Principles for Funding Backbone Infrastructure

Core Backbone Infrastructure

The City has identified the following core backbone infrastructure improvements as necessary to support the next 10,000 residential units EDUs in the new development area east of Sunrise Blvd. The estimated costs of these improvements are approximately $150 million. A dedicated revenue stream in the form of a set aside from the development impact fee is intended to partially fund the core improvements.

- Zinfandel Complex Improvements
- Sunrise Boulevard Widening from Kiefer Blvd. to Jackson Hwy including intersection improvements at Jackson Hwy
- White Rock Road Widening from Sunrise Blvd. to Rancho Cordova Pkwy including intersection improvements
- Rancho Cordova Parkway Interchange and Rancho Cordova Parkway Extension to White Rock Road
- Douglas Road Widening from Sunrise Blvd. to Zinfandel Drive including bridge widening over the Folsom South Canal and completion of intersection improvements at Sunrise Blvd.

Transportation Development Impact Fee (TDIF) Rates

The current TDIF rates applicable to The Ranch Special Planning Area are as follows:

Single Family Dwelling, Market Rate	$17,311.50
Single Family Dwelling, Age Restricted	$ 7,830.52
Multifamily, Age Restricted	$ 4,272.04

These rates shall increase effective January 1, 2020 pursuant to the inflationary adjustment methodology described in the Nexus Study for the TDIF.

Infrastructure Funding Approach for Core Backbone

For development within The Ranch Special Planning Area (TRSPA), a portion of the City's Transportation Development Impact Fee (TDIF) on residential units will be set aside to establish a dedicated revenue source to help fund the core backbone road improvements. The set aside amount is $9,000 per residential EDU and does not apply to nonresidential development. Commencing the January after the Special Planning Area is adopted, the TDIF set-aside amount of $9,000 will be adjusted annually using the same annual inflation rate as the TDIF. Single-family uses are assigned 1 EDU per unit and Multifamily land uses are assigned EDUs based on their relative impact compared to a single-family unit. Therefore, the multifamily EDU factor will be less than a single-family unit. Additionally, the EDUs for active adult products will be reduced by the methodology established in the Development Agreement.

If applied uniformly to the next 10,000 residential EDUs in the new development area, the set aside fund would generate approximately $90 million (today's dollars) to spend towards the major core infrastructure. If new development in the TRSPA builds any core backbone infrastructure, the core backbone infrastructure improvements will be creditable against the TDIF.

The City will maintain flexibility and full discretion on the prioritization, timing, and phasing of the improvements and to modify the list of backbone improvements to substitute or add other improvements that are identified to meet level of service requirements or to improve traffic circulation in the City. Such

modifications shall not increase the set aside amount. The City also has full discretion to utilize the monies generated to leverage funding opportunities for transportation improvements.

Developer Construction of Core Backbone Improvements

Any associated TRSPA construction requirements for Core Backbone Road Infrastructure would be eligible for credits or reimbursement from the set-aside portion of the TDIF and/or the remaining TDIF obligation. Core Backbone Road Improvement construction requirements would be eligible for credits against the TDIF to the extent that such credits are available, based on the applicable TDIF obligation otherwise payable by the development requiring the construction of credit-generating improvements. If credits exceed the corresponding fee obligation (i.e., if the improvement cost exceed the amount of credits that can be applied against the applicable fee obligation), the constructing entity then would be eligible for reimbursement from the TDIF.

Developer Backbone Infrastructure

City has agreed that the following Developer obligations are fee creditable against the TDIF and shall be creditable towards the set-aside to the extent the improvements are eligible for credits in the TDIF:

1. Construction of center travel lanes and median landscaping on Chrysanthy Boulevard
2. Widening and signal improvements at the intersection of Rancho Cordova Parkway/Chrysanthy Boulevard
3. Construction of median travel lane and median landscaping on Rancho Cordova Parkway
4. Construction of a traffic signal at Street K/Street V and Chrysanthy Boulevard in the amount of $400,000 in 2019 dollars.

The fee credits generated from Items 1 and 2 shall be applied uniformly to single family detached homes at building permits in Phases 1 and 2, as depicted in Exhibit C, Infrastructure Phasing Plan. The fee credits generated from Items 3 and 4 shall be applied uniformly to single family detached homes at building permits in Phase 3, as depicted in Exhibit C.

Developer and City agree that Developer has an obligation to construct a traffic signal at the entrance to the age-restricted community. Such signal serves only the TRSPA development and therefore does not have status in the TDIF program, is not eligible for any credits, and shall be constructed at developers cost.

Developer Construction of Other TDIF Improvements

Fee Program eligible improvements that a developer may be required to construct through the phasing plan for the project will be fully creditable towards the remaining portion of the TDIF after the set aside has been allocated for the core backbone infrastructure. To the extent that improvement costs exceed available credits, the developer will be eligible for reimbursements form the remaining portion of future TDIF revenues.

Administration

The initial set aside of $9,000 per residential EDU is being established as of January 2019 and would inflate at the same inflation rate and methodology as the Transportation Development Impact Fee (TDIF), commencing upon adoption of the TRSPA. The City will be responsible for managing the set aside funding and delivering the core backbone infrastructure improvements. Administration of the TDIF set aside will be funded from the administration component of the TDIF. The TDIF set aside will not have an additional administration charge.

The set aside will automatically sunset when full funding for the Rancho Cordova Parkway/Highway 50 interchange or an alternative approved by the City has been secured.

TDIF/Cash Flow Analysis

EXHIBIT H

FORM OF ASSIGNMENT

OFFICIAL BUSINESS
Document entitled to free recording
Government Code Section 6103

RECORDING REQUESTED BY
AND WHEN RECORDED MAIL TO:

City of Rancho Cordova
Attn: City Clerk
2729 Prospect Park Drive
Rancho Cordova, CA 95670

(SPACE ABOVE THIS LINE RESERVED
FOR RECORDER'S USE)

ASSIGNMENT AND ASSUMPTION AGREEMENT
RELATIVE TO _____

THIS ASSIGNMENT AND ASSUMPTION AGREEMENT (hereinafter, the "Agreement") is entered into this _____ day of _____ 20__, by and between K. Hovnanian at Jaeger Ranch, LLC, a California limited liability company (hereinafter "Developer"), and _____, a _____ (hereinafter "Assignee").

RECITALS

On _____, 20__, the City of Rancho Cordova and Developer entered into that certain agreement entitled "Development Agreement By and Between the City of Rancho Cordova and K. Hovnanian at Jaeger Ranch, LLC "The Ranch" (hereinafter the "Development Agreement"). Pursuant to the Development Agreement, Developer agreed to develop certain property more particularly described in the Development Agreement (hereinafter, the "Subject Property"), subject to certain conditions and obligations as set forth in the Development Agreement. The Development Agreement was recorded against the Subject Property in the Official Records of Sacramento County on _____, 20__, as Instrument No. 20__-_____.

Developer intends to convey a portion of the Subject Property to Assignee, commonly referred to as Parcel _____, and more particularly identified and described in Exhibit A, attached hereto and incorporated herein by this reference (hereinafter the "Assigned Parcel").

Developer desires to assign and Assignee desires to assume all of Developer's right, title, interest, burdens and obligations under the Development Agreement with respect to and as related to the Assigned Parcel.

ASSIGNMENT AND ASSUMPTION

NOW, THEREFORE, Developer and Assignee hereby agree as follows:

Developer hereby assigns, effective as of Developer's conveyance of the Assigned Parcel to Assignee, all of the rights, title, interest, burdens and obligations of Developer under the Development Agreement with respect to the Assigned Parcel. Developer retains all the rights, title, interest, burdens and obligations under the Development Agreement with respect to all other property, if any, within the Subject Property owned by Developer.

Assignee hereby assumes all of the rights, title, interest, burdens and obligations of Developer under the Development Agreement with respect to the Assigned Parcel, and agrees to observe and fully perform all of the duties and obligations of Developer under the Development Agreement with respect to the Assigned Parcel. The parties intend hereby that, upon the execution of this Agreement and conveyance of the Assigned Parcel to Assignee, Assignee shall become substituted for Developer as the "Developer" under the Development Agreement with respect to the Assigned Parcel and Developer shall be released of and from any obligations or liabilities under the Development Agreement with respect to the Assigned Parcel.

All of the covenants, terms and conditions set forth herein shall be binding upon and shall inure to the benefit of the parties hereto and their respective heirs, successors and assigns.

The Notice Address described in Section 24 of the Development Agreement for the Assignee with respect to the Assigned Parcel shall be:

_____
_____
_____
Attn: _____

[Signatures follow on next page]

IN WITNESS HEREOF, the parties hereto have executed this Agreement as of the day and year first above written. This Agreement may be signed in identical counterparts.

DEVELOPER:	ASSIGNEE:
K. HOVNANIAN AT JAEGER RANCH, LLC, a California limited liability company	_____, a _____
By: _____	By: _____
Print Name: _____	Print Name: _____
Title: _____	Title: _____

Exhibit I

RECORDING REQUESTED BY AND
WHEN RECORDED, MAIL TO:

City of Rancho Cordova
2729 Prospect Park Drive
Rancho Cordova, CA 95670
Attention: City Clerk

(SPACE ABOVE THIS LINE RESERVED FOR RECORDER'S USE)

AFFORDABLE HOUSING PLAN AGREEMENT FOR THE RANCH PROJECT BY AND BETWEEN THE CITY OF RANCHO CORDOVA, AND K. HOVNANIAN AT JAEGER RANCH, LLC

THIS AFFORDABLE HOUSING PLAN AGREEMENT ("AHP" or "Agreement"), and the requirements herein, are agreed upon by and between the CITY OF RANCHO CORDOVA ("City") and K. HOVNANIAN AT JAEGER RANCH, LLC, a California limited liability company ("Landowner"), as of _____, 2019 (the "Effective Date"). City and Landowner are hereinafter sometimes collectively referred to as the Parties. This AHP shall be binding on Landowner and on any and all of Landowner's successors and assigns developing the real property described in Exhibit 1 and depicted in Exhibit 2 hereto and incorporated herein (the "Property") within the The Ranch Special Planning Area.

RECITALS

WHEREAS, pursuant to California Government Code section 65580, the Legislature has established the following priorities related to the provision of affordable housing: 1) the availability of housing is of vital statewide importance, and the early attainment of decent housing and a suitable living environment for every Californian, including farmworkers, is a priority of the highest order; 2) the early attainment of this goal requires the cooperative participation of government and the private sector in an effort to expand housing opportunities and accommodate the housing needs of Californians of all economic levels; 3) the provision of housing affordable to low- and moderate-income households requires the cooperation of all levels of government; 4) local and State governments have a responsibility to use the powers vested in them to facilitate the improvement and development of housing to make adequate provision for the housing needs of all economic segments of the community; and 5) the Legislature recognizes that in carrying out this responsibility, each local government also has the

responsibility to consider economic, environmental, and fiscal factors and community goals set forth in the general plan and to cooperate with other local governments and the State in addressing regional housing needs; and

WHEREAS, the City of Rancho Cordova Housing Element, adopted December 16, 2013 by City Council Resolution No. 119-2013 ("Housing Element") states that all large-scale development in the City's undeveloped areas, generally located south of Highway 50, is required to provide a range of housing opportunities responding to the housing needs associated with the proposed development; and

WHEREAS, Policy H.1.5 of the Housing Element states that "[d]evelopers of new residential projects within the newly developing areas of the city (generally in the large, vacant areas south of Highways 50) shall prepare an Affordable Housing Plan for the project for City review and approval that identifies the project's plan for providing affordable housing;" and

WHEREAS, Housing Element Action H.1.5.1 provides that the Affordable Housing Plan ("AHP") "shall be approved in conjunction with the earliest stage of project entitlement, typically with the City Council approval of the Specific Plan, Development Agreement, or other primary land use entitlement," and "[i]n order to ensure the production and preservation of housing affordable to the City's workforce, no productive, reasonable program or incentive option will be excluded from consideration within project-specific Affordable Housing Plans...;" and

WHEREAS, on September 20, 2012, the Sacramento Area Council of Governments' ("SACOG") Board of Directors unanimously approved the 2013-21 Regional Housing Needs Plan ("RHNP"). This action was the final stage in the adoption of an eight-year plan for the Regional Housing Needs Allocation ("RHNA"). RHNA is a State requirement to determine the number of housing units that cities and counties must plan for in their housing element updates. Pursuant to California Government Code section 65583, localities are required to update their housing elements to plan to accommodate their entire RHNA share by income category; and

WHEREAS, the City has received its allocation from SACOG of the projected share of the Region's total growth within the City, including both a projected allocation of total housing units and a distribution of this projected growth by family incomes categories; and

WHEREAS, the City intends to meet Housing Element Policies H.1.5, H.1.5.1 and the requirements of state law by demonstrating that it is providing sufficient zoning

capacity to accommodate a portion of the RHNA for housing available to a variety of income categories within The Ranch Special Planning Area; and

WHEREAS, based on the foregoing requirements, this AHP is comprised of two major components: the Property's fair share of the RHNA allocation and Affordable Housing Performance; and

WHEREAS, the City Council supports and has determined that an Affordable Housing In Lieu Fee (as defined below) per Market Rate Unit (as defined below)and per Active Adult Unit (as defined below) in The Ranch Special Planning Area will, when combined with the City's non –residential linkage fees as set forth in Rancho Cordova Municipal Code Chapter 16.89 and Sacramento County Code Chapter 16.89, State and federal tax credits, and other state, federal and local grant and loan program funds, result in sufficient funds for City, or another third party, to develop within the City approximately six percent (6%) of new residential development as affordable rental units and one percent (1%) as affordable for- sale units; and

WHEREAS, in preparing this AHP, the City and Landowner considered economic, environmental, and fiscal factors and community goals set forth in the general plan; and

WHEREAS, Landowner has agreed to meet the affordable housing obligations as identified in this AHP. This AHP fully satisfies Landowner's obligations pursuant to Housing Element Policy H.1.5 and all action items related thereto; and

WHEREAS, pursuant to the City's Housing Element, the requirement to enter into this AHP is a condition of approval for projects within The Ranch Special Planning Area. Any violation of Landowner of the terms of this AHP shall be considered a violation of the conditions of approval and shall permit the City to proceed with enforcement action as further set forth in this Agreement.

THEREFORE, in consideration of the foregoing recitals and the mutual covenants contained herein, the parties hereby agree to the following AHP:

DEFINITIONS

All capitalized terms used in this Agreement shall have the meaning set forth in this Section, unless otherwise defined in this Agreement. Any capitalized terms not defined herein shall have the meaning set forth in the Development Agreement ("DA") by and between Landowner and the City adopted by the City by Ordinance No._____, on _____;

"**AAU**" or "**Active Adult Units**" shall mean those age restricted units approved for residential development within The Ranch Special Planning Area that have not been designated by the City to be Affordable Units pursuant to Section 4 of this AHP.

"**AHP**" shall mean this Affordable Housing Plan Agreement, entered into between the City and Landowner and approved by Resolution No._____, on _____.

"**Affordable Housing In Lieu Fee**" is the fee payable pursuant to this AHP, in the amount of Four Thousand Eight Hundred Dollars ($4,800) per MRU and Three Thousand Eight Hundred Eight Dollars ($3,808) per AAU, and as may be adjusted as allowed by Section 2.2 of this AHP.

"**Affordable Units**" shall mean those units (whether single family or multi- family and regardless of density) designated by the City to be affordable under the provision of Section 4 of this AHP (and which are subject to a regulatory agreement as specified in that Section), with income levels calculated pursuant to regulations issued by the California Department of Housing and Community Development ("HCD") (with specific application to Sacramento County), and as may be adjusted from time to time by HCD based upon size of household, regional cost of living and other relevant factors. Subject to the regulations issued by HCD, City may designate Affordable Units as those units available to families with incomes ranging from zero to 120% of median family income.

"**HD**" shall refer to the acreage designated in The Ranch Special Planning Area for development at or above an average density of 26 units per acre.

"**MRU**" or "**Market Rate units**" shall mean those units approved for residential development (whether single family or multi- family, and regardless of density) within The Ranch Special Planning Area that have not been designated by the City to be Affordable Units pursuant to Section 4 of this AHP.

"**The Ranch Special Planning Area**" shall mean the entire property included within The Ranch Special Plan, approved by the City on _____, by Ordinance No._____.

"**RHNA Acreage**" shall mean those sites identified on Exhibit 3 to this AHP, which are designated in The Ranch Special Planning Area for high-density development at no less than 26 units per acre.

AGREEMENT

1. Property Subject to this Affordable Housing Plan. Landowner owns fee title to the Property. This AHP shall apply to, and be recorded on, the Property.

2. Payment of Affordable Housing In Lieu Fee. The Affordable Housing In Lieu Fee shall be paid on all MRU and AAU (both single family and multi-family). The Affordable Housing in Lieu Fee shall be due and payable at the time a building permit is issued for the unit or multi-family structure.

   2.1. **Exemptions.** No Affordable Housing In Lieu Fee shall be required to be paid for any Affordable Units developed on the Property or by any development or structure subject to a non-residential building permit. Any development or structure subject to a non-residential building permit shall pay the housing trust development impact fee established pursuant to Rancho Cordova Municipal Code Chapter 16.89 and Sacramento County Code Chapter 16.89.

   2.2. Increases to Affordable Housing In Lieu Fee. The Affordable Housing In Lieu Fee required under this AHP shall be adjusted annually in January based upon the October to October index value increase found in the 20 City Building Cost Index published in Engineering News Records (ENR), averaged with the ENR's index of the City of San Francisco between October and October of each year.

3. Regional Housing Needs Allocation for The Ranch Special Planning Area. Based on the RHNA, City has designated 7.14 acres within The Ranch Special Planning Area for high density development, and City has identified the RHNA Acreage as the property identified on Exhibit 3 to this AHP. Landowner has no obligation to develop or cause the development of Affordable Units on the RHNA Acreage. However, unless otherwise approved by the City, any development of that portion of the RHNA Acreage within the Property as, if, and when the same occurs, shall be consistent with RHNA requirements as identified by the Housing Element (in effect as of the date of this AHP), and shall be at a minimum density of 26 dwelling units per acre, subject to the following provisions:

   3.1. **No Net Loss.** California Government Code Section 65584 requires all development on RHNA qualifying acres approved by the State through the Housing Element process to yield no less than the minimum acreage used to satisfy State RHNA requirements. In order to contribute to the required RHNA performance, development on the RHNA Acreage following findings in writing

supported by substantial evidence: (1) the reduction is consistent with the adopted General Plan, including the Housing Element, and (2) the remaining sites identified in the Housing Elements are adequate to accommodate the City's share of the regional housing need pursuant to Government Code section 65863. The City will accept an average of 26 units per acre on RHNA Acreage being developed concurrently by the same owner.

3.2. **Review of RHNA Acreage.** The Parties acknowledge that SACOG will review, from time to time, the RHNA for the City. The SACOG allocation of RHNA units to the City may differ from the amounts anticipated in determining projected RHNA requirements for The Ranch Special Planning Area. However, no such future adjustment by SACOG in the allocation of RHNA units to the City shall result in an increase to the RHNA Acreage as described herein. There may be changes in market conditions and demand which results in amendments to policy and statute. In order to be more responsive to future conditions in The Ranch Special Planning Area, upon receipt by City of a written request from Landowner for reconsideration of the allocation of RHNA Acreage, the City will consider whether RHNA Acreage is still needed to accommodate the City's regional housing needs pursuant to Government Code section 65584.

4. Affordable Housing Performance Requirements. Landowner has identified the location and acreage of one (1) site (the "Identified Site"), as shown in Exhibit 4 attached hereto, that may be suitable for the construction of Affordable Units by third parties. Landowner will dedicate to City for compensation as set forth below, the Identified Site as follows:

4.1. Identified Site for Affordable Units.

4.1.1. Total Acreage. The Identified Site within the Property will result in 7.14 acres of HD to be dedicated by Landowner to the City. The Identified Site is depicted on Exhibit 4.

4.1.2. Timing and Manner of Acquisition. Landowner shall dedicate to the City the Identified Site no later than one hundred eighty (180) days after the completion of the frontage improvements and utility stubs for the Identified Site. The frontage improvements and utility stubs for the Identified Site shall be constructed with the first phase of the Chrysanthy road construction.

4.1.3. Compensation to Landowner. Landowner shall be paid an amount equal to Two Million Seven Hundred Fifty Thousand Dollars ($2,750,000) for the dedication to the City of the Identified Site through the application of credits to any exactions owed on remaining undeveloped units within The Ranch Special Planning Area. City and Landowner will enter into an

appropriate agreement memorializing the application of the credits prior to the dedication of the Identified Site to the City.

4.1.4. **Obligations of Landowner with Respect to Improvements for Identified Site.** City acknowledges and agrees that Landowner is not required to construct Affordable Units on the Identified Site. City further acknowledges and agrees that Landowner shall only be required to construct frontage improvements and utility stubs for the Identified Site.

4.1.5. **Construction of Affordable Units on the Identified Site.** City shall consult with Landowner on the selection of a third party who will construct Affordable Units on the Identified Site. The design, landscaping, materials, and all other pertinent development standards contained in The Ranch Special Plan Development standards and Design Guidelines (and any and all amendments thereto) shall apply to the construction of the Affordable Units.

4.2. **Other Options for Meeting Obligations Under the AHP.** The Parties acknowledge that as the Property develops and market conditions evolve, new solutions for meeting affordable housing obligations may arise and merit consideration. Pursuant to Section 5.2 below, the Parties may cooperate to amend this AHP to accommodate such additional options.

5. **Term, Amendment and Termination.**

5.1. **Term.** The term of this AHP shall extend and be equal to the term of the DA, but the requirements applicable to any MRU and AAU shall terminate as to the entire Property when all Affordable Housing In Lieu Fees required by this Agreement for the Property have been paid and Landowner has fully complied with the requirements of Section 4. Notwithstanding anything to the contrary in this AHP, the encumbrance of this AHP shall terminate and be of no further force and effect with respect to any completed residence, upon the sale of such residence to a member of the general public. In such events, such portions of the Property shall be deemed automatically released from the encumbrance of this AHP, without signing or recording any instrument of release.

5.2. **Amendment by Mutual Consent.** This AHP may be amended in writing from time to time by mutual consent of the City and Landowner.

5.3. **Termination.** This AHP may be canceled in whole or in part only by mutual consent of the City and Landowner or their successors in interest. Any fees paid pursuant to this AHP and spent by the City prior to the date of cancellation shall be retained by City.

6. **Breach.** This AHP is implemented as a condition of approval for consistency with the City's Housing Element. Any material violation by Landowner of the requirements under this AHP shall be considered a violation of a condition of approval, and City may invoke remedies appropriate to a violation of a condition of approval, including the withholding of building permits until such violation has been cured. The procedures regarding defaults and opportunity to cure set forth in the Development Agreement (Ordinance number _____, Sections 14 and 14.1 through 14.1.4, inclusive) shall apply to any alleged violation of the terms of this AHP.

7. **Severability.** If any part of this AHP is for any reason held to be unenforceable, the rest of the AHP remains fully enforceable. If, however, a provision of this AHP is determined to be invalid or unenforceable and the effect is to deprive Landowner of an essential benefit of this AHP, then Landowner will have the option to terminate this entire Agreement upon written notice to City. If City contends that it has been deprived of an essential benefit of this AHP, then City shall notify Landowner and the Parties will meet and confer to evaluate whether the remainder of the Agreement should be valid and enforceable.

8. Applicable Law. California law applies to this AHP without regard for any choice-of-law rules that might direct the application of the laws of any other jurisdiction.

9. Attorneys' Fees and Costs in Legal Actions by Parties to The Agreement. Should any legal action be brought by either party for breach of this AHP or to enforce any provisions herein, the prevailing party in the action is entitled to reasonable attorneys' fees, court costs, and any other costs as may be fixed by the Court.

10. Agreement Runs With The Land. Except as otherwise provided for in this AHP, all of the provisions, rights, terms, covenants, and obligations contained in this AHP are binding upon the parties and their respective heirs, successors and assignees, representatives, lessees, and all other persons acquiring the property this AHP applies to, or any portion thereof, or any interest therein, whether by operation of law or in any manner whatsoever. All of the provisions of this AHP are enforceable

as equitable servitudes and constitute covenants running with the land pursuant to applicable laws, including, but not limited to, Section 1468 of the California Civil Code. Except as otherwise provided in Section 5.1 of this AHP, each covenant to do, or refrain from doing, some act on the property subject to this AHP, or with respect to any owned property: (1) is for the benefit of such properties and is a burden upon such properties; (2) runs with such properties; and (3) is binding upon each party and each successive owner during its ownership of such properties or any portion thereof, and shall be a benefit to and a burden upon each party and its property hereunder and each other person succeeding to an interest in such properties.

11. **Indemnification.** Landowner agrees to indemnify, defend with counsel selected by the City, and hold harmless City, and its elected and appointed councils, boards, commissions, officers, officials, agents, employees, and representatives from any and all claims, costs (including legal fees and costs incurred by the City or awarded to plaintiffs) and liability for any personal injury or property damage which may arise directly or indirectly as a result of any actions or inactions by Landowner, or any actions or inactions of Landowner's contractors, subcontractors, agents, or employees in connection with the construction, improvement, operation, or maintenance of the Property or the Project. Landowner has no indemnification obligation with respect to the negligence or willful misconduct of City, or its elected and appointed councils, boards, commissions, officers, officials, agents, employees, and representatives.

12. **Cooperation In The Event of Legal Challenge to This AHP.** In the event of any legal or equitable action or other proceeding instituted by any third party challenging the validity of any provisions of this AHP:

12.1. The City and Landowner agree to reasonably cooperate in defending against the action or proceeding.

12.2. Landowner is solely responsible for its own costs and any costs incurred by the City for such defense.

12.3. Neither Landowner nor the City shall settle any action or proceeding on grounds that include non-monetary relief or admissions of liability without written consent of the other party. City agrees not to settle any action based upon monetary relief without the written consent of Landowner, unless City is solely liable and agrees to pay such monetary relief.

13. **Third Party Beneficiaries**. This AHP is made and entered into for the sole protection and benefit of Landowner and City and their successors and assigns. No other person shall have any right of action based upon any provision in this AHP.

14. **Notices.** All notices and other communications required or permitted under this AHP must be in writing and must be delivered in person or sent by certified mail, postage prepaid, or sent by facsimile or electronic mail.

    Notice required to be given to City shall be addressed as follows:
    City of Rancho Cordova
    Community Development Director
    2729 Prospect Park Drive
    Rancho Cordova, CA 95670
    Fax: (916) 851-8762
    E-mail: esparkman@cityofranchocordova.org

    Notice required to be given to Landowner shall be addressed as follows:

    Landowner
    Attn: _____
    _____
    Fax : _____
    E-mail: _____

    Either party may change the address stated herein by giving notice in writing to the other party and, thereafter, notices shall be addressed and transmitted to the new address.

15. **Assignment And Release**. From and after recordation of this AHP against the Property, Landowner shall have the full right to assign this AHP as to the Property, or any portion thereof, in connection with any sale, transfer or conveyance thereof, provided that: (1) Landowner has paid City any and all fees or amounts that City has reasonably determined to be due and owing to City arising out of this AHP for processing of any entitlements for the Property, or the development of the portion of the Property to be assigned due and owing as of the date of such assignment, and (2) upon the receipt by the City Community Development Director of the express written assignment by Landowner and assumption by the assignee of such

assignment in the form reasonably approved by the City. Upon the payment of such fees or amounts due and owing (which shall be acknowledged on the assignment by the City Community Development Director upon the request of Landowner) and the City's receipt of the express written assignment by Landowner, the assumption by the assignee of such assignment, and the conveyance of Landowner's interest in the Property related thereto, Landowner shall be released from further liability or obligation related to the portion of the property so conveyed and the assignee will be considered the "Landowner," with all rights and obligations related thereto, with respect to such conveyed property.

16. **Form Of Agreement; Recordation; Exhibits.** City will record this AHP and any subsequent amendment to this AHP, with the County Recorder within thirty (30) days of the Effective Date. City will also record any termination of any parts or provisions of this AHP. Any amendment or termination of this AHP that affects less than all of the Property must describe the portion of the property that is the subject of the amendment or termination. This AHP is executed in two (2) duplicate originals, each of which is deemed to be an original. This AHP consists of 13 pages and 4 exhibits, which constitute the entire understanding and agreement of the parties.

17. **Housing Trust Development Impact Fee.** Nothing in this AHP shall be construed to limit the application of the Housing Trust Development Impact Fee, a current city-wide non-residential affordable housing fee.

18. **Recitals.** The Recitals set forth above are an integral part of this Agreement and shall have the same contractual and legal significance as any other language in this Agreement.

[signatures on following page]

IN WITNESS WHEREOF, the City of Rancho Cordova, a municipal corporation, has authorized the execution of this AHP in duplicate by its City Manager and attested to by its City Clerk under the authority of Resolution No. ____-201_, adopted by the Council of the City on this ____ day of _____ 201_, and Landowner has caused this AHP to be executed.

"CITY"

CITY OF RANCHO CORDOVA,
a municipal corporation

By: _____
Name: Cyrus Abhar
Its: City Manager
Date:_____, 201_

ATTEST:

_____
City Clerk

APPROVED AS TO FORM:

_____
Adam U. Lindgren
City Attorney

"LANDOWNER"

K HOVNANIAN AT JAEGER RANCH, LLC,
a California Limited Liability Company

By:
Name:
Title:

Date: , 201_

EXHIBIT LIST

Exhibit 1:	Landowner's Property- legal Description
Exhibit 2:	Landowner's Property- Map
Exhibit 3:	RHNA Acreage
Exhibit 4:	Identified Site

EXHIBIT 1

Order No. 404-8829

EXHIBIT "A"
LEGAL DESCRIPTION

THE LAND DESCRIBED HEREIN IS SITUATED IN THE STATE OF CALIFORNIA, COUNTY OF SACRAMENTO, CITY OF RANCHO CORDOVA, AND IS DESCRIBED AS FOLLOWS:

ALL THAT PORTION OF SECTION 16, TOWNSHIP 8 NORTH, RANGE 7 EAST, M.D.B.&M., DESCRIBED AS FOLLOWS:

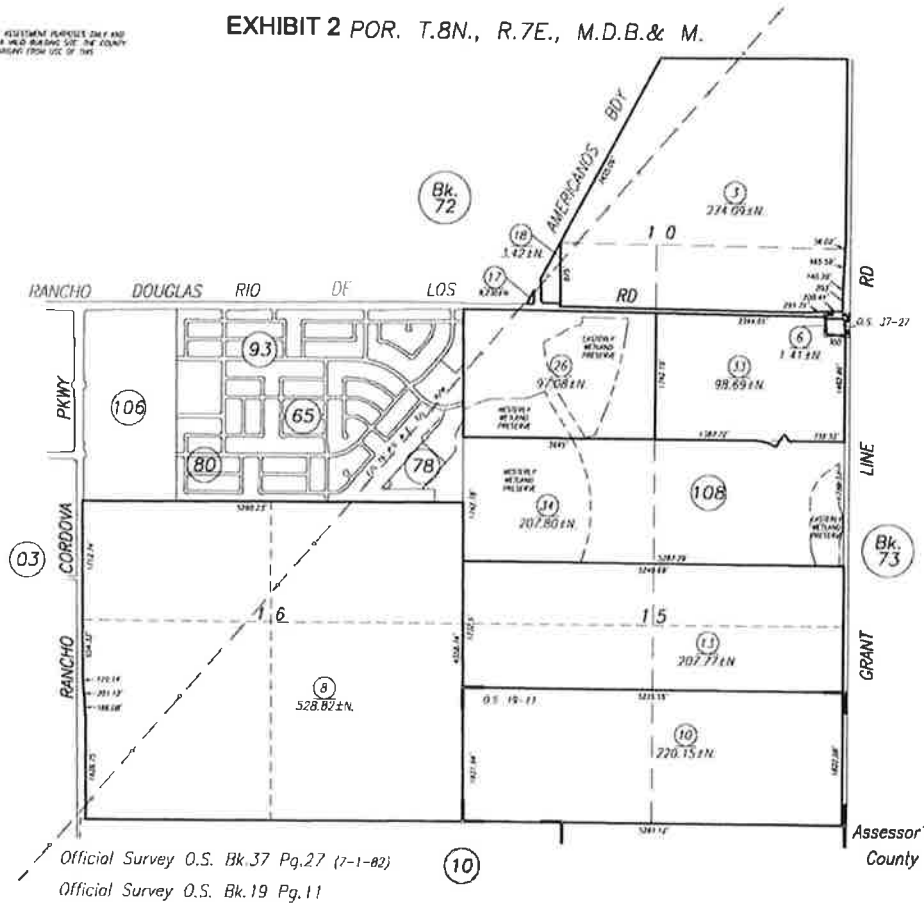
BEGINNING AT THE SOUTHWEST CORNER OF SAID SECTION 16; THENCE ALONG THE WEST LINE OF SAID SECTION, NORTH 0 DEGREES 19 MINUTES 30 SECONDS WEST 4,358.66 FEET; THENCE NORTH 39 DEGREES 56 MINUTES 50 SECONDS EAST 5,290.23 FEET TO A POINT ON THE EAST LINE OF SAID SECTION AND IN AN OLD FENCE, THENCE ALONG SAID SECTION LINE AND SAID OLD FENCE SOUTH 0 DEGREES 30 MINUTES EAST 4,358.74 FEET TO THE SOUTHEAST CORNER OF SAID SECTION 16, AND AN OLD FENCE CORNER; THENCE ALONG THE SOUTH LINE OF SAID SECTION, SOUTH 89 DEGREES 56 MINUTES 50 SECONDS WEST 5,303.44 FEET TO THE POINT OF BEGINNING.

A.P.N. 067-0040-008

DISCLAIMER: ASSESSORS PARCELS ARE FOR TAX ASSESSMENT PURPOSES ONLY AND DO NOT INDICATE LEGAL PARCELS. LEGALITY OF A VALID BUILDING SITE THE COUNTY OF SACRAMENTO ASSUMES NO RESPONSIBILITY ARISING FROM USE OF THIS INFORMATION.

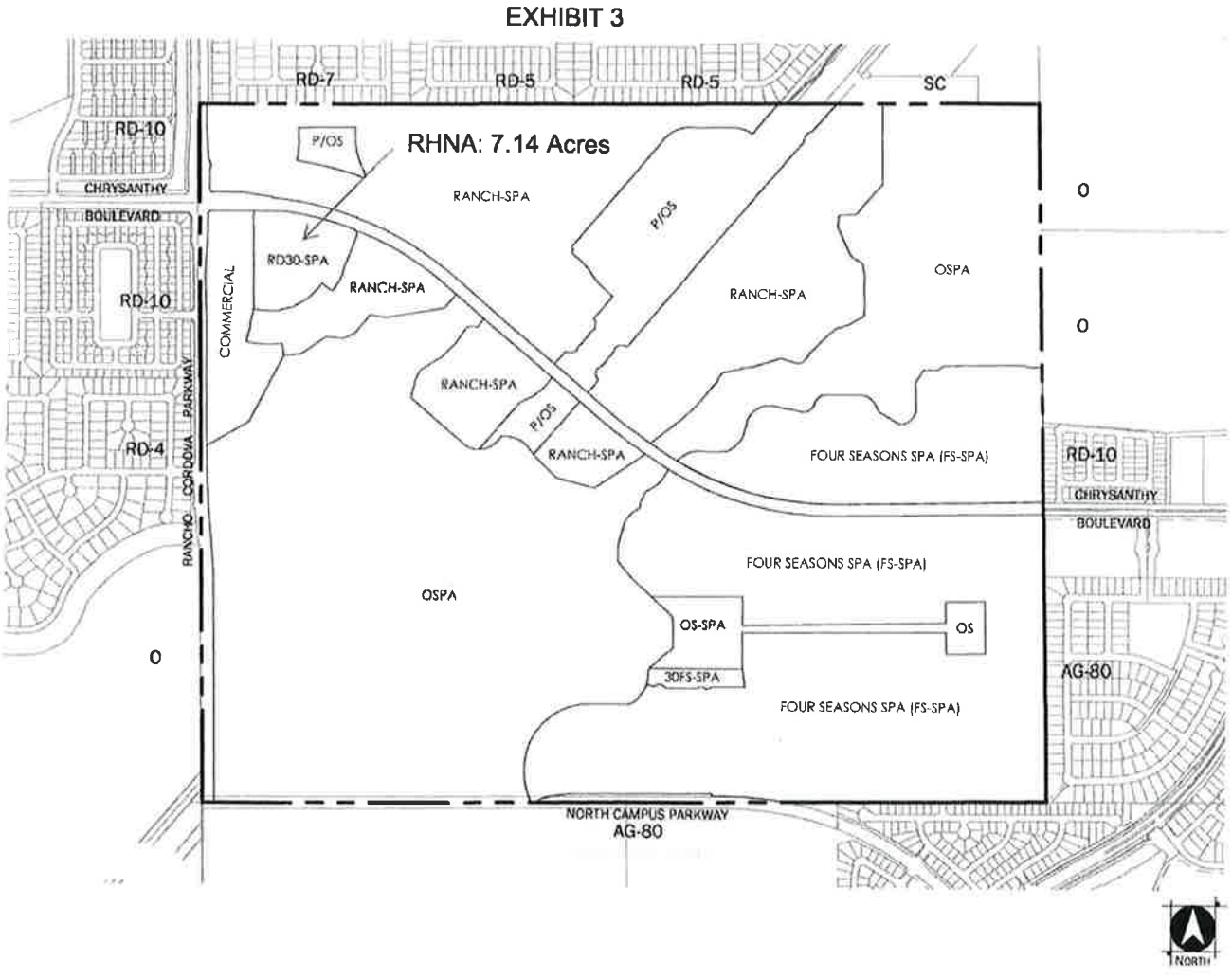
EXHIBIT 2 *POR. T.8N., R.7E., M.D.B.& M.*

67–04



Official Survey O.S. Bk.37 Pg.27 (7-1-82)
Official Survey O.S. Bk.19 Pg.11

Assessor's Map Bk. 67 Pg. 004
County of Sacramento, Calif.
OCT 10TH, 2018



J:\1000-s\1277_TheRanch\TheRanch-CA\Planning\Docs\SPA\Exhibits\Exh4_ZoningMap\Exh4_ZoningMap.dwg 7/30/2019 4:18 PM Shaurya Mc

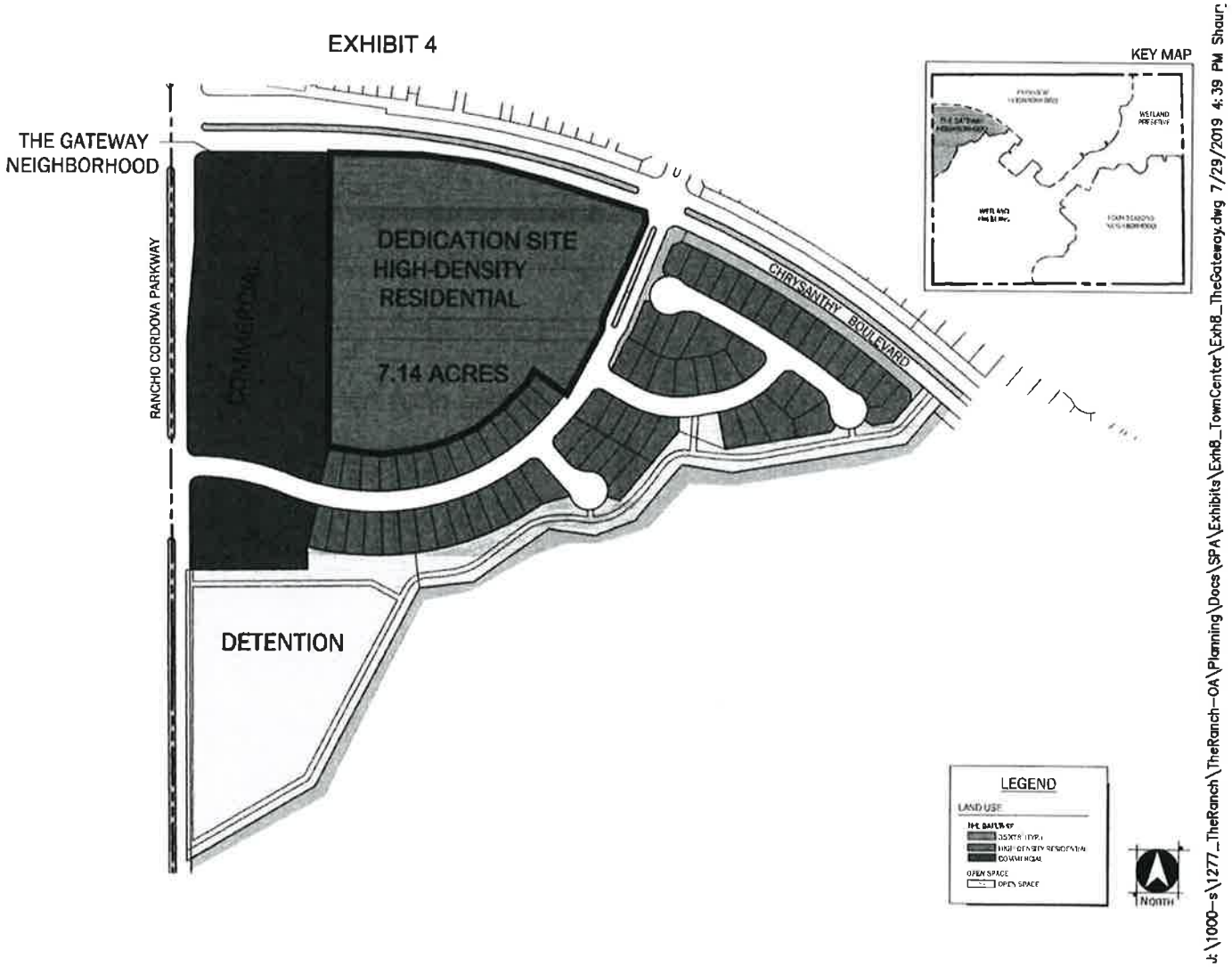


EXHIBIT 4
KEY MAP
THE GATEWAY NEIGHBORHOOD
RANCHO CORDOVA PARKWAY
DEDICATION SITE
HIGH-DENSITY
RESIDENTIAL
7.14 ACRES
CHRYSANTHY BOULEVARD
DETENTION
LEGEND
LAND USE
OPEN SPACE
OPEN SPACE
NORTH
J:\1000-s\1277_TheRanch\TheRanch-OA\Planning\Docs\SPA\Exhibits\ExhB_TownCenter\ExhB_TheGateway.dwg 7/29/2019 4:39 PM Shaun

CITY OF RANCHO CORDOVA

RESOLUTION NO. XX-2020

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF RANCHO CORDOVA APPROVING THE RANCH AFFORDABLE HOUSING PLAN

WHEREAS, the property within The Ranch Special Planning Area is owned by K. Hovnanian at Jaeger Ranch, LLC is referred to as "Landowners"; and

WHEREAS, The Ranch, due to its central location in the eastern part of the City, is envisioned as an integral part of the City; and

WHEREAS, The Ranch project is envisioned to be a planned community that illustrates the City's "building blocks" as described in the General Plan

WHEREAS, The Ranch project is a plan for a mixed-use development with a broad range of residential uses, commercial, parks/open space, natural resources, and associated infrastructure and roads on an approximately 530-acre site in the City. The Project includes 1,690 residential units at various densities; of that number of residential uses, 743 residential units are active adult, 5.73 acres of commercial, 14.36 acres of community and neighborhood parks, 8.99 acres of private parks; stormwater detention basins; open-space areas, trails, major roads with landscaping; and a 200 acre wetland natural resource/preserve; and

WHEREAS, the Housing Plan Agreement meets the meets the requirements of the California Government Code section 65580, the Legislature has established the following priorities related to the provision of affordable housing and the Rancho Cordova Municipal Code as set forth in findings below

WHEREAS, on January 6, 2020, the City Council held a properly noticed public hearing at which it received a report from City Staff regarding The Ranch project and oral and written testimony from the public, and deliberated on the item;

WHEREAS, the public hearing was noticed in accordance with the requirements set forth in Government Code section 65090 and 65091

NOW THEREFORE, the City Council of the City of Rancho Cordova hereby resolves as follows:

Section 1. RECITALS

The foregoing recitals are true and correct and made a part of this Resolution.

Section 2. AFFORDABLE HOUSING PLAN AGREEMENTS – FINDINGS AND APPROVALS

A. Findings.

i. Pursuant to California Government Code section 65580, the Legislature has established the following priorities related to the provision of affordable housing: 1) the availability of housing is of vital statewide importance, and the early attainment of decent housing and a suitable living environment for every Californian, including farmworkers, is a priority of the highest order; 2) the early attainment of this goal requires the cooperative participation of government and the private sector in an effort to expand housing opportunities and accommodate the housing needs of Californians of all economic levels; 3) the provision of housing affordable to low- and moderate-income households requires the cooperation of all levels of government; 4) local and State governments have a responsibility to use the powers vested in them to facilitate the improvement and development of housing to make adequate provision for the housing needs of all economic segments of the community; and 5) the Legislature recognizes that in carrying out this responsibility, each local government also has the responsibility to consider economic, environmental, and fiscal factors and community goals set forth in the general plan and to cooperate with other local governments and the State in addressing regional housing needs.

ii. Rancho Cordova General Plan Housing Element Policy H.1.5 states that "Developers of new residential projects within the newly developing areas of the City (generally in the large, vacant areas south of Highway 50) shall prepare an Affordable Housing Plan ("'Plan") for the project for City review and approval that identifies the project's plan for providing affordable housing." (City of Rancho Cordova Housing Element adopted December 16, 2013; "Housing Element").

iii. All large-scale development in the City's undeveloped areas, generally located south of Highway 50, is required to provide a range of housing opportunities responding to the housing needs associated with the proposed development. Developers must prepare an Affordable Housing Plan ("AHP") which "shall be approved in conjunction with the earliest stage of project entitlement, typically with the City Council approval of the Specific Plan, Development Agreement, or other primary land use entitlement."

iv. The Housing Element also states that "[in] order to ensure the production and preservation of housing affordable to the City's workforce, no productive, reasonable program or incentive option will be excluded from consideration within project-specific Affordable Housing Plans...." and therefore the AHPs will contain two major components: Regional Housing Needs Allocation ("RHNA") - or proof of capacity (i.e., appropriately zoned land); and Affordable Housing Performance (i.e., production or other strategies).

v. On September 20, 2012, the Sacramento Area Council of Governments' ("SACOG") Board of Directors unanimously approved the 2013-21 Regional Housing Needs Plan ("RHNP"). This action was the final stage in the adoption of an eight-year plan for the Regional Housing Needs Allocation ("RHNA"). RHNA is a State requirement to determine the number of housing units that cities and counties must plan for in their housing element updates. Pursuant to California Government Code section 65583, localities are required to update their housing elements to plan to accommodate their entire RHNA share by income category. For The Ranch Special Plan Area, lands intended to meet RHNA obligations may be developed as either market rate or affordable units, but the acreage must be developed at the minimum average densities identified in this AHP. For purposes of this AHP, market rate units shall mean those units which involve no regulatory requirement for affordability ("Market Rate Units"). Affordable units shall mean those units which include a regulatory agreement recorded against the land consistent with this AHP which designate the units in question to be as affordable to

families with incomes from zero to 120% of median family income (MFI) ("Affordable Units"). The definitions of income categories and income limits for these affordable units shall be consistent with those definitions updated from time to time by the State Department of Housing and Community Development at its website: < https://www.hcd.ca.gov/grants-funding/income-limits/state-and-federal-income-limits.shtml >.

vi. The attached The Ranch Affordable Housing Plan identifies very low, low-, moderate-, and above moderate-income housing, and provides both affordable housing in-lieu fees and land dedication in order to comply with General Plan Housing Element requirements; the attached Affordable Housing Plan will satisfy the affordable housing requirements for The Ranch Special Plan.

vii. The attached Affordable Housing Plan shall be binding on Landowner and on any and all of Landowner's successors and assigns developing property within The Ranch Special Plan Area and any amendments thereto. The Affordable Housing Plan and the requirements therein shall run with the property and remain in place until amended by mutual consent of the City and Landowner or terminated by the City in its sole discretion.

B. General Plan Consistency.

i. The attached Affordable Housing Plan (Exhibit A of the Development Agreement) is consistent with Rancho Cordova Housing Element Policy H.1.5, which requires "Developers of new residential projects within the newly developing areas of the City (generally in the large, vacant areas south of Highway 50) [to] prepare an Affordable Housing Plan for the project for City review and approval that identifies the project's plan for providing affordable housing"; and

ii. The Ranch Special Planning Area and the attached Affordable Housing Plan (Exhibit A of the Development Agreement) are consistent with the Housing Element Action H.1.2.1, which requires that residential development projects of 100 gross acres or more include a minimum of 5 percent of the total project residential developable acreage (net) for residential uses of 30 units per acre or higher, and 5 percent for residential uses of 10 units per acre or higher. The Ranch Special Plan Area meets both requirements; the Specific Plan contains 176.4 total net developable residential acres, of which 8.4 allow for residential uses of 30 units per acre or higher and 63.4 acres are designated for 10 units per acre or higher. The attached Affordable Housing Plan requires Landowner to designate certain portions of their property "High Density Residential," which supports 30 dwelling units per acre or higher and is therefore consistent with Housing Element Action H.1.2.1; and

iii. The land designations required under the attached Affordable Housing Plan (Exhibit A of the Development Agreement) are consistent with The Ranch Special Plan Area. These designations are also consistent with the General Plan as described in City Council Ordinance, adopting The Ranch Special Plan, in the findings above, and as follows:

a. General Plan Housing Element Action H.1.5.1 provides that an Affordable Housing Plan be approved in conjunction with early project entitlements to "ensure the production and preservation of housing affordable to the City's workforce…" and The Ranch Affordable Housing Plan is being approved in conjunction with the project's development agreement and therefore is consistent with Action H.1.5.1's direction to approve such plans early in the entitlement process.

b. The Affordable Housing Plan is consistent with the General Plan in that General Plan Housing Element Policy H.1.2 requires that adequate sites be maintained to meet the City's housing needs and the City's share of regional housing needs. Within the Sacramento region, local agencies must zone a certain amount of land for 30 dwelling units or more per acre in order to meet Regional Housing Need Allocation (RHNA) obligations. Further, the General Plan's Housing Element Action H.1.2.1 requires development projects greater than 100 acres in area to provide five percent (5%) of residential acreage to be zoned to accommodate 30 dwelling units per acre or higher. The Ranch Special Plan residential densities and affordable housing requirements carried out through the Affordable Housing Plan are proposed to achieve consistency with the above noted General Plan policy and action in that they call for at least five percent (5%) of residential acreage, approximately 8.4 of 176.4 net developable residential acres to accommodate 30 dwelling units per acre or higher.

c. The Affordable Housing In Lieu Fee for The Ranch Project and alternative methods to meet such requirements (such as land dedication), as established in the Affordable Housing Plan, will contribute to the development of new affordable residential rental units and affordable residential for-sale units; this is consistent with General Plan Housing Element Action H.1.5.1, which requires affordable housing plans to specify program options, including in-lieu fees and land dedications. Such provisions of the Affordable Housing Plan are further consistent with the General Plan in that they carry out Housing Element Policy H.1.2 to maintain adequate sites that support a range of housing types by allowing the City to acquire such sites.

C. Approval.

The City Council approves the attached Affordable Housing Plan and Exhibits thereto between the City and Landowner covering all Projects within The Ranch Special Plan(Exhibit A of the Development Agreement), in a form approved by the City Attorney, and authorizes the City Manager to execute the Affordable Housing Plan for The Ranch Special Plan by and between the CITY OF RANCHO CORDOVA and K. Hovnanian at Jaeger Ranch, LLC

Section 7. EFFECTIVE DATE.

This Resolution shall become effective upon the effective date of City Council Ordinance adopting The Ranch Special Planning Area.

PASSED AND ADOPTED by the City Council of the City of Rancho Cordova this _____ day of _____ 2020, by the following vote:

AYES:

NOES:

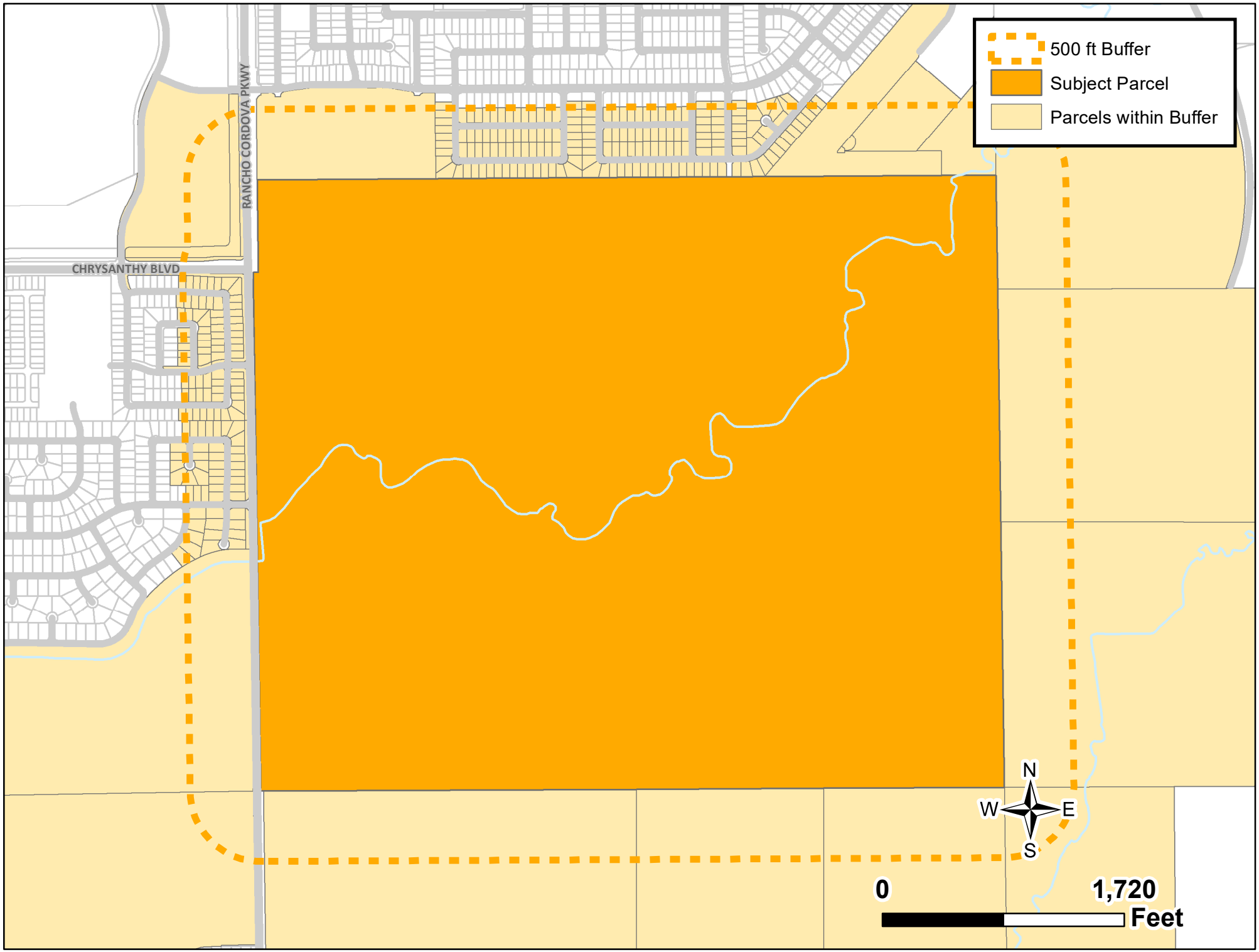
ABSENT:

ABSTAIN:

_____
David M. Sander, Mayor

ATTEST:

_____
Stacy Leitner, CMC
City Clerk


500 ft Buffer
Subject Parcel
Parcels within Buffer
RANCHO CORDOVA PKWY
CHRYSANTHY BLVD
N
W
E
S
0
1,720
Feet

CURRENT RESIDENT
4499 RANCHO CORDOVA PKWY
RANCHO CORDOVA CA 95742

K HOVNANIAN AT JAEGER RANCH LLC
3721 DOUGLAS BLVD STE 150
ROSEVILLE CA 95661

CURRENT RESIDENT
4369 BINCHY WAY
RANCHO CORDOVA CA 95742

GALALY AHMAD/EMAN ALY REV LIVING TRUST
6433 S LIVEOAK PL
BOISE ID 83716

RIDER STEPHEN R/RIDER FAMILY TRUST/ALPHA J RIDER
4365 BINCHY WAY
RANCHO CORDOVA CA 95742

RAM GURDAS
4361 BINCHY WAY
RANCHO CORDOVA CA 95742

HO DARREL/RITA A
4359 BINCHY WAY
RANCHO CORDOVA CA 95742

DOLBERG AMEE/DOLBERG PAUL
4358 CREGAN CT
RANCHO CORDOVA CA 95742

ELIZABETH JILL BROWN LIVING TRUST/ETAL
4362 CREGAN CT
RANCHO CORDOVA CA 95742

JANET JENNINGS 2013 REVOCABLE TRUST/ETAL
4366 CREGAN CT
RANCHO CORDOVA CA 95742

SHELLEY DELWYN J JR/TIFFANY R
4370 CREGAN CT
RANCHO CORDOVA CA 95742

BURKE MARK/ABBEY
4371 CREGAN CT
RANCHO CORDOVA CA 95742

HAMDYL SUMITO/SINANTYA SAPUTRO
4367 CREGAN CT
RANCHO CORDOVA CA 95742

LOURDES/ROBERT LOMIBAO REVOCABLE TRUST
4363 CREGAN CT
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
4359 CREGAN CT
RANCHO CORDOVA CA 95742

SIMON SHANG/JUN WANG LIVING TRUST
4076 MORNINGVIEW WAY
EL DORADO HILL CA 95762

CORDOVA PARK AND RECREATION DISTRICT
2729 PROSPECT PARK DR STE 230
RANCHO CORDOVA CA 95670

HUDSON GLORIA
12043 ERATO CIR
RANCHO CORDOVA CA 95742

LIU JEI ING
12047 ERATO CIR
RANCHO CORDOVA CA 95742

BETIONG TRUSTEI
55 SAN JUAN GRADE RD SPC 113
SALINAS CA 93906

CURRENT RESIDENT
12051 ERATO CIR
RANCHO CORDOVA CA 95742

MAYO JOSE/SANDRA RINCON
12055 ERATO CIR
RANCHO CORDOVA CA 95742

FRAILEY JONATHAN RICHARD PAUL/ETAL
12059 ERATO CIR
RANCHO CORDOVA CA 95742

LO CHAMOND
12063 ERATO CIR
RANCHO CORDOVA CA 95742

PEVNY MICHAEL E
12067 ERATO CIR
RANCHO CORDOVA CA 95742

BORROMEO ANGELYNE L
12071 ERATO CIR
RANCHO CORDOVA CA 95742

COCHRAN MICHAEL A
12075 ERATO CIR
RANCHO CORDOVA CA 95742

DEES LINDSAY S/KENNETH N
12079 ERATO CIR
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
12083 ERATO CIR
RANCHO CORDOVA CA 95742

NOUFER MARTIN/MICHELE
4377 ROSENSTOCK WAY
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
12087 ERATO CIR
RANCHO CORDOVA CA 95742

SIMON SHANG/JUN WANG LIVING TRUST
4076 MORNINGVIEW WAY
EL DORADO HILL CA 95762

CHO JEFFREY/VIVIAN CHEN
12091 ERATO CIR
RANCHO CORDOVA CA 95742

BARGAS MAGDALENA M/RALPH J SR
12095 ERATO CIR
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
12099 ERATO CIR
RANCHO CORDOVA CA 95742

SUJELA JAVED
20800 HOMESTEAD RD APT 65H
CUPERTINO CA 95014

WESTLING AMY E
12098 ERATO CIR
RANCHO CORDOVA CA 95742

AGRAWAL TRUST
612 PICASSO TER
SUNNYVALE CA 94087

CURRENT RESIDENT
12094 ERATO CIR
RANCHO CORDOVA CA 95742

ALLISON P YERKES/TIMOTHY M GUERRERO LIVING TRUST
12090 ERATO CIR
RANCHO CORDOVA CA 95742

BUFFALO THOMAS ANDREW/TRACEY MARIE
4404 NEEDLEGRASS DR
FOLSOM CA 95630

CURRENT RESIDENT
12086 ERATO CIR
RANCHO CORDOVA CA 95742

COTTOR MARK R/GIGI N
12082 ERATO CIR
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
12078 ERATO CIR
RANCHO CORDOVA CA 95742

TL TRUST
200 SOCRATES PL
EL DORADO HILL CA 95762

BULAONG FAMILY REVOCABLE TRUST
12074 ERATO CIR
RANCHO CORDOVA CA 95742

ONEAL SHAWN
4321 KERKYRA CT
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
4325 KERKYRA CT
RANCHO CORDOVA CA 95742

TL TRUST
200 SOCRATES PL
EL DORADO HILL CA 95762

CURRENT RESIDENT
4329 KERKYRA CT
RANCHO CORDOVA CA 95742

PURNAMA LIVING TRUST
7141 TAMARACK DR
DUBLIN CA 94568

MESSINGER RICHARD R/ALLISON M RATHBURN
4333 KERKYRA CT
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
4336 KERKYRA CT
RANCHO CORDOVA CA 95742

FENG JIANJUN/YIQING WANG
3159 HASTINGS WAY
SAN RAMON CA 94582

ANATOLIA INVESTMENTS LLC
11833 SPRING WALK WAY
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
12057 PERICLES DR
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
12061 PERICLES DR
RANCHO CORDOVA CA 95742

DUCKWORTH MICHAEL M/YEONG S
440 N CIVIC DR 401
WALNUT CREEK CA 94596

LAWSON SUZZETTEE
12065 PERICLES DR
RANCHO CORDOVA CA 95742

CORDOVA RECREATION/PARK DISTRICT
2729 PROSPECT PARK DR STE 230
RANCHO CORDOVA CA 95670

SACTO VLY CONSERVANCY
PO BOX 163351
SACRAMENTO CA 95816

SUNRIDGE PARK LLC
7700 COLLEGE TOWN DR STE 109
SACRAMENTO CA 95826

CITY OF RANCHO CORDOVA
2729 PROSPECT PARK DR
RANCHO CORDOVA CA 95670

CURRENT RESIDENT
4155 POOPENAUT CT
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
4151 POOPENAUT CT
RANCHO CORDOVA CA 95742

SACRAMENTO MUNICIPAL UTILITY DISTRICT
6201 S ST
SACRAMENTO CA 95817

SERRANO AMANDA
4251 CHOTEAU CIR
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
4247 CHOTEAU CIR
RANCHO CORDOVA CA 95742

HARDEV S SHERGILL REV TRUST
100 ENGLEHART DR
FOLSOM CA 95630

WATTERSON MICHELLE/WILLIAM III
4243 CHOTEAU CIR
RANCHO CORDOVA CA 95742

REINHARDT MARK K/MARION L/LESLIE A
4239 CHOTEAU CIR
RANCHO CORDOVA CA 95742

PYUN HEE BIN
4235 CHOTEAU CIR
RANCHO CORDOVA CA 95742

TELEP 2013 REVOCABLE TRUST
4231 CHOTEAU CIR
RANCHO CORDOVA CA 95742

MCCLENAHEN MATTHEW/HEATHER
4227 CHOTEAU CIR
RANCHO CORDOVA CA 95742

WOOD TED
4223 CHOTEAU CIR
RANCHO CORDOVA CA 95742

COULTER KEVIN G/TRISHA L
4219 CHOTEAU CIR
RANCHO CORDOVA CA 95742

PAUL/JOANNA MURRAY FAMILY TRUST
4215 CHOTEAU CIR
RANCHO CORDOVA CA 95742

CARLSON SCOTT E/MARIA L
4211 CHOTEAU CIR
RANCHO CORDOVA CA 95742

YATES JUDITH E/JUDITH E
4207 CHOTEAU CIR
RANCHO CORDOVA CA 95742

BALL BRIDGET D/MATTHEW A
4203 CHOTEAU CIR
RANCHO CORDOVA CA 95742

CONSTANTINE CHRISTI C
4199 CHOTEAU CIR
RANCHO CORDOVA CA 95742

BRAGG GREGORY/OLGA
4195 CHOTEAU CIR
RANCHO CORDOVA CA 95742

MAWIS VELMA/GUY PAULSELL
4191 CHOTEAU CIR
RANCHO CORDOVA CA 95742

BELNAP MICHAEL C
4187 CHOTEAU CIR
RANCHO CORDOVA CA 95742

DALEY MACELA/TODD
4183 CHOTEAU CIR
RANCHO CORDOVA CA 95742

QUEZADA BRIAN/LEAH
4179 CHOTEAU CIR
RANCHO CORDOVA CA 95742

SCHOLLAR ANTHONY
4175 CHOTEAU CIR
RANCHO CORDOVA CA 95742

IBARRA JOSEPH D
4171 CHOTEAU CIR
RANCHO CORDOVA CA 95742

ERNST GENEVA
4167 CHOTEAU CIR
RANCHO CORDOVA CA 95742

ANDERSON SEAN/AMBER DAVIS
4163 CHOTEAU CIR
RANCHO CORDOVA CA 95742

XIONG SHENG/XONG VANG
4159 CHOTEAU CIR
RANCHO CORDOVA CA 95742

GARCIA TORY D/MELISSA C
4155 CHOTEAU CIR
RANCHO CORDOVA CA 95742

MCMAHON TIMOTHY D/SANDRA K
4151 CHOTEAU CIR
RANCHO CORDOVA CA 95742

RAPPOPORT VLADIMIR/TATYANA
4147 CHOTEAU CIR
RANCHO CORDOVA CA 95742

PAWLIK BARBARA
4143 CHOTEAU CIR
RANCHO CORDOVA CA 95742

NALLAMALLI KALYAN
4139 CHOTEAU CIR
RANCHO CORDOVA CA 95742

HICKMAN LIVING TRUST
4135 CHOTEAU CIR
RANCHO CORDOVA CA 95742

GONZALEZ LE VERONICA R/DEREK A LE
12211 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

KIM DAVID/SONIA
12215 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

MAZZOLA ROBERT/VINCE
12219 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

LAFRADEZ RONALD V/LAFRADEZ ANN V
12223 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

CHISSIE BRADLEY SCOTT
12227 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

HERNANDEZ JOSE A
12231 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
12235 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

GARNER FAMILY TRUST
PO BOX 1045
IONE CA 95640

SVILICH SCOTT
12239 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

SKEELS ELIZABETH
12243 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

PLASCENCIA SANDRA
12247 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

SAETERN KAOCHIEN/ZAI C SAETEURN
12251 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

COSTA DENNIS R/MELANIE A
12255 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

DANIEL J HOWARD LIVING TRUST/ETAL
12259 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

HASSELL CARMEN/REXEL
12258 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

GARAG VEERESH/ONKAR HARSHITHA
12254 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

KNIGHT MARIE L
12250 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

GARY & MERI DEDIEGO FAMILY TRUST
12246 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

BONILLA NATHAN/SHERRIE
12242 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

POWERS RONALD B/MARCHETA F
12238 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

QUEZADA PAUL A/LAURA N
12234 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

PETERSON SAEJUK
12230 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

HOLMES ROBERT D
12226 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

TIPTON CRISPIN L
12222 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

MARTINEZ CHARLOTTE I/LUIS A
12218 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

JOHNSON JOSHUA B/ELAINE A
12214 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

RIVERA MICHAEL
12210 CEDAR BOG WAY
RANCHO CORDOVA CA 95742

RAINEY FAMILY TRUST
4216 CHOTEAU CIR
RANCHO CORDOVA CA 95742

SHAH FAMILY TRUST
4212 CHOTEAU CIR
RANCHO CORDOVA CA 95742

DIAS WAYNE J
4208 CHOTEAU CIR
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
4204 CHOTEAU CIR
RANCHO CORDOVA CA 95742

RAISBECK LYNETTE
2049 BANNER MINE CT
GOLD RIVER CA 95670

CHERINKA MEGAN
4200 CHOTEAU CIR
RANCHO CORDOVA CA 95742

MORAR KISHOR/SANGITABEN KISHOR
MORAR/NIRAJ MORAR
4196 CHOTEAU CIR
RANCHO CORDOVA CA 95742

CHRISTY JOHN/MARTHA
4192 CHOTEAU CIR
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
4188 CHOTEAU CIR
RANCHO CORDOVA CA 95742

MURADYAN ARAIK/ASTGHIK
2438 POWERS AVE
CLOVIS CA 93619

BEREZIN KELSEY LYN Z/MICHAEL
4184 CHOTEAU CIR
RANCHO CORDOVA CA 95742

WONG BALL/CHEN/WAYNE/TOMMY
4180 CHOTEAU CIR
RANCHO CORDOVA CA 95742

COLOMBO PAUL J
4176 CHOTEAU CIR
RANCHO CORDOVA CA 95742

MARTIN FAMILY TRUST
4172 CHOTEAU CIR
RANCHO CORDOVA CA 95742

DUNCAN JOSHUA A
4166 CHOTEAU CIR
RANCHO CORDOVA CA 95742

HERTOGH PATRICIA J R
12303 PALEO WAY
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
12307 PALEO WAY
RANCHO CORDOVA CA 95742

DOAN THANH S/LIEN T/THERESA P
L/ALLEN Y LEE
478 MUERER ST
FOLSOM CA 95630

KIM HANJUN/JIN YOUNG/OK HEE
12311 PALEO WAY
RANCHO CORDOVA CA 95742

QUIRARTE RAQUEL
12315 PALEO WAY
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
12319 PALEO WAY
RANCHO CORDOVA CA 95742

KHUGYANI ATIQULLAH/FARIDA
4112 PRESERVE WAY
RANCHO CORDOVA CA 95742

SWEIS SAHER
12323 PALEO WAY
RANCHO CORDOVA CA 95742

GILLOCK JASON/TAMMY L
12327 PALEO WAY
RANCHO CORDOVA CA 95742

SHERGILL HARDEV SINGH
12331 PALEO WAY
RANCHO CORDOVA CA 95742

PERRY TODD ALLEN/PAMELA RENEE
12330 PALEO WAY
RANCHO CORDOVA CA 95742

HENRY SOLORION/HILDA A COLE
SOLORIO REVOCABLE LIVI
12326 PALEO WAY
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
12322 PALEO WAY
RANCHO CORDOVA CA 95742

STEVENS DONALD L/MIRIAM E
5211 OAKRIDGE CT
FAIR OAKS CA 95628

RASMUSSEN LAURA I/HULL DANIEL E
12318 PALEO WAY
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
12314 PALEO WAY
RANCHO CORDOVA CA 95742

LEMOS-ADAIR EUNICE PEREIRA
6 BELLADONNA CT
SACRAMENTO CA 95835

CHA MORE F/BETTY T
12310 PALEO WAY
RANCHO CORDOVA CA 95742

STEWART DEBORAH J
12306 PALEO WAY
RANCHO CORDOVA CA 95742

EDWARDS KATHLEEN/MICHAEL
12302 PALEO WAY
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
12298 PALEO WAY
RANCHO CORDOVA CA 95742

KONG QINGBO/LINLI MIAO
248 PRAIRIE DOG LN
FREMONT CA 94539

JAMES W/JUDITH A RANDALL
REVOCABLE TRUST
12294 PALEO WAY
RANCHO CORDOVA CA 95742

MASSAGLIA DONALD
12295 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

SHAW MEAGAN/MORGAN K
12299 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

BRENTON NANCY/GEOF KNIGHT
12303 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

VADAPALLI RAJAN
12307 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

BILLMAN PAUL J/GINNY M
PO BOX 2364
RANCHO CORDOVA CA 95741

CURRENT RESIDENT
12311 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

DRAGOS KELLY B/RICHARD J
12315 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

BEDEGREW RONDA
12319 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

PODANY LINDA M
12323 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
12327 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

HARBELL GEOFF C/HARBELL PAMELA L
16725 WILD OAK WAY
MORGAN HILL CA 95037

HANSEN LINDA M/RICHARD G
12331 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

ANDERSON ZACHARY A/VANESSA N
FERNANDEZ
545 ARLINGDALE CIR
RIO LINDA CA 95673

CURRENT RESIDENT
4155 ETOWAY WAY
RANCHO CORDOVA CA 95742

KOHN YOLANDA/ROBERT J II/ROBERT
BRILES/IONEE
4151 ETOWAY WAY
RANCHO CORDOVA CA 95742

BAUTISTA FAMILY LIVING TRUST
4147 ETOWAY WAY
RANCHO CORDOVA CA 95742

WILLEMS JOAN
4143 ETOWAY WAY
RANCHO CORDOVA CA 95742

HOLDER WILLIAM L/JUDITH A RUBINO
4139 ETOWAY WAY
RANCHO CORDOVA CA 95742

RATAJCZAK CHRISTINA/NICHOLAS
4135 ETOWAY WAY
RANCHO CORDOVA CA 95742

PARK JIMMY
12340 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

SALUD FELICISIMO R
12336 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

BOWEN KEITH
12332 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

VOGEL JESSICA/ZACH JONATHAN
12328 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
12324 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

DICKSON FAMILY REVOCABLE LIVING TRUST
121 ASHRIDGE CT
GRANITE BAY CA 95746

TURNER MICHAEL JAMES/KASSANDRA LYNN CORRIGAN
12320 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

MAGTOTO MARK OLIVER O/ALIDA GRACE M
12316 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

EDGAR COREY/DANIELLE B MONTALVO
12312 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

MELOY BRIAN D
12308 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

BAIK EUN J/JIN H JUNG
90 ROOSEVELT ST
CRESSKILL NJ 7626

CURRENT RESIDENT
12304 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

KHANCHANDANI ASHTON A/ASHOK P/NANCY E
12300 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

BUZZELL GARY/SHERI
12296 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

SHIN SUNMI
12292 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

CHUI YIN M W
12288 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

FOX ANTHONY/AMANDA M
12284 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

LEE EUN DUG/JAMES K
12280 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

PHILLIPS ANDREW C/JINGYI
12276 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
12272 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

HERRERA JOSE I/ELIZABETH T
2271 HILLCREST AVE
EUREKA CA 95501

TAKHAR HARMANN S/KAMALJIT K
12268 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

STITES GENIE/LARRY
12264 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

MICHAEL CAYER REVOCABLE TRUST/ETAL
12260 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
12256 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

RENTACHINTALA & MARGABANDU FAMILY TRUST
1196 THORNBURY LN
SAN JOSE CA 95138

LOPEZ RANDY/ALMA
12289 PALEO WAY
RANCHO CORDOVA CA 95742

TREVINO JESSICA L
12293 PALEO WAY
RANCHO CORDOVA CA 95742

WIGHT VON SAVOYE EMILY A/MATTHEW D VON SAVOYE
12297 PALEO WAY
RANCHO CORDOVA CA 95742

WHITE ERIC JORDAN/TIFFANY ANN
12288 PALEO WAY
RANCHO CORDOVA CA 95742

MAKER DANA
12289 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

BROWN ROBERT
4124 BIG MEADOW WAY
RANCHO CORDOVA CA 95742

TSOGZOLMAA YAGAAN
4128 BIG MEADOW WAY
RANCHO CORDOVA CA 95742

CRISSEY JAMES L
4132 BIG MEADOW WAY
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
4136 BIG MEADOW WAY
RANCHO CORDOVA CA 95742

SALDANA KRISTIN G
2280 8TH AVE
SACRAMENTO CA 95818

BROOKS CHOI ERIN DAWN/CLAUDE YOUNG CHOI
4140 BIG MEADOW WAY
RANCHO CORDOVA CA 95742

PAULEY BARBARA L
4144 BIG MEADOW WAY
RANCHO CORDOVA CA 95742

MELIKYAN SAMVEL/NORAYR
4145 BIG MEADOW WAY
RANCHO CORDOVA CA 95742

NAIDU ANEETA/MANI R
4141 BIG MEADOW WAY
RANCHO CORDOVA CA 95742

ERIS RANDALL/DEBRA WILLIAMS
4137 BIG MEADOW WAY
RANCHO CORDOVA CA 95742

LO PETER K
4133 BIG MEADOW WAY
RANCHO CORDOVA CA 95742

EVERETT ERIC
4129 BIG MEADOW WAY
RANCHO CORDOVA CA 95742

LITTLEFIELD KATIE/ANDREW
4125 BIG MEADOW WAY
RANCHO CORDOVA CA 95742

SHAW CLIFTON/RANAE E
12404 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

HALL KRYSTOPHER
12400 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

MALDONADO MICHAEL J/JENNIFER L
12396 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

MOLES DALE R
12392 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

SIDHU HARPREET
12388 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

KOUR DALJEET/GURCHARAN SINGH
12384 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
12380 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

JALAL SOLTANIAN ZADEH REVOCABLE TRUST
PO BOX 1210
FOLSOM CA 95763

DRENNAN CAMERON G/ASHLEY M GRENNAN
12376 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

MILLETT BLAKE C/BROOKE L
12372 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

VAN XUOICU
12397 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

MADUENO IVAN
4143 CAHAKIA PL
RANCHO CORDOVA CA 95742

ADAMS CHARLES R/SHANNON M WONG
4147 CAHAKIA PL
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
4162 CAHAKIA PL
RANCHO CORDOVA CA 95742

TOUCHLINE SOFTWARE INC 401K PLAN
3220 RANKEN PL
EL DORADO HILL CA 95762

ANACLETO ERICA M/GREGORY JOHN FAGUNDES
4158 CAHAKIA PL
RANCHO CORDOVA CA 95742

HACKER TANYA/DAN A
12381 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

FARIA JULIE
12373 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

LOPEZ FRANCISCO/BRITTANY
12365 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

BILLINGS DANIELLE MARIE/JOSEPH CHARLES
12368 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

KUKS ROBERT JR/JESSICA
12364 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

BOYCE CLARK N/CRAIG A/JAN C
12360 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

SHEIKHOLESLAMI VIDA
12356 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
12348 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

UTTER ISAAC
PO BOX 1311
RANCHO CORDOVA CA 95741

TRONCI MARIO/GRACE
12344 PAWCATUCK WAY
RANCHO CORDOVA CA 95742

CRESLEIGH HOMES CORPORATION
433 CALIFORNIA ST 7TH
SAN FRANCISCO CA 94104

GARCIA BRIAN B/JASMINE-MAY/BENJAMIN SAN JOSE
12033 TIRESIAS WAY
RANCHO CORDOVA CA 95742

SCHULTZ WILLIAM EDWARD/MARY ANN KIRK
12037 TIRESIAS WAY
RANCHO CORDOVA CA 95742

BALL ROBERT/RANPREET KAUR/LAURIE
12041 TIRESIAS WAY
RANCHO CORDOVA CA 95742

MOHAMMED IMTIAZ ALI
12045 TIRESIAS WAY
RANCHO CORDOVA CA 95742

JONES JASON/TANYA
12049 TIRESIAS WAY
RANCHO CORDOVA CA 95742

SONG YUSOO/SOON HO
12053 TIRESIAS WAY
RANCHO CORDOVA CA 95742

PARTLOW NANCY J/JAMES C
12057 TIRESIAS WAY
RANCHO CORDOVA CA 95742

LEWIS SANDRA M/JENNIFER E
12061 TIRESIAS WAY
RANCHO CORDOVA CA 95742

WILLEMSSEN MICHAEL C/TIANA H
12065 TIRESIAS WAY
RANCHO CORDOVA CA 95742

MARA JANICE/WILLIAM
12069 TIRESIAS WAY
RANCHO CORDOVA CA 95742

RECELLA-CANDOLESAS RANDALL/KRYSTAL CHAC
12073 TIRESIAS WAY
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
12077 TIRESIAS WAY
RANCHO CORDOVA CA 95742

DAYE EUREKA C/THOMAS L TODD
PO BOX 583072
ELK GROVE CA 95758

WILLIAMS JORDAN/STACY MURRAY
12081 TIRESIAS WAY
RANCHO CORDOVA CA 95742

CHULAAKSORN PHANTHIP
12085 TIRESIAS WAY
RANCHO CORDOVA CA 95742

TA ANTHONY HUY QUANG/DONNA MY DUNG PHAM
12089 TIRESIAS WAY
RANCHO CORDOVA CA 95742

KLEIDON GARY L
12093 TIRESIAS WAY
RANCHO CORDOVA CA 95742

CHAPMAN SARENE/ALISON B MORA
4351 ORPHEUS CIR
RANCHO CORDOVA CA 95742

SHRUM ANDREW N/COURTNEY
4347 ORPHEUS CIR
RANCHO CORDOVA CA 95742

RAMAKRISHNAN MEERA
4348 ORPHEUS CIR
RANCHO CORDOVA CA 95742

GRAHAM ANDREW WILLIAM/KIMBERLY SALVADOR
4352 ORPHEUS CIR
RANCHO CORDOVA CA 95742

POWELL KENDRA M/ANTHONY B SAENZ
12092 TIRESIAS WAY
RANCHO CORDOVA CA 95742

2018 MAGENDIRAN GANESAN REVOCABLE TRUST
12088 TIRESIAS WAY
RANCHO CORDOVA CA 95742

PATRICIA MOSIER REVOCABLE TRUST 1997
12084 TIRESIAS WAY
RANCHO CORDOVA CA 95742

BEACHELL ERIC M/KENDRA K
12080 TIRESIAS WAY
RANCHO CORDOVA CA 95742

BYREDDY MITRAVINDA/ANIL R MALLAVARAPU
12076 TIRESIAS WAY
RANCHO CORDOVA CA 95742

LABRA MAURA MATEO/PHILLIP JOHN MATEO
12072 TIRESIAS WAY
RANCHO CORDOVA CA 95742

PUSATERI DIANNE/KEITH
12068 TIRESIAS WAY
RANCHO CORDOVA CA 95742

RANKIN CHRISTY A/DANIEL A
12044 TIRESIAS WAY
RANCHO CORDOVA CA 95742

YOON YOUNGSIK
12040 TIRESIAS WAY
RANCHO CORDOVA CA 95742

GARCIA CAROL/PREM K PERUMAL V
12036 TIRESIAS WAY
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
12032 TIRESIAS WAY
RANCHO CORDOVA CA 95742

HARDEV S SHERGILL REV TRUST
100 ENGLEHART DR
FOLSOM CA 95630

BHULLAR CHARAN S/AMANJOT K
11739 KOUROS WAY
RANCHO CORDOVA CA 95742

CURRENT RESIDENT
12028 TIRESIAS WAY
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
4307 ORPHEUS CIR
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
4311 ORPHEUS CIR
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
4315 ORPHEUS CIR
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
4319 ORPHEUS CIR
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
4323 ORPHEUS CIR
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
4327 ORPHEUS CIR
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
4331 ORPHEUS CIR
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
4335 ORPHEUS CIR
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
4339 ORPHEUS CIR
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
4343 ORPHEUS CIR
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
4344 ORPHEUS CIR
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
4340 ORPHEUS CIR
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
4316 ORPHEUS CIR
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
4312 ORPHEUS CIR
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
4308 ORPHEUS CIR
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
4304 ORPHEUS CIR
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
12048 TOURS WAY
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
12052 TOURS WAY
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
12056 TOURS WAY
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
12060 TOURS WAY
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
4269 MINOTAUR CIR
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
4265 MINOTAUR CIR
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
4261 MINOTAUR CIR
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
4257 MINOTAUR CIR
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
4253 MINOTAUR CIR
RANCHO CORDOVA CA 95742

LENNAR HOMES OF CALIFORNIA INC
1420 ROCKY RIDGE DR 320
ROSEVILLE CA 95661

CURRENT RESIDENT
4249 MINOTAUR CIR
RANCHO CORDOVA CA 95742

LENNAR HOMES OF CALIFORNIA INC
1420 ROCKY RIDGE DR 320
ROSEVILLE CA 95661

CURRENT RESIDENT
4245 MINOTAUR CIR
RANCHO CORDOVA CA 95742

LENNAR HOMES OF CALIFORNIA INC
1420 ROCKY RIDGE DR 320
ROSEVILLE CA 95661

CURRENT RESIDENT
4241 MINOTAUR CIR
RANCHO CORDOVA CA 95742

LENNAR HOMES OF CALIFORNIA INC
1420 ROCKY RIDGE DR 320
ROSEVILLE CA 95661

CURRENT RESIDENT
4252 MINOTAUR CIR
RANCHO CORDOVA CA 95742

LENNAR HOMES OF CALIFORNIA INC
1420 ROCKY RIDGE DR 320
ROSEVILLE CA 95661

CURRENT RESIDENT
4256 MINOTAUR CIR
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
4260 MINOTAUR CIR
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
4264 MINOTAUR CIR
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

CURRENT RESIDENT
4268 MINOTAUR CIR
RANCHO CORDOVA CA 95742

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

SUNRIDGE ANATOLLA LLC
7700 COLLEGE TOWN DR 101
SACRAMENTO CA 95826

MONTELENA DOUGLAS LLC
5241 ARNOLD AVE
MCCLELLAN CA 95652

MONTELENA DOUGLAS LLC
5241 ARNOLD AVE
MCCLELLAN CA 95652

SACRAMENTO SANITATION DISTRICT
10060 GOETHE ROAD
SACRAMENTO CA 95827

SACRAMENTO REGIONAL COUNTY
SANITATION DISTRICT
10060 GOETHE ROAD
SACRAMENTO CA 95827

SACRAMENTO COUNTY WATER
AGENCY
10151 FLORIN ROAD
SACRAMENTO CA 95829

PG&E
2730 GATEWAY OAKS DRIVE
SACRAMENTO CA 95833

PG&E
343 SACRAMENTO STREET
AUBURN CA 95603

SMUD
6301 S STREET MS B304
SACRAMENTO CA 95817

SMUD
6301 S STREET MS B304
SACRAMENTO CA 95817

SMUD
6301 S STREET MS B404
SACRAMENTO CA 95817

SACRAMENTO METROPOLITAN FIRE
10545 ARMSTRONG AVE STE 310
MATHER CA 95655

ELK GROVE UNIFIED SCHOOL DISTRICT
9510 ELK GROVE-FLORIN RD
ELK GROVE CA 95624

SACRAMENTO COUNTY WATER
AGENCY
827 7TH STREET RM 301
SACRAMENTO CA 95814

CITY OF RANCHO CORDOVA
2729 PROSPECT PARK DR
RANCHO CORDOVA CA 95670

MEMORANDUM

DATE: January 6, 2020

TO: Honorable Mayor and Council Members

FROM: Kim Juran, Administrative Services Director

SUBJECT: **TECHNOLOGY INITIATIVES UPDATE**

RECOMMENDATION

Receive Technology Initiatives Update.

RESULT OF RECOMMENDED ACTION

This presentation is for informational purposes only.

BACKGROUND

The City has a number of technology projects currently underway. The purpose of this presentation is to update the CIty Council and members of the public on the status of these technology initiatives. In addition, staff will present a demonstration of the City's new Customer Service portal that will enable online application and payment of several different City processes. The first phase of this project, which is slated to go live on March 2, 2020, will enable online application and payment of business licenses, rental housing licenses, and animal licenses. The second phase of the project, which will go live in early 2021, will allow for online building permit application and payment.

FISCAL IMPACT AND FUNDING SOURCE

There is no fiscal impact.

ATTACHMENT(S)

1. City Council_1-6-2020_Technology Initiatives Update

Technology Initiatives Update

January 6th, 2020

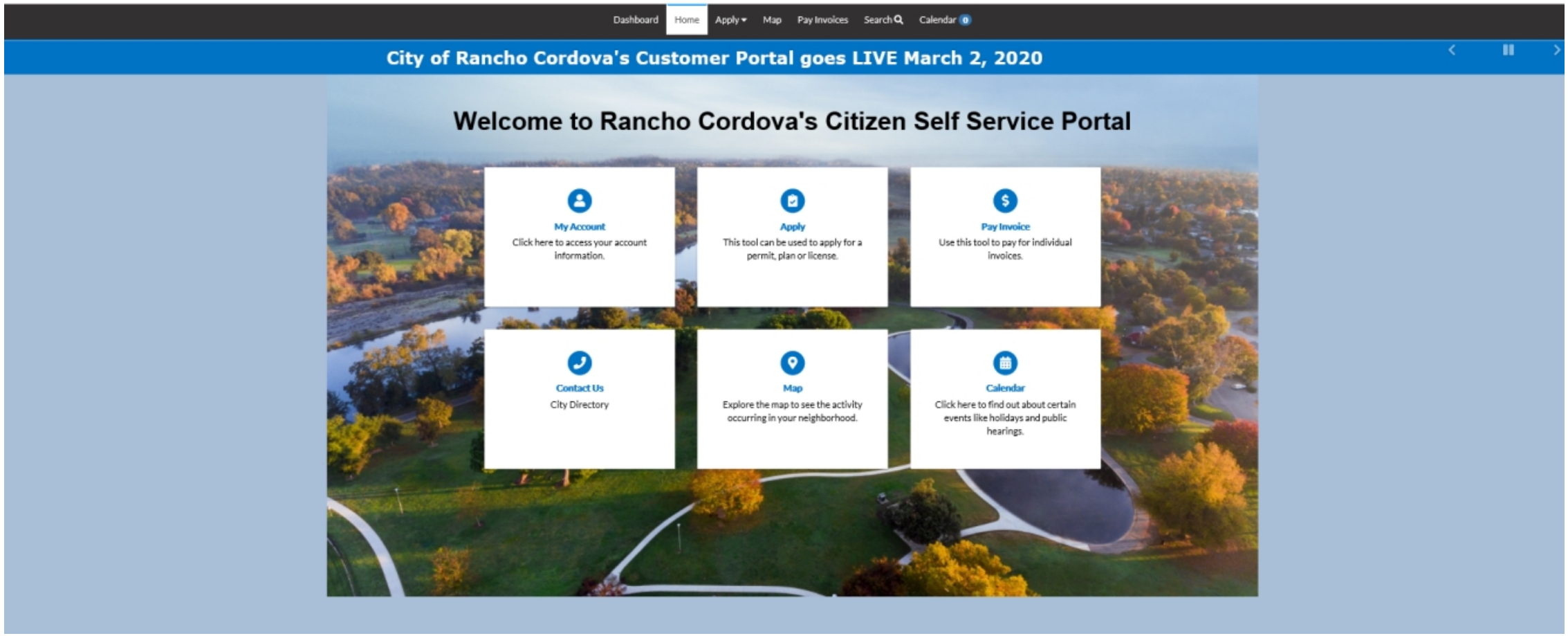
a fresh take. RANCHO CORDOVA CALIFORNIA

CityOfRanchoCordova.org

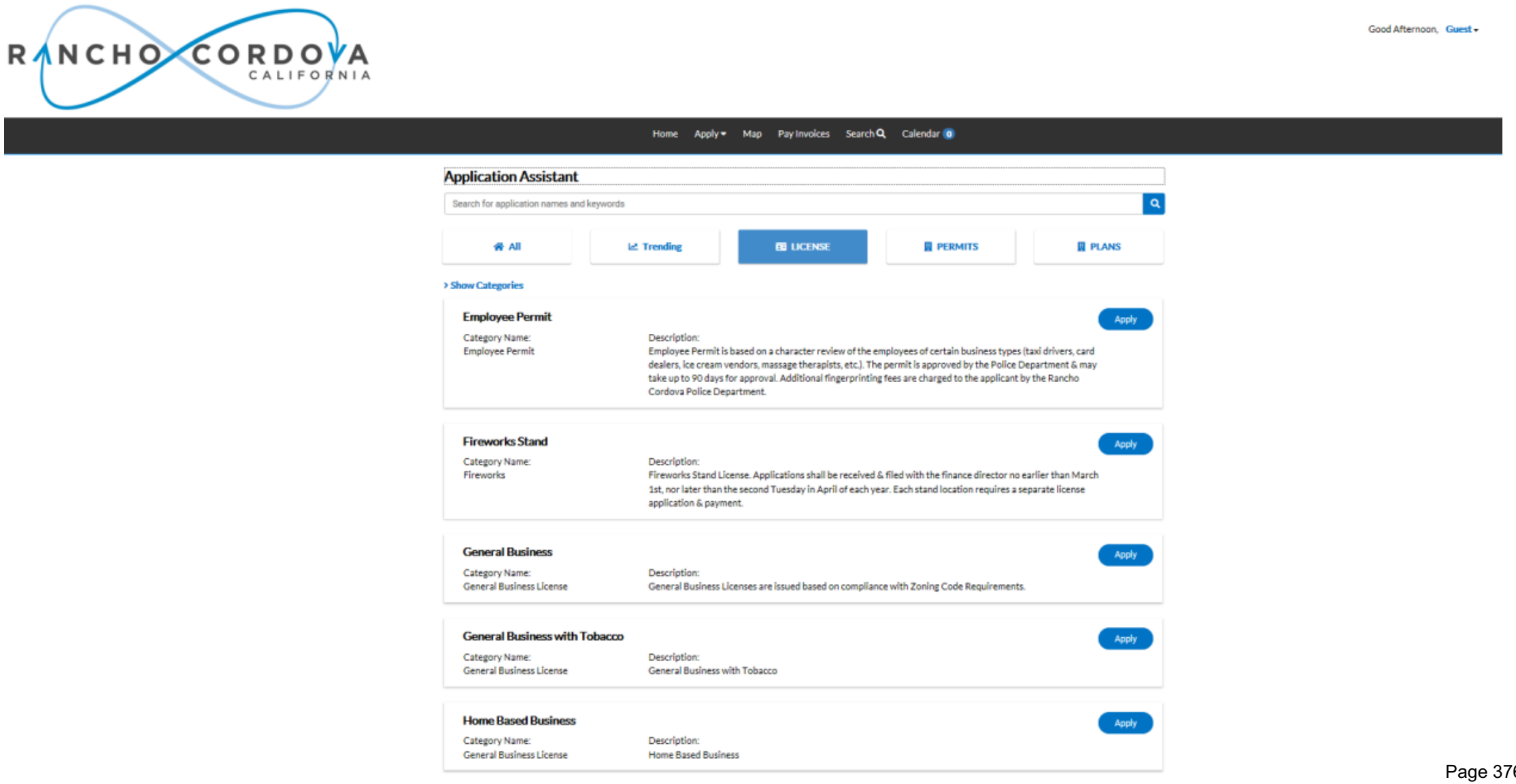
Technology Initiatives Currently Underway

- ✓ Civic Clerk Agenda Management
- ✓ OnBase / Document Management
- ✓ Financials/Enterprise Resource Planning
- ✓ OpenGov Budget System
- ✓ EnerGov Land Management System

EnerGov – Citizen Self-Service (CSS) Portal



EnerGov – Citizen Self-Service (CSS) Portal



THANK YOU

QUESTIONS?